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Abstract

This dissertation is about a collection of musical repertories—broadly speaking, American experimentalism—and the practice of music analysis. In many ways, the two do not go hand in hand: music analysis has long found itself confounded by experimental traditions, in some cases writing them off altogether. I argue that this tension is no coincidence but a matter of design. Composers of experimental music were paradigmatically concerned with the breaking and recasting of cultural norms and practices—of performance, listening, composition, and the medium of music. It thus comes as no surprise that the discipline of music analysis found itself breaking against these repertories. I contend, however, that these sites of breaking should not be abandoned but encountered as a productive field of conflict with the potential to recast both experimentalism and music analysis.

The analytical approach I develop draws from disciplinary perspectives of music theory, art history, and literary criticism, and takes up three main themes: technology, culture, and analysis. Technological innovations in the twentieth century changed the way composers thought about and created musical sound; within the dissertation, I argue that experimental composers also used their musical works *as* technologies for the redefinition of important musical concepts, and for the breaking and recasting of cultural norms and practices. Listening closely to their works and cultural interventions leads to a reflexive analytical perspective in which music theory can rethink its disciplinary methods.

In Chapter 1, theories of form and conceptual art intersect in a music-analytical vignette of John Cage's *0′00″* (1962). In Chapter 2, I argue that, through his indeterminate musical works, Cage composed a listening subjectivity for his audiences. Chapter 3 centers on the use of mechanical repetition to develop alternative listening practices in Pierre Schaeffer's *musique concrète* and Steve Reich's early minimal music. In Chapter 4, I suggest that Reich's *It's Gonna Rain* (1965) replaces the anthropomorphism of classical music with technomorphism through abnegations of agency and

voice. Finally, I consider how the music of Julius Eastman and Maryanne Amacher can productively challenge experimental music's predominant ways of listening and music theory's ways of conducting analysis.

Introduction

Silver Streetcar for the Orchestra and the Analysis of Conceptual Music

> "please tell me that this is a real piece"[1]

Alvin Lucier's composition for solo triangle, *Silver Streetcar for the Orchestra* (1988), is remarkably simple. The composer explains the piece in his own words, in the liner notes for a recording by percussionist Brian Johnson:

> In *Silver Streetcar*, the player dampens the triangle with the thumb and forefinger of one hand while tapping the instrument with the other. The performance consists of moving the geographical locations of these two activities and changing the pressure of the fingers on the triangle as well as the speed and loudness of the tapping. During the course of the performance, the acoustic characteristics of the folded metal bar are revealed.[2]

Among the unlikeliest of solo instruments, the triangle is a familiar member of the percussion battery, and yet *Silver Streetcar* can come as something of a revelation. The triangle usually rings from behind the orchestra, providing sonic punctuation to climactic moments rather than a full-fledged

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1 YouTube user xylojet's comment on "'Silver Streetcar for the Orchestra' by Alvin Lucier," uploaded and performed by Brad Meyer on May 5, 2011: https://www.youtube.com/watch?v=wxkaZK-VqdI, accessed May 12, 2016.

2 From liner notes for Alvin Lucier, *Ever Present*, Mode 178, 2007.

musical voice. But in Lucier's work, the instrument and its many tones take center stage. The triangle's fast attack, its complex timbres, and its slow decay together weave an elaborate sonic mesh which ricochets off walls, floors, and ceilings. A multitude of frequencies swell up and out of the humble triangle, its often-unnoticed tones suddenly rising to the foreground, combining with rings and resonances in vibrant sonority. Each strike of the beater renews the triangle's ringing, re-spinning the web of sound as the instrument turns and swings.

In the context of Lucier's work, the triangle slips free of its archetypal, instrumental role; freed from the restraints of melody and meter, the elegantly bent metal bar is finally allowed to say its piece through a minimal formal design. *Silver Streetcar for the Orchestra* is, in this sense, a rediscovery of something hidden in plain sight: the sheer sound of the triangle. Its bare repetition allows for reflective appreciation of the simple instrument in all its beauty, but the piece is also an undeniable bit of musical novelty. YouTube user xylojet (quoted above) asks the World Wide Web for a certification of Lucier's work, perhaps in the hope that someone with more knowledge or better judgment will answer in the affirmative—someone who can confer the status of a "real piece" upon this strange performance. In this dissertation, I pursue some of the underlying questions, doubts, and interests which inform xylojet's plea for musical legitimacy. What, for example, motivated their comment? Was it that *Silver Streetcar* seemed a little too simple, too cute, or too fun to be real music? Or could it be that xylojet suspected a sort of internet practical joke—that the percussionist, tongue in cheek, recorded himself hitting a triangle for a few minutes and gave it a title in order to poke fun at those wacky composers of experimental music and at anyone foolish enough to buy it?

If *Silver Streetcar* is indeed a real piece of "music," it's a very unusual sort of piece. It doesn't have any of the ordinary markers of sounds organized for *musical* purposes: no tune, no text, no

chords, no apparent meter (although it does repeat, ad nauseum, one basic rhythmic pattern). Over the five-minute performance that Brad Meyer offers in his video, the piece offers very little in the way of drama or formal design of the sort that one might expect from a piece of music. Instead, the repeated beating of the triangle plays into one of two routes the listener can take: either the static, monotonous sounds gradually become charming, enchanting, and meditative; or *Silver Streetcar* falls flat, and the constant ringing grates on one's patience—not just boring, but annoying in an almost torturous way. In either case, the substance of Lucier's composition doesn't lie in themes or motives, in melodies or rhythms, or in intricate formal design; rather, the appeal (or lack thereof) lies in the sheer sound of the triangle.

The irony of *Silver Streetcar*—and a number of other works of conceptual music—is that an apparently simple compositional design nonetheless allows Lucier, his performer, and the sounds of the triangle to spark a number of rich and challenging questions that lie behind xylojet's comment. Is this music? If not, then what is it, exactly? If it *is* a real piece, then what does that mean for music? Can anything be music? What *can't* be music? Who decides these things? These are not the kind of questions that music theorists ordinarily pursue, at least in part because the questions behind this YouTube comment are not readily answerable by any of music theory's ordinary methods. And yet, the big questions that *Silver Streetcar* raises are the same kind of questions that motivate the composition, the performance, and the scholarly study of experimental music.

This dissertation is, on the one hand, about a collection of musical repertories—American experimentalism in the expanded sense—and, on the other, it is about a network of theoretical questions that involve music analysis. In many ways, the two do not go hand in hand; music analysis has long found itself confounded by experimental traditions, in some cases writing them off

altogether. In the chapters that follow I argue that this trouble is no coincidence, but a matter of design. Composers of experimental music were paradigmatically concerned with the breaking and recasting of cultural norms and practices—of performance, of listening, of composition, and of the medium of music itself. It should come as no surprise that the discipline of music analysis has found itself breaking against these repertories. I contend, however, that these sites of breaking should not be abandoned, but encountered as a productive field of conflict with the potential to recast both experimentalism and music analysis.

At the most general level, music analysis involves a critical reading of a musical work and its sounds, a detailed description of how the work is organized, and an empathetic interpretation of the work in its cultural contexts. At this general level, Alvin Lucier's *Silver Streetcar for the Orchestra* makes an intriguing object for music analysis: the sound of the triangle in a minimal formal design immediately elicits questions about the status of the art object, cultural authority, and music's conceptual underpinnings. The problem for the music analyst, however, is one of method. The novelty and intrigue of *Silver Streetcar* do not come across in standard musical notation, where so much of music theory's analytical work takes place; nor does the work evoke its conceptual conundrums in spectrographic form with the triangle's sonic intricacy laid out visually. For the analysis of such works of experimental music, what is needed is an adaptable methodological approach that draws upon sound and form in combination with music's cultural contexts in order to illuminate the ways in which music manages to raise these big questions.

The analytical approach I develop in this dissertation takes up three themes that will help to bring the curious repertories of experimental music into productive conflict with the methods of music theory: technology, culture, and analysis. Taken individually, each one extends far beyond the

scope of this project. Their particular convergences in the composition and performance of American experimental music, however, can help to link music theory's disciplinary emphasis on sound and form with what is most salient about musical works such as *Silver Streetcar* in their cultural contexts. In what follows, I will briefly apply each of these themes (technology, culture, and analysis) to Lucier's work and discuss the meanings of these terms within the scope of this project. It is my hope that establishing these terms early on will help to anchor points in the dissertation where I consider the relationships between twentieth-century American experimental music and its *technologies*, the effects and the expressions of these relationships in modern musical *culture*, and a related network of theoretical questions that involve practices of music *analysis*. More specifically, I explore some of the ways in which emergent sound technologies functioned as conceptual and material catalysts within experimental music's communities of practice: the new sounds made possible by machines opened up new possibilities for musical composition. In turn, composers of experimental music began to use their experimental works as technologies for cultural interventions into fundamental musical concepts such as sound, listening, performance, and composition. Analysis of these works of experimentalism may present methodological problems, but this conflict can produce another form of analysis in which contemporary music theory is afforded the opportunity to rethink its own disciplinary practices and methods.

Technology

Throughout this dissertation, "technology" will take on various meanings.[3] In one sense, musical instruments are musical technologies, and in this sense, *Silver Streetcar for the Orchestra*, the triangle is a simple yet powerful one. The performer's systematic exploration of this unlikely solo instrument and its sonic affordances suggest to the audience that the resultant sounds might be deemed worthy of the kind of attention paid to most musical performances. What the instrument has to offer, however, comes up considerably short of what many listeners might expect from a musical performance. To enjoy the piece, one must adopt a way of listening to music in which the sheer sound of the triangle can sustain attention and appreciation. *Silver Streetcar for the Orchestra* as a musical work thus becomes a technology for the analysis of listening practices, of the sound of the triangle, and of what constitutes a "real piece" of music. Lucier's work is relatively simple in design, but complex in its conceptual implications. In musical experimentalism more broadly, the technologies involved were often considerably more complicated.

Technologies of another kind mediate nearly all twenty-first-century musical experience. In densely populated urban areas of the United States, loudspeakers and personal listening devices of all shapes and sizes are everywhere. Where loudspeakers might spread their sound across a diffuse and often indifferent public, personal listening devices are generally used to play curated sounds directly

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[3] For a discussion of some of these meanings—technology, technique, and "technicization"—see Jonathan De Souza, *Music at Hand: Instruments, Bodies, and Cognition* (New York: Oxford University Press, 2017), 2.

into individual pairs of attentive ear drums. Whether it passes through giant outdoor PA systems or tiny wireless headphones, the vast majority of the musical sounds transmitted by these technologies were made in a recording studio where they were mastered by an audio professional. Before they emit from whatever type of speaker, these recordings are most often digitally processed by massively complex compression algorithms.[4] The relatively low cost of highly capable hardware and software enables more people to produce and distribute their own music; the eminent portability of personal electronic devices and the ever-increasing reach of cellular networks mean that music is always close at hand. The sonic ubiquity produced by technology has had profound effects on and within cultures of music listening and music making. Sound recording, cinema, radio, television, commercial record labels, and, more recently, online platforms such as Napster, iTunes, Spotify, and SoundCloud have all reshaped how people listen to music, how many people listen to the *same* music, and what kinds of music are produced and performed in the first place.[5] But these modern technologies that mediate so much of present-day musical experience are not the first to do so.

For centuries, various technology has influenced the ways that people listen to, think about, and create musical sound. Historical examples abound in the tradition of Western art music, which is constituted at least as much by its instruments, its rituals, its performance spaces, and its systems of written notation as it is constituted by its sounds. Long before the machines and electronics of the

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4 Jonathan Sterne, *MP3: The Meaning of a Format* (Durham: Duke University Press, 2012).

5 Anahid Kassabian, *Ubiquitous Listening: Affect, Attention, and Distributed Subjectivity* (Berkeley: University of California Press, 2013); Mark Katz, *Capturing Sound: How Technology Has Changed Music* (Berkeley: University of California Press, 2010); and, for a slightly older account of the effects of recording technologies and industries on music, see Michael Chanan, *Repeated Takes: A Short History of Recording and its Effects on Music* (New York: Verso, 1995).

twentieth and twenty-first centuries, what we now call classical music maintained reciprocal relationships with its various technologies, techniques, tools, or *techne*.[6] The technologies of Western art music shaped and reshaped how people listened, determined how many people could listen to and share the same music, and in general provided the material basis for the production of musical sound. (Consider, for example, the importance of the pianoforte to musical theory and practice.) And yet, from the perspective of a music historian, the imprint of technology in past eras can look, feel, and *sound* altogether different than the imprint of technology on music today.

One could locate this difference in a changed perspective on sound brought about by urbanization, industrialization, and the omnipresence of new and noisy machines. Italian Futurist painter and composer Luigi Russolo described with joy the many sounds and noises to be heard on a walk through the twentieth-century city:

> The gurgling of water, air, and gas inside metallic pipes, the rumblings and rattlings of engines breathing with obvious animal spirits, the rising and falling of pistons, the stridency of mechanical saws, the loud jumping of trolleys on their rails, the snapping of whips, the whipping of flags . . . department stores' sliding doors, the hubbub of the crowds, the different roars of railroad stations, iron foundries, textile mills, printing houses, power plants, and subways.[7]

Though they were meant for non-musical purposes, these technologies nonetheless made their way into the modern soundscape. And it was from this ever-evolving, technologically inflected modern

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[6] De Souza, *Music at Hand*, 23.

[7] Luigi Russolo, translated by Robert Filliou, *The Art of Noise (Futurist Manifesto, 1913)* (New York: Something Else Press, 1967), 7.

soundscape that Russolo drew his musical material. Most composers, however, did not derive their musical sounds from industrial ones. The sounds of new machines were readily audible in cities across Europe in the 1910s, but the futurist adoption of technological sound as musical sound necessitated a paradigmatic conceptual shift as much as it did a material one. Indeed, it was precisely this sort of conceptual shift that Russolo called for in *The Art of Noises*. While Russolo's insistence on the musical viability of technological and mechanical sound was and remains on the idiosyncratic side of modernist rhetoric, he was far from alone in developing an imaginative if quirky vision for the theory and practice of modern musical composition.

Around the turn of the twentieth century, a number of composers spun disparate strands of what is now called musical modernism. From Stravinsky's octatonicism to Schoenberg's twelve-tone method, the technical and material expressions of modernism varied, and some proved more polarizing than others. But despite their differences, the disparate strands of musical modernism invariably drove toward changes in how people listened to, thought about, and created music. Some composers destabilized tonal pitch centers while others destabilized rhythmic and metric regularity; some derived their melodic material from folk traditions while others sought to generate their music using formulas or chance operations. Musical modernism was not a unified movement; rather, its many strands were based upon many different ways of thinking about and creating music, with the result that each was liable to sound quite different than the next.[8] But while there is no one common

[8] See, for example, the many distinct strands of experimentalism which Ben Piekut traces in *Experimentalism Otherwise* (Berkeley: University of California Press, 2011).

material or conceptual component to all of modern music, its constitutive works exhibit clear and inextricable links between material and conceptual qualities.

As modernist composers sought to find their own ways of composing music—not just variants or deformations of established styles, but radically new technical approaches to compositional process—many of them sought out external sources of inspiration to help guide their compositional innovation. For some, this inspiration came from non-Western musical traditions and instruments; for others, their new directions in music were derived from innovations in other fields of artistic creativity. For these composers—and for many others—the centuries-long reciprocal relationship between music and technologies new and old proved a bountiful source. Industrial self-powered machines and their sounds breathed new life into this relationship as they found their way into the ears of these composers with modernist inclinations. It should come as no surprise that modern technologies functioned as their historical precedents had for hundreds of years: as conceptual and material catalysts for new ideas about musical sound and organization. The difference, however, between musical technologies of centuries past and the technologies of the twentieth century was that *sound and noise* were now in bounds—both conceptually and materially—for modernist composers seeking to break with their respective tradition(s).

It is a point worth repeating: the imprint of technology on modern experimental music does not lack for historical precedent. Experimentalism is not as easily untangled from its Western art music lineages as some of its more polemical participants might like. As will become clear throughout this dissertation, the roles of composer, performer, and audience; the sonic affordances of traditional musical instruments; and forms of musical organization inherited from classical predecessors all proved essential to experimental music's paradigmatic material and conceptual shifts. I will argue,

though, that in effecting these paradigmatic shifts, composers of experimental music began to use their musical works *as* technologies to specific ends.[9]

In writing manifestos, statements, essays, or other proclamations about their music-compositional techniques, composers of modernist music most often attempted to explain how the music came to be written and, perhaps more importantly, to specify how it should be listened to. While the music they wrote was not necessarily didactic in and of itself, there is an element of instruction—if not out and out education—that accompanies much experimental music. As new sounds and new ways of organizing them arose through musical experimentation, the communities of the musical avant-garde formed new definitions for all kinds of things related to music: sound, noise, form, silence, instruments, process, and even music itself. In composing their music in accordance with a number of these new definitions, composers used their musical works as technologies to define and redefine musical concepts.

It is not a new idea to cast music as a technology. In 1999, Tia DeNora theorized music as a "technology of the self";[10] more recently, Eric Drott (2018) showed how music can function as a technology of surveillance by way of its distribution through cloud-based streaming services.[11] After all, music affords myriad uses, and as a technology it is capable of producing any number of social

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9 For robust discussions of human–technology interaction and the ways it can inform creativity see Georgina Born, "On Musical Mediation: Ontology, Technology, and Creativity," *Twentieth-Century Music* 2, no. 1 (March 2005): 7–36; and Jennifer Iverson, "Invisible Collaborations: The Dawn and Evolution of *elektronische Musik*," *Music Theory Spectrum* 39, no. 2 (Fall 2017): 200–222.

10 Tia DeNora, "Music as a Technology of the Self," *Poetics* 27, no. 2 (1999): 31–56.

11 Eric Drott, "Music as a Technology of Surveillance," *Journal of the Society for American Music* 12, no. 3 (2018): 233–67.

and cultural effects. Conceiving of music as its own form of technology nonetheless raises a number of questions: If music is a technology, then who is using this technology? What's the nature of the interface? Does conceptualizing music as a technology prompt a rethinking of this interface? I attempt to answer these questions—at least in part—by joining the notion of music as a technology with philosopher and art historian Peter Osborne's theory of conceptual art. For Osborne, conceptual art is "art about the cultural act of definition, paradigmatically—but by no means exclusively—about the definition of art."[12] For a painting to be about its subjects and for an opera to be about its characters is a straightforward enough notion, but how exactly can an artwork be about the definition of art? For Osborne, this act of definition necessarily involves negation. Works of conceptual art—and here I would include conceptual music—tend to negate in whole or in part the very thing that they would seek to redefine. In the course of this dissertation, then, I will argue that John Cage attempted to redefine musical sound via the negation of musical sound; that Steve Reich attempted to redefine the musical performer via the negation of the performer; that Julius Eastman attempted to redefine the relationships between race, sexuality, and the composition of musical minimalism by negating the meanings of hate speech; and that Maryanne Amacher attempted to redefine the temporal and spatial bounds of music by negating those bounds altogether. Accordingly, the music of these composers did more than simply give listeners something to listen to; much of their work was *about* definition and redefinition—about a breaking and recasting. As I will argue

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[12] Peter Osborne, *Conceptual Art* (London: Phaidon, 2002), 14.

further in the coming chapters, each of these composers used their musical works as technologies of cultural definition.

Culture

Anthropologist Clifford Geertz defined culture as "a system of inherited conceptions expressed in symbolic forms by means of which men communicate, perpetuate, and develop their knowledge about and attitudes toward life."[13] In *Silver Streetcar for the Orchestra*, it is precisely these sorts of inherited conceptions of music that come into contact with the work's simple formal design, and that allow it to function as a powerful analytical technology in the shape of a musical composition. Lucier's piece, written in 1988, is a relatively recent contribution to American experimental music. In the middle of the twentieth century in the United States, composers of experimental music sought alternatives to a received European intellectualism whose cultural authority had waned since the end of the Second World War. Inherited from this European intellectualism were a number of musical conventions, along with conceptions of what constituted proper musical sound and organization. In upending many of these conceptions and conventions in their musical works—in part through the

[13] Clifford Geertz, *The Interpretation of Cultures: Selected Essays by Clifford Geertz* (New York: Basic Books, 1973), 89.

conceptual and material catalyst provided by technology—American composers made cultural interventions into the norms and practices of classical music.

These interventions were particularly evident in the communities of practice that surrounded experimentalism in New York City in the 1950s and 60s. As Morton Feldman recalls, "for a few weeks, nobody knew what art was—that's what made it so special."[14] And within this culture of experimentation and redefinition, there was a prevalent mindset that, really, art could look like *anything*, music could sound like *anything*, and the works of these composers and artists could mean and do just about *anything*. Within this environment of absolute open-endedness, conceptual art—in Osborne's words, "art about the definition of art"—thrived as never before. Composers and artists knew this, and—themselves inspired by their technologies—they began to use their works as technologies of cultural definition.

Anahid Kassabian notes that everyday enculturated listening habits have the power to forge "distributed subjectivities."[15] While such distributed subjectivity is not lived identically by each individual constituent subject, the collective formation of norms and practices on the part of a community gives shape to recognizable and reiterated patterns of thought and expression. In twenty-first-century America, encounters with music playing in coffee shops, retail stores, on television and radio, and so on constitute what Kassabian calls "ubiquitous listening"—a constant, repetitive reinforcement of identity through musical listening practices. In this framework, it is clear how works

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[14] Morton Feldman, "Give My Regards to Eighth Street," in *Give My Regards to Eighth Street: Selected Writings of Morton Feldman*, edited by B.H. Friedman (Cambridge: Exact Change, 2000), 101.

[15] Kassabian, *Ubiquitous Listening*, xxv–xxvi.

of music can teach their listeners how to listen to them, how to *think* or how to *feel* about the music. This normalization is all the more powerful in public—whether that public is a collection of retail shoppers or a gathering of experimental music aficionados. With each performance, recording, review, and conversation around works of experimental music—with every *association* between musical sound and subject—experimental music furthers its effects as a technology of cultural definition, giving shape to a distributed subjectivity carried by listeners, performers, composers, and so on. As I argue in the first chapter on formalism and conceptualism, composers' analytical work via their music is thus facilitated and actualized in its social performance. Indeed, the repetitive and reiterative sort of listening, performing, and composing culture around experimental music helps to entrench the reconceptualized musical concepts at the heart of this music.

Analysis

By this point, I have conducted one form of musical analysis on Alvin Lucier's *Silver Streetcar for the Orchestra*. Although the specific sounds of the piece have not come to bear on my interpretation of the work in nearly the same way as musical notation comes to bear on interpretation in traditional music analysis, the linkage of sound and form to the cultural contexts of American experimentalism nonetheless allows for an interpretation of the piece's conceptual import. My further claim, that this musical work and others like it can function as analytical technologies in and of themselves, requires a bit more exploration of what analysis can mean and what it can accomplish.

Depending on the context, "analysis" can refer to a number of different things. In a laboratory, analysis might be the electrolytic process that separates and reveals the elements of a chemical compound; in a psychiatrist's office, analysis might be conducted through therapeutic conversation meant to help process thoughts and feelings. In humanities research, analysis may refer to the meticulous technical description and thoughtful interpretation of some complex object. The objects of scholarly analysis are most often products of someone else's creativity: a literary text, a work of painting or sculpture, a photograph, a film, a piece of music, and so on. While these modes of analysis may differ with respect to their medium and their methodology, they nonetheless share the common goal of breaking things down.

The sort of breaking down that happens in the course of analysis is not an entirely destructive process—at least, it's not usually intended this way. Rather, analysis is done in order to construct a new way of knowing, feeling, or understanding. It is true that, in the chemical laboratory, the breakdown of a compound into its constituent elements might cause a permanent and irreversible change in physical state. The material disintegration that results from such analytical procedures, however, provides information about the material world that could not otherwise be ascertained. Likewise, in talking therapy, one is meant to release tightly wound stresses and anxieties in ways that one would not or could not do elsewhere. In breaking down and succumbing to overwhelming thoughts and feelings, one does not resolve the cause of grief or stress itself; rather, the aim of psychoanalytic talking therapy is to uncover hidden causes of unwanted effects, to gain perspective, to learn to think differently, to feel better so that one can recompose oneself and return to daily life. Both of these forms of analysis result in new knowledge or insight—changes that result from breaking things down and making new sense of them—and analysis in the humanities is no different.

Formal, critical, and discourse analysis all make way for reconceptualizing the objects that are broken down.

Indeed, the metaphorical "breaking down" of analysis is supported by the etymology of "analysis." From the Greek *analusis*—or, to break it down into its pair of roots, *ana* and *luien*—"analysis" might well be re-translated as a "loosening up." With the above two paragraphs in mind, I would argue that most usages of "analysis" could be drawn back to this sense of *loosening things up*. Whether the object of analysis—the object of this loosening up—is material or conceptual, whether it is a thing or an idea, this loosening up produces a new sense of the thing or the idea. And no matter the form of analysis, there is some method, some tool, some technology needed to carry it out. The chemist has a laboratory full of equipment at her disposal, the therapist is carefully trained to take care of his patients and himself, and the music analyst has a field of methodologies, musical notation, and sound imaging technologies with which she can represent the sounds of music. Disparate though they may be, these are relatively straight-ahead examples of analysis. Conceiving of analysis more broadly, however, can open things up to methods, concepts, and objects of analysis that might not otherwise come to light.

In this dissertation, I will argue that composers of conceptual music used their works to produce new senses of inherited musical concepts. In other words, they used their musical compositions as analytical technologies in experimentation with the fundamental tenets of musical

culture, its norms and practices.[16] In performance, this music breaks down musical objects, concepts, definitions, forms, and, from the disciplinary perspective of this dissertation project, this music can break down received methods of music analysis. Through this analysis by experimental music, it becomes possible for these loosened up bits to come back into a new form, a new shape, with a new definition—to break and recast with new meaning.

It bears mention that composers of conceptual music were hardly the first to use music analytically. Take, for example Beethoven's Op. 120 "Diabelli Variations" which, over the course of thirty-three variations, provided not only a forensic analysis of Diabelli's modest theme but situated this theme relative to other compositions (including Wolfgang Amadeus Mozart's *Don Giovanni*). The classical convention of the variation set demonstrated by Beethoven's composition was, within a quite different context, taken up by John Cage with his own *Variations* series (1958–67). But whereas Beethoven's work analyzed a musical object, Cage's analyzed musical concepts: sound, noise, space, performance, form, and so on are all teased apart, broken down, and (occasionally) reassembled. Both sets of variations are analytical, but in different registers.

Analysis does not fix things; in fact, it does something quite the opposite. The aim of academic analysis is to learn something new about an object or subject. With this in mind, analyzing challenging works from an experimental musical tradition is not to be abandoned as futile but rather embraced as an opportunity for learning (about) another kind of analysis altogether—a purposeful

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[16] This is a sort of inversion of Kofi Agawu's argument that music analysis can construed as performance and composition, in "How We Got Out of Analysis, and How to Get Back in Again," *Music Analysis* 23, no. 2/3 (July–October, 2004): 267–286.

breaking and recasting of music analysis itself as a disciplinary practice. In short, analysis *of* works of conceptual music can lead to analysis *by* works of conceptual music.

Chapter Outlines

In each of the following chapters, I analyze works of experimental music from an interdisciplinary analytical standpoint that can shed light on the music at hand and, in turn, on the disciplinary practice of music analysis. From the refreshed perspectives these interdisciplinary analytical methods afford, I argue for a recasting of certain established musical genres, styles, or modes of composition as branches of a musical conceptualism that concerns the negation and redefinition of various facets of musical sound and organization.

To begin my first chapter, I examine the relative importance of forms and formal analysis to the discipline of music theory as compared to other disciplines in the humanities, especially art history. I then draw upon a number of social and intellectual connections that obtained between artists and composers during the twentieth century to outline a conceptualism that spanned art and music, using Peter Osborne's theory of conceptual art to provide a perspective on how experimental music partakes in a larger conceptualism across creative media. Osborne's perspective joins Caroline Levine's to inform a music-analytical vignette around John Cage's 1962 piece for solo performer, *0′00″*.

In my second chapter, I chart a course through Cage's compositional output in some historical and biographical depth. More specifically, I trace his development of compositional process

and refinement of musical works with regard to indeterminacy and chance, drawing upon the analytical perspective and the expanded notion of form taken up in my first chapter. I draw upon Levine's expanded notion of form to argue that, although Cage did not compose the sounds of the radically indeterminate *4′33″* (1952) and *0′00″*, he nonetheless accessed and manipulated the material and temporal forms that surround music, drawing them into his work and, through them, composing a listening subjectivity that would comprehend sound, noise, silence, and music as one and the same. I adopt Anahid Kassabian's notion of distributed subjectivity in order to illuminate the ways in which the listening, performing, and composing cultures of American experimental music took up Cage's musical ideas and helped to proliferate the listening subjectivity he composed for his audiences.[17]

My third chapter centers on the ways in which sound recording technologies—and the degrees and kinds of repetition they afforded—acted as conceptual and material catalysts for the very different-sounding genres of *musique concrète* and musical minimalism. I revisit the painting and sculpture of 1960s American minimalism as a body of work in which consistent aesthetic qualities analogous to those of musical minimalism gave rise to a robust conceptualism and the "dematerialization" of the art object. This body of work and its critical literature helps to establish the terms in which repetition can be seen as a viable technical means by which both minimalism and *musique concrète* become technologies for cultural intervention into fundamental musical concepts. The role of repetition in these genres of experimental music—and the importance of Pierre Schaeffer

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[17] Kassabian, *Ubiquitous Listening*.

to work that spans music theory and sound studies[18]—provide further theoretical links between *musique concrète*, minimalism, and the cultural interventions of musical conceptualism.

In my fourth chapter, I offer an overview of an American musical minimalism that is defined as much by its characteristic aesthetic qualities—familiar harmonies, pulsing rhythms, and high degrees of repetition[19]—as it is defined by its constitutive composers' use of various technologies to experiment upon sound and the medium of music. While not all minimalist composers shared the same musical ideals, many rhetorically framed their use of technologies—and technologically derived compositional techniques—as a primary means by which they could achieve an objectivity with regard to their experimentation with musical sound. I consider the fraught relationship between the aspirational objectivity of Steve Reich's minimalism, the many forms of voice he attempted to erase, and the perceived forms of agency behind these forms of voice. In particular, *It's Gonna Rain* (1965) and *Come Out* (1966) serve as examples of an electronic experimental music in which voice and technology interact under Reich's stated objective ideals and depart from traditional musical hermeneutics. I offer extensions to Seth Monahan's meta-analytical model of agent-classes in music-theoretical discourse in order to consider the relationship between the non-expressive objectivity of Reich's musical minimalism and the many forms of voice and agency that underwrite traditional musical interpretation and analysis.[20] Finally, I move beyond Reich's tape works of the 1960s to

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[18] This is most evident in Brian Kane's work on acousmatic sound and listening, especially in *Sound Unseen* (New York: Oxford University Press, 2014).

[19] Robert Fink, *Repeating Ourselves: American Minimal Music as Cultural Practice* (Berkeley: University of California Press, 2005).

[20] Seth Monahan, "Action and Agency Revisited," *Journal of Music Theory* 57, no. 2 (Fall 2013): 321–71.

Julius Eastman's musical compositions and their controversial titles, which challenged the objective bent of American minimalism. Eastman's critical encounter with minimalism's predominant aurality at his 1980 concert at Northwestern University allows his music to act as a technology for rethinking the analysis of musical minimalism, and of music-theoretical representations of voice and agency.

Chapter 1: Forming a Conceptual Music

Throughout this chapter and throughout this dissertation, I mention many works of music that may seem to defy formal analysis. This might be for any number of reasons: their sounds might be too complex or too unruly, the works may be too disorganized or inconsistent, or the music may seem to lack sound altogether. In conducting their cultural interventions into classical music's norms and practices, composers of experimental music breached technical barriers, opened up uncharted sonic territory, and overturned conventions of composition and performance. While the results of their musical experiments sounded quite different, their shared interest in cultural intervention tended to place similar strain on formal analytical method. In this chapter, I argue that experimental music's apparent strain against formalism should not be taken as a fatal disconnect between the two, but rather as a side effect of the fundamental connection between formal composition and conceptual intervention.

To begin, I examine the importance of forms and formal analysis to the discipline of music theory as compared to other disciplines in the humanities, especially art history. With disciplinary discrepancies established, in the second part of this chapter I draw upon a number of social and intellectual connections that obtained between artists and composers during the twentieth century in order to outline a conceptualism that spans the media of art and music. The number and the nature of these connections suggests that interdisciplinary analytical methods developed for analysis of conceptual art may prove viable for the analysis of conceptual music, a repertory largely neglected by

the discipline of music analysis, which has leaned heavily on notational methodologies. Chief among the cross-disciplinary perspectives I discuss is Peter Osborne's theory of conceptual art, in which the negation of fundamental forms and concepts effects their redefinition.[1] Finally, I apply these lessons learned from conceptualism in the visual arts—together with Caroline Levine's expanded notion of form—to consider a music-analytical vignette around on John Cage's *0′00″* (1962), a work composed of indeterminate sounds that nevertheless derives its analytical function from conventional musical forms. The context for Cagean indeterminacy is taken up more fully in the following chapter; for the moment, what is most important for my argument is that such works of conceptual music necessitate a thorough reconsideration of the practice of musical analysis.

Intra- and Extra-Musical Forms

Music analysis is an essentially formalist practice. My usage of "formalist," however, is neither a derogatory reduction nor a brash generalization. Music analysis is, after all, almost never entirely about the myopic identification and quantification of the purely musical structures to which the epithet of "formalism" has conventionally referred. Any thoughtful analytical treatment of music will inevitably involve the things that exist beyond the notes, not least because those things contribute in important ways to music's meaning. History and biography, social, political, and cultural contexts

[1] Peter Osborne, *Conceptual Art* (London: Phaidon, 2002).

and inter-texts, conditions of performance, the music's immediate physical environment, and listeners' prior knowledge and experiences always inform interpretation and hermeneutics, criticism and reception, and—most importantly for this chapter—these things always shape analytical discourse to some degree. Perhaps most succinctly, Eric Clarke's ecological approach to the perception of musical meaning, in which the conscious and sub-conscious kinds of attention paid to extra-musical things always factor into experience of intra-musical things, articulates this relationship.[2] Music's surroundings and contexts are always processed, even if in the background, and their various affordances invariably affect the ways that people perceive sound as music.[3] It is this implication of the extra-musical in the "intra-musical"—and *vice versa*—that leads music scholars to be variously tempted by, anxious about, or allergic to the phrase "the music itself."[4] But even with

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2 Eric Clarke, *Ways of Listening: An Ecological Approach to Musical Meaning* (New York: Oxford University Press, 2005).

3 Clarke draws upon the notion of affordances laid out most clearly by James Gibson in *The Ecological Approach to Visual Perception* (Ann Arbor: University of Michigan Press, 1979).

4 Gabriel Solis, "Thoughts on an Interdiscipline: Music Theory, Analysis, and Social Theory in Ethnomusicology," *Ethnomusicology* 56, no. 3 (Fall 2012): 533 and 544–47, which focus in particular on the issue of musical sound as an object of study and analysis; Jocelyn Neal, "Popular Music Analysis in American Music Theory," *Zeitschrift der Gesellschaft für Musiktheorie* 2, no. 2–3 (2005), https://www.gmth.de/zeitschrift/artikel/524.aspx, is an account of the rise of analysis of (American) popular music within American music theory; and, most recently, a panel on the Society for Music Theory's 2017 conference, entitled "What Does Music Theory Want?"—chaired by Naomi Waltham-Smith and with Seth Brodsky serving as respondent—centered on issues of subjectivity, (psycho)analysis, methodology, hermeneutics, and the like. Steven Rings followed later in the conference with his own plenary talk, wherein he called for music theorists to embrace the intellectual advantages of their niche corner of academia, wherein enchantment with musical objects can produce its own insights. The talk is now published as Steven Rings, "Music's Stubborn Enchantments (And Music Theory's)," *Music Theory Online* 24, no. 1 (March 2018), http://mtosmt.org/issues/mto.18.24.1/mto.18.24.1.rings.html.

the extra-musical in full view, music theory and analysis seemingly cannot but adhere to Eduard Hanslick's maxim that the "artist is inscrutable, the artwork is decidedly not."[5]

There are many works of experimental music that might clash with this formalist maxim and which, by extension, might clash with an essentially formalist music analysis. Without recognizable musical forms to work with, it may seem that formal analysis has no chance of gaining traction with works full of noise, silence, and other novel approaches to musical sound and organization. And indeed, music theory and analysis have historically veered away from musics that do not satisfy its formal expectations. In what follows, I propose that Hanslick's maxim may yet hold up—albeit through a creative interpretation—in spite of any apparent difficulties that may present themselves in the contexts of conceptual music. More specifically, I argue that an efficacious analytical approach to conceptual music might be found through the renewed and expanded notion of form developed by literary theorist Caroline Levine. She suggests that forms should not be confined to particular media, and that forms should not be limited to specifications of shape, size, or scale. She uses her liberated concept of form to explore the translation and transmutation of various forms across the media of literature, television, film, culture, and politics, shedding light on their broader organization and on the interconnections between each. Levine's contention is that this renewed notion of form can engender meaningful connections between the analysis of textual objects, historiography, and cultural

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[5] Eduard Hanslick, *On the Musically Beautiful: A Contribution Towards the Revision of the Aesthetics of Music*, trans. Geoffrey Payzant (Indianapolis: Hackett, 1986), 33; I much prefer this older translation over the newer "The artist is inscrutable, the artwork scrutable," which appears in Eduard Hanslick, *Eduard Hanslick's On the Musically Beautiful: A New Translation*, edited and translated by Lee Rothfarb and Christoph Landerer (New York: Oxford University Press, 2018), 47.

criticism. A music analysis with formalism as its theoretical foundation stands to gain valuable methodological perspective through such an expanded notion of form, especially if and when this discipline seeks to reach beyond the bounds of its familiar repertories. This chapter and this dissertation thus look toward a music analysis that listens not only to music but across scholarly disciplines, and that embraces the many forms which surround and support the noises and the silence of conceptual music.

It could be argued that one of the pretexts for music-analytical work is confidence that a study of the forms of music can expand knowledge about music's social import. Although attention to the extra-musical at various levels complements and completes music analysis, music analysis is concerned, in the first instance, with the intra-musical: with what is going on *in the music*, and what it might mean. Thus my seemingly brazen declaration that music analysis is an essentially formalist practice. For the purposes of this chapter (and for the whole of this dissertation), forms and "formalism" do not denote an analytical practice that is somehow disproportionately or inappropriately concerned with forms of musical sound; rather, the expanded notion of form that I take up throughout advances my proposition that music-analytical practice is always to some degree concerned with musical forms, even if/when the musical work at hand might appear to be formless. For now, however, I want to point out how traditional notions of form have given rise to a distinctive disciplinary proclivity in music theory and analysis that is, from an interdisciplinary perspective, quite strange.

Art historian Seth Kim-Cohen points out that the practice of music analysis has typically betrayed an obsession with medium specificity, noting that the terms "extra-musical," "intra-musical," or even "para-musical" content have had no analog in the lexicons of academic study of

visual arts or cinema.[6] One might trace this separability back to the moment during the nineteenth century when, as Lydia Goehr has observed, the extra-musical became separated from the musical in European music-critical discourse. This separation was articulated via an ascendent formalist aesthetics, most prominently championed by Hanslick.[7] To be sure, the distinction between that which is internal to the music and that which is external is a useful one, especially for the European musical repertories with which the academic discipline of music theory has traditionally occupied itself. But in compulsively quantifying the standardized sounds of the musical score, theory and analysis have privileged the intra-musical objects of notation for so long and to such an extent that the prefix becomes unnecessary. "Captured in and as a numerical sign system," as Kim-Cohen puts it, the notes and rhythms internal to the musical score are not *intra*-musical; they are simply "musical."[8] The array of medium-specific, notated musical objects generated by and through Western musical notation has borne itself out in a robust formalist methodology of music analysis, which is, as a matter of course, ideally set up to re-inscribe the internal musical logics and organizational schemes of the Western classical music from which it was derived. The ramifications of this formalist lineage are myriad, and include a tendency toward obsessive focus on the notated musical objects of Western civilization (or other musical objects which nonetheless resemble them closely enough to be compared). This focus on isolated musical objects has prompted scholars such as Georgina Born to

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6 Seth Kim-Cohen, *In the Blink of an Ear: Toward a Non-Cochlear Sonic Art* (New York: Continuum, 2009), 40; "para-musical" refers to Eric Drott's discussion of markers of musical genre in Eric Drott, "The End(s) of Genre," *Journal of Music Theory* 57, no. 1 (2013): 4.

7 Lydia Goehr, *The Imaginary Museum of Musical Works: An Essay in the Philosophy of Music* (New York: Oxford University Press, 1992), 155.

8 Kim-Cohen, *In the Blink of an Ear*, 96.

call for a more self-consciously *relational* study of music, and to thereby expand the boundaries of musicological inquiry.[9]

Many scholarly disciplines in the humanities and social sciences—if not most of these disciplines—employ largely qualitative, discursive analytical approaches. Meanwhile, for many students (and some teachers) of music theory, "analysis" connotes only the fastidious identifying and labeling of harmonies, phrase types, and repetitive binary and ternary organizational schemes. The field of music theory and its practice of formalist analysis have hummed along quite nicely on this tacit cordoning-off of (intra)musical content. But this version of music analysis falters in the face of musics that cannot be effectively captured in its "numerical sign systems," whose interior and exterior cannot be so easily wrested apart, or which do not employ familiar musical objects such as harmonies and phrase types whatsoever. To the extent that compatibility with Western notational systems has been a prerequisite for the effectiveness of musical analysis, the disciplinary practice of music analysis has not fared especially well in its rare, hesitant ventures outside of its canonical confines. From European and American modernist mutations of classical music to traditions across the globe which do not conform to Western musical conventions, there exists a whole host of musics that may be rendered difficult or impossible to analyze on music theory's traditional terms. The issue of meta-analytical anxiety is, however, nothing new to the discipline of music theory.

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[9] Georgina Born, "For a Relational Musicology: Music and Interdisciplinarity, Beyond the Practice Turn," *Journal of the Royal Musical Association* 135, no. 2 (2010): 223–24.

Robert P. Morgan's "The Concept of Unity and Musical Analysis" and Kevin Korsyn's subsequent defense on behalf of Kofi Agawu, Daniel Chua, Joseph Dubiel, Jonathan Kramer, and himself both take up the intellectual integrity of academic musical analysis, the practice's sustained efficacy, and the deconstruction of idealized definitions of music and its theories.[10] Although this exchange opened up a broader view of musical analysis, it was nonetheless anchored in a musical repertory that supports the kinds of "unitarian" analytical ideals Morgan himself values. Haydn, Mozart, Beethoven, and Brahms (Morgan's chosen examples) lend themselves easily to the sort of music-analytical arguments through which Morgan claims to find a unitary subject, through which Korsyn claims to find a non-self-identical subject–object dialectic, and through which Hanslick claimed to find his ideal of a purely formal, purely musical beauty. That is, the objects of their analyses are made up of highly stylized and standardized musical forms: functional tonal harmonies and chord progressions, regular phrases and melodies, and motivically coherent binary and ternary organizational schemes. The fine discrepancies between these forms and their slight variance from one composer to the next—and often between compositions by the same composer—are brilliantly illuminated by the large toolbox of meticulously tuned methods of formalist musical analysis. This music and its stylistic subtleties can withstand the immense analytical pressure that the field of music theory has placed upon them precisely because the methods by which theorists apply this analytical pressure were designed around this musical repertory in the first place. What's more, the depth and

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[10] Kevin Korsyn, "The Death of Musical Analysis? The Concept of Unity Revisited," *Music Analysis* 23, no. 2/3 (July/October 2004): 337–351; Robert P. Morgan, "The Concept of Unity and Musical Analysis," *Music Analysis* 22, no. 1/2 (2003): 7–50.

nuance of this formal analysis is such that writers such as Morgan and Korsyn have been able to bring the critical reflections of Descartes, Kant, Bakhtin, and Foucault (all from outside of music) into productive dialogue with excerpts from Beethoven's piano sonatas and Brahms's string quartets.

A composer such as John Cage, though, set about creating a musical repertory that challenges received ideas about musical sound and organization. Within this repertory—a body of work central to the notion of conceptual music—random chance and silence appear instead of subjectivity and expression, and sound and noise abound in place of the phrases, chords, and melodies central to Hanslickian musical beauty. Cage's interlocutors are not Kant, Descartes, or Beethoven; rather, he invoked the thinking of Daisetz Suzuki, Marcel Duchamp, and Henry David Thoreau. It is no wonder that much of Cage's music has confounded the established methods and perspectives of music analysis. Indeterminacy, improvisation, chance, sound, noise, and silence render Cage's music difficult or seemingly impossible to analyze because they displace the objects most legible to the disciplinary practice of music analysis. This displacement has long found Cage at the center of cross-disciplinary debates around the relationship of music to sound—and, more recently, around the culturally specific ways of listening which underpin ontologies of music, sound, and analysis.[11] The implications of a music theory (or a sound studies) that does not acknowledge the necessity of auditory culture are intellectually and politically perilous, and the field of music theory would do well

[11] Marie Thompson, "Whiteness and the Ontological Turn in Sound Studies," *Parallax* 23, no. 3 (2017): 273; and, for a response on behalf of "sonic realism" and object-oriented ontologies, see Christoph Cox, "Sonic Realism and Auditory Culture: A Reply to Marie Thompson and Annie Goh," *Parallax* 24, no. 2 (2018): 234–42.

to heed Brian Kane's critique of the so-called "ontological turn" within sound studies.[12] If there is collective anxiety in confronting these issues, it may well stem from a perceived conflict between the essential formalism of music analytical practice and the uncertainty of what music analysis might be like without it. And yet, if persistent attention to the forms of music must come into any kind of conflict with a critical perspective that demarcates Eurological methods and ontologies, my argument is that this conflict could and should be a productive one. Music analysis need not break or steel itself against cultural criticism; rather, its formalism can adapt and expand to encompass a more self-aware, ecological view of its culturally embedded musical objects.

John Cage's compositional output is a body of work well suited to analysis in this expanded formalism. While his indeterminate and aleatoric compositions may seem to defy music-analytical methods, much of Cage's music will in fact yield to an analyst who does not reject the noise, but rather addresses it on its own terms. Two examples are offered in recent music-theoretical scholarship. First, in a 2014 essay David W. Bernstein considered how the amplification and electronics of *Cartridge Music* (1960) prefigured more highly indeterminate, theatrical, and improvisational work that mirrored social, political, and cultural ideals.[13] Second, in a 2009 analysis of *Two*[2] (1989) Rob Haskins identified the potential for a shared musical experience of the work's aleatoric yet discernibly networked pitch relationships and harmonic content within the indefinite

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[12] Brian Kane offers a critique of the "ontological turn" and a warning with regard to its consequences in "Sound Studies Without Auditory Culture: A Critique of the Ontological Turn," *Sound Studies* 1, no. 1 (2015): 2–21.

[13] David W. Bernstein, "John Cage's Cartridge Music (1960): 'A Galaxy Reconfigured,'" *Contemporary Music Review* 33, no. 5–6 (2014): 556–69.

possible paths through the time-bracketed score for the work.[14] In both works, sonic elements remain partially determined: namely, amplification and pitches from the piano. Other of Cage's compositions provide no sonic anchor for musical analysis whatsoever. In music that appears to lack musical sound, the analyst must find a method of analyzing the silence not as empty negation, but as an opportunity for finding other points of contact with the work. It is no coincidence that the most fastidious analysis of Cage's most infamous, silent composition, *4′33″* (1952), comes not from a musicologist, but from art historian Liz Kotz.

In keeping with the title of her book *Words to be Looked At*, Kotz's analysis focuses largely on the multiple text scores for *4′33″*.[15] To be sure, Kotz's work is about music, but because *4′33″* offers only silence in lieu of the musical objects and relationships that Bernstein and Haskins analyze, Kotz must instead look to the text—to the "extra-musical"—for a way into the Cage's composition.

> By prying open the regulatory relation between sign and realization, Cagean indeterminacy repositioned writing as a kind of productive mechanism, thereby giving notation a functional and aesthetic autonomy—an autonomy that opens the door for the scores, instructions, or snippets of language to themselves *be* the work, while individual realizations occur as "instances," "samples," or "examples" of it.[16]

While even *Cartridge Music* and *Two*[2] can provide some sound for music analysis, *4′33″* appears to negate any semblance of musical sound. The work thus draws Kotz away from the silence and toward

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[14] Rob Haskins, "On John Cage's Late Music, Analysis, and the Model of Renga in *Two*[2]," *American Music* 27, no. 3 (Fall 2009): 327–55.

[15] Liz Kotz, *Words to be Looked At: Language in 1960s Art* (Cambridge: MIT Press, 2010), 13–57.

[16] Kotz, *Words to be Looked At*, 48.

an ontological paradigm in which the language and the score *are* the work. Indeed, works such as *4′33″* and *0′00″* (which will be the focus of analysis at the end of this chapter) may defy the kind of formalist analytical engagement with musical sound that the field of music theory is built upon. It is through this very defiance, however, that works of music can perform a kind of analysis that interrogates sound, music, and practices of music analysis. In an expanded Levinian formalism, this sort of reciprocal analysis by musical works has the potential to probe boundaries between the intra- and the extra-musical, and to open up the domains of music and music analysis. This redefinition by reciprocal analysis does not come about through the sheer negation of musical sound, nor through the wholesale rejection of formalist musical analysis. These are not merely words to be looked at; rather, the text score—along with performance of the work—can be taken as instructions for listening. Rather, it is as Kotz, Clarke, and Levine suggest: in the case of works like *4′33″* and *0′00″*, the potential for music analysis rests in the forms that surround the music, sonic or otherwise.

Art & Music

Conceptualism in the visual arts is supported by a robust literature of criticism, theory, history, and analysis. The methods and intellectual approaches of writers on conceptualism are fit to grapple with the sorts of challenges latent in music such as Cage's, and their writing has set invaluable precedents for this dissertation project. In particular, the work of art historian and philosopher Peter Osborne provides perspective on some of the ways in which experimental music can be understood and

analyzed as a form of conceptualism.[17] As a music analyst, I insist on listening to this music's sounds and on analyzing text scores with the qualities and the challenges of musical sound in mind. While the visual and the sonic may present themselves as disparate media, historians of conceptual art can provide useful means of negotiation their differences and pushing productively at their similarities.

Music's ephemerality, its reliance upon performance, and its confounding dependence upon the "work concept" are in some ways inherent to its medium; in other ways, though, there is space for a conceptual music to test its limits and to offer new roads to defining and redefining the bounds of musical composition.[18] Chief among those who have explored this terrain is Kim-Cohen, who ushers his readers "toward a non-cochlear sonic art"—a curious field of work that can accommodate music by Cage, Reich, Schaeffer, and others, alongside Muddy Waters, Francisco López, and Bob Dylan.[19] One of the central aims of this chapter is to raise a rhetorical question in response to Kim-Cohen's project: why not call it "conceptual music" instead of "sonic art?" I raise this question not out of concern for terminological specificity, but because the project of definition is at the heart of conceptualism in both art and music. In the light cast by experimental art and music, what might otherwise amount to a minor terminological discrepancy can, in fact, turn out to be the crux of the argument.

The ulterior motivation for identifying a "conceptual music" rather than a "sonic art" has to do with the potential for a disciplinary rehabilitation of music analysis. As a member of the field, I

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17 Osborne, *Conceptual Art*.
18 Goehr, *Imaginary Museum*.
19 Kim-Cohen, *In the Blink of an Ear*.

maintain that music's obsessions over the intra-musical do not preclude the medium of music from expressing anything like conceptualism; rather, music theory's obsessions are symptomatic of the discipline's preoccupation with canonical musical repertories that are fixated upon their own internal logics. The "qualitative, discursive form of musical analysis" demanded by works such as *0′00″* marks a significant departure from the sort of quantitative analysis built around the intra-musical logics of classical repertories. A conceptual music has the potential to expand the domain of music, and to engage its terms and concepts in a fundamental breaking and recasting.

It is well to note that twentieth-century music and art cultures have often blended into one another, their boundaries fuzzy and porous as composers and artists sought to expand their own media and cross into others.[20] The complex relationships between art and music—and between artists and composers—are evident both in their works and in their words. Among the most well documented figures in modern art and music, Sol LeWitt (1928–2007), Robert Rauschenberg (1925–2008), Marcel Duchamp (1887–1968), Steve Reich (b. 1936), and John Cage (1912–1992) shared friendships, collaborative working relationships, and conduits of intellectual exchange. The inter-associations between these historical actors have proven influential within their own continuing communities of practice, and in the secondary literature of the scholarly fields who study them. Their works are thus cultural interventions on multiple levels: in practice, their technical innovations

[20] Branden Joseph's art-historical work on John Cage constitutes the most extensive case, including but not limited to: Branden W. Joseph, *Beyond the Dream Syndicate: Tony Conrad and the Arts after Cage* (New York: Zone Books, 2008); Branden W. Joseph, *Random Order: Robert Rauschenberg and the Neo-Avant-Garde* (Cambridge: The MIT Press, 2003).

generated new objects to see, new sounds to hear, and new ways of being artists and composers; in theory, their formal innovations engendered new ways of thinking about—and analyzing—art and music.

In the following section, I draw some discursive connections between these figures as a means of tracing one intellectual lineage of conceptualism among countless others. This lineage is, of necessity, only a part of the story—indeed, to leave out important figures Andy Warhol, Jackson Pollock, Henry Flynt, or Yoko Ono, and to leave a gap between Duchamp's 1910s and Rauschenberg's 1950s is to tell a disjointed tale. The connections between artists and composers I discuss here should thus be taken as a retelling of one narrow path through their works, rather than anything close to a comprehensive historical narrative.[21] Nonetheless, the intellectual exchanges between these figures will help to clarify how technology enabled a conceptualism that sought to redefine the fundamental concepts of both art and music.

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[21] On the diversity of experimentalism and its network of contradictions and conceptual conundrums, see Benjamin Piekut, *Experimentalism Otherwise* (Berkeley: University of California Press, 2011); and, for a more recent exploration of experimentalism understood as a proliferation of approaches to sound, see Jennie Gottschalk, *Experimental Music Since 1970* (New York: Bloomsbury, 2016).

Conceptualists

Although there are plenty of what we now call "conceptual" artists that preceded and succeeded Sol LeWitt, he is credited with the earliest, most prominent use of the term. In his 1967 essay "Paragraphs on Conceptual Art," he proposed a wresting of the perceptual from the conceptual in both the creation and reception of artworks.[22] For LeWitt, the perceptual elements of a work were the aesthetic: those sensed, those seen. The conceptual elements, on the other hand, were what he called the "mentally interesting." For LeWitt a work of conceptual art was one that foregrounded this conceptual side, while "art that is meant for the sensation of the eye primarily would be called perceptual."[23] As a means of emphasizing the conceptual in a work of art, LeWitt suggested the negation of an artist's own taste. Indeed, LeWitt saw the avoidance of an artist's subjectivity as essential to producing properly conceptual art. It was his view that the more direct contact he had with his work, the more his own tastes might skew the aesthetic of the work and thus turn it toward the perceptual. And so he sought a technical means of developing artworks that would separate the creative act from the ultimate shaping of the work's materials.

To produce his series of more than 1,200 wall drawings (1968–2008), LeWitt devised deliberately limited sets of instructions for assistants to follow. Execution of these instructions would

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[22] Sol LeWitt, "Paragraphs on Conceptual Art," in *Artforum* 5, vol. 10 (Summer 1967): 79–84.
[23] LeWitt, "Paragraphs," 81.

result in the final artworks, drawn directly onto walls in exhibition spaces and often destroyed later. For example, the full text for his *Wall Drawing #85* (1971):

> A wall is divided into four horizontal parts. In the top row are four equal divisions, each with lines in a different direction. In the second row, six double combinations; in the third row, four triple combinations; in the bottom row, all four combinations superimposed.

Of course, LeWitt had a good sense of what his *Wall Drawing #85* would look like once completed, but many of the drawings' finer details were determined by others. His ambiguous instructions and his use of assistants' labor thus served as degrees of separation between the artist and the drawing—between the idea that constituted the conceptual artwork and its singular material product. It should also be noted that the material form of any given *Wall Drawing* at any given point in time is, indeed, singular. The instructions act a bit like a musical score: once public, a performance or realization could unofficially take place anywhere, anytime. There are, however, important differences between the two. While musical compositions still under copyright command fees for performance, it is possible that multiple performances of the same work may happen simultaneously. In the case of the *Wall Drawings*, each drawing consists of instructions, but is also associated with a unique certificate of ownership that bestows the legal right to produce and display the drawing.

LeWitt's professed abdication of direct control over the final material form of his art echoed just a year later in New York minimalist composer Steve Reich's 1968 essay "Music as a Gradual Process," which he published in a catalogue for the 1969 exhibit *Anti-Illusion: Procedures/Materials* at

the Whitney Museum of American Art in New York.[24] LeWitt and Reich became friends in the 1960s, and their exchange of ideas and mutual appreciation for each other's work shows in Reich's essay, in which he touched on concerns remarkably similar to those voiced in LeWitt's essay, and in remarkably similar terms. In particular, the following two statements stand out as a pair:

> When an artist uses a conceptual form of art, it means that all of the planning and decisions are made beforehand and the execution is a perfunctory affair. The idea becomes a machine that makes the art. (LeWitt, 1967)[25]
>
> Though I may have the pleasure of discovering musical processes and composing the musical material to run through them, once the process is set up and loaded it runs by itself. (Reich, 1968)[26]

While Reich diverged from LeWitt in some important ways, the shared mechanical metaphor is glaring. Their "machine that runs by itself" is set up as the opposite to a more traditionally expressive creativity. Not only this, but LeWitt and Reich both saw their devices as unburdening them from producing their art and music directly. Reich went on to explain how process-based musical composition allows listeners' attention to shift from the personal to the impersonal:

> While performing and listening to gradual musical processes one can participate in a particular liberating and impersonal kind of ritual. Focusing in on the musical process

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[24] Steve Reich, "Music as a Gradual Process" [1968] in *Writings on Music: 1965–2000* (New York: Oxford University Press, 2004), 34–36; see also Cindy Nemser's account of the exhibition, which she titled "The Art of Frustration": http://www.art-agenda.com/reviews/anti-illusion-proceduresmaterials/, accessed December 10, 2018.

[25] LeWitt, "Paragraphs," 82.

[26] Reich, "Music as a Gradual Process," 34.

> makes possible that shift of attention away from he and she and you and me outwards towards it.[27]

The appearance of LeWitt's art and the sound of Reich's music are often compared as similarly bare, simple, and repetitive, and the two are invariably grouped together under the heading of Minimalism.[28] But if this "perceptual," surface level of their work is similar, it is in their respective, ideologically constructed relationships between the conceptual and the perceptual that the two diverge. As suggested by the above quotes, Reich's process music does not shy away from aesthetics and perception; his overt musical processes are all about listener perception. Despite this emphasis of perception—or perhaps *because* of it—Reich quietly establishes in his 1968 essay a pivotal terminological difference between himself and LeWitt: the word "conceptual" is conspicuously absent from "Music as a Gradual Process."

Reich's priority at the time was that his musical processes be audible and discernible—that he, unlike Cage, was privy to nothing the listener couldn't hear.[29] In his early phase music, which included *Violin Phase* and *Piano Phase* (both 1967), the generative machine was the rhythmic process he created. This machine was fully divulged and demonstrated to his audiences in performance.[30] The

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27 Reich, "Music as a Gradual Process," 36.

28 Jonathan W. Bernard, "The Minimalist Aesthetic in the Plastic Arts and in Music," *Perspectives of New Music* 31, no. 1 (Winter 1993), 86–132.

29 Reich mentions that it was fellow composer James Tenney who first pointed this out to him in Reich, "Music as a Gradual Process," 35.

30 Joseph Auner makes the case that the actual, physical machines that yielded Reich's metaphorical process machines should be present on stage, as part of the visual aesthetic of performances of works such as *Violin Phase* in "Reich on Tape: The Performance of *Violin Phase*," *Twentieth-Century Music* 14, no. 1 (2017): 77–92.

phasing process proved flexible and adaptable, and he went on to compose works for traditional musical instruments. For LeWitt, on the other hand, the *idea* was the machine: a set of instructions capable of producing many artworks, though yielding just one at a time. Because the instructions for the *Wall Drawings* are readily available as parts of their titles, LeWitt's machines were made visible to his viewers just as Reich's were made audible to his audiences. But, unlike Reich, LeWitt embraced the indeterminacy of allowing others to carry out the realization of each drawing as a means of staying away from the "perceptual." In "Music as a Gradual Process," Reich firmly rejects indeterminacy and improvisation, stating that they and his musical processes are mutually exclusive. Thus Reich, in one fell swoop, distanced himself from Cage *and* LeWitt, emphasized his focus on audibility and perceptibility, and, by omission, diverged from LeWitt's project of "conceptual art." It is telling that, despite the clear creative kinship between the two, Reich also does not credit LeWitt in his essay. In fact, aside from a brief mention of James Tenney, Reich's sole counterpart in "Music as a Gradual Process" is fellow New York-based composer and champion of indeterminacy, John Cage. There are plenty of explanations as to why Reich was (and remains) selective about whom he claims as his influences. Regardless of personal or competitive motivation, Cage appeared as a composer to whom Reich wished to establish himself as both an equal and an opposite.

If Reich's 1968 essay echoed LeWitt's of the previous year, it also recalled in both topic and title Cage's essay from ten years prior.[31] In 1958, Cage wrote "Composition as Process" as a companion to his own formidable solo piano work *Music of Changes* (1951), in response to an

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[31] John Cage, "Composition as Process," *Silence* (Middletown: Wesleyan University Press, 1961), 18–56.

invitation from Wolfgang Steinecke to lecture and perform at the Darmstadt International Summer Courses for New Music. Cage took the opportunity to outline his indeterminate and chance-based compositional methods, but also to specify their desired effects on the sounding music—the most important being that Cage's own preferences would be removed from his work, thereby avoiding expression and allowing outside forces to shape his music. Regarding the relationship of process to final material form, Cage wrote:

> Structure is no longer a part of the composition means. The view taken is . . . of an activity characterized by process and essentially purposeless.[32]

Pieces like *Music of Changes* were composed using a system of chance operations that determined pitch and rhythmic values at random. The pre-compositional material for such works is a set of questions and constraints that were often answered by the flip of a coin or the roll of a die. The compositional process proper began with a fixed number of questions that could yield a vast number of possible outcomes. Once all of these questions had been answered, however, only one fixed score existed for *Music of Changes*, just as with any traditionally composed piece of music. In determining completely the range of possible outcomes, Cage had general power over the sounding music. But, like LeWitt would 17 years later, in *Music of Changes* Cage relinquished control over musical specifics, thus eliminating to some extent his tastes and subjectivity along with his ability to shape finer details of the musical surface.

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[32] Cage, "Composition as Process," 22.

LeWitt's *Wall Drawings* and Cage's *Music of Changes* are similar in that each entailed a process that results in a fixed material form. Along with his stated disavowal of structure via chance, however, Cage also attempted to remove himself from his music by incorporating *indeterminacy* in his compositional process. Works such as *4′33″* and *0′00″* involve performances that yield an indefinite number of unique sonic realizations. Chance operations do not determine the sonic content for these pieces; rather, the realization of each is left up to its performer and/or to the coincidental noise in the performance space. With regard to self-removal through compositional process, Cage saw the implementation of indeterminacy as having a similar effect to his use of chance operations. Placing varying amounts of responsibility for the sounds of his music in the hands of performers, rather than in random chance alone, Cage was able to relinquish an amount of control over his music and therefore to distance himself from its material form. Although my analysis of this music comes later, it is important to note here that the further surrender of control on the part of the composer has implications for the music analyst. It is possible to analyze the sonic form of an individual performance of *0′00″*: spectrographs, for example, can serve as valuable representations of captured audio. Because the sounds of these radically indeterminate works are bound to change, however, the sounds of any one performance of the work cannot account for the work's indefinite sonic possibilities. It is in this sense that a piece like *0′00″* appears to be *formless*. If analysis of the work's sounds does not constitute an analysis of the work, then it certainly seems that the music theorist's tools will find no use. Still, further comparison between conceptual art and music will help to establish ways of analyzing such challenging works.

Although the constraints on the producers of the *Wall Drawings* are considerably narrower than the constraints on the performer of *0′00″*, the difference between these works of art and music

can be construed as a difference in the degree of indeterminacy involved in their realization. That said, there are also important differences between the two with regard to the intended effects of indeterminacy in the reception of these works. LeWitt, for his part, sought to deemphasize the perceptual in order to emphasize the conceptual or the idea. Cage, by contrast, maintained that his attempted self-erasure was meant to allow listeners to appreciate the qualities of the sounds themselves. Whereas LeWitt's focus was on the conceptual affordances of process, Cage insisted that his compositional emphasis was on the perceptual affordances of sound. Their stated intentions were also reflected in ancillary elements of their works: Cage's instructions to his performers exist in the form of a score that was not available to his audiences during a concert performance; LeWitt's instructions make up the title for each drawing. In the *Wall Drawings* and in *0′00″*, LeWitt's generative idea and process are foregrounded; Cage's is concealed.

This point of distinction between LeWitt and Cage is also a site of Reich's explicit divergence from Cage. In "Music as a Gradual Process," Reich described the same impersonality and self-removal that LeWitt and Cage pursued, but claimed that it could emerge in his own music from the "psychoacoustic byproducts" of an entirely audible musical process.[33] For Reich, the processes involved in serialist and aleatoric music were unnecessarily complex and were virtually inaudible in the sounding music. Indeed, the formlessness of Cage's radical indeterminacy that appears as a roadblock to formal musical analysis presented challenges to his listeners as well. The audience at David Tudor's premiere performance of *4′33″* famously talked, laughed, and walked out before the

[33] Reich, "Music as a Gradual Process," 35.

four minutes and thirty-three seconds were up, an unpleasant surprise that bothered Cage. He explained in an interview with John Kobler years later:

> They missed the point. There's no such thing as silence. What they thought was silence, because they didn't know how to listen, was full of accidental sounds.[34]

Whereas Reich sought to write music that needed no additional instruction, audiences for Cage's "silent" and noisy music would need help if they were to understand and to hear things as he wanted them to hear—if they were to "know how to listen." In the following chapter, I will consider the motivations behind Cage's project of educating his listeners, and the means by which he attempted interventions into the listening culture of modern music. For now, it is enough to note the similarities and the differences between Reich's and Cage's thought, and to recognize the important role that writing played in advancing their cultural interventions.

"Composition as Process" was only one of the many essays, stories, and experimental text pieces that Cage published over the course of his career. Some were directly didactic, while others were full of jokes, anecdotes, and reflections on his idiosyncratic brand of Zen Buddhism. The first published collection of his writings, which included "Composition as Process," was aptly titled *Silence*.[35] Cage intended for his book to be thumbed through like a newspaper. It was a collection of essays to be read in any order, either in whole or in part. His penchant for quoting friends and

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[34] Richard Kostelanetz, ed., *Conversing with Cage* (New York: Routledge, 2003), 70.
[35] John Cage, *Silence* (Middletown: Wesleyan University Press, 1961).

favorite literary influences comes to the fore throughout. Those cited include figures as disparate as Daisetz Suzuki, Henry David Thoreau, Erik Satie, and Buckminster Fuller, but of those mentioned over the course of *Silence*, among the most important to Cage's involvement in the visual arts was the American artist Robert Rauschenberg.

Although Cage did not meet Rauschenberg in person until 1951, the two had by then already encountered each other's work. Beginning in the late 1940s, both attended Black Mountain College, a school of experimental art in Asheville, North Carolina. There, Cage would have seen Rauschenberg's early monochrome works, and was certainly aware of his *White Paintings* (1951). Indeed, Cage claimed that it was Rauschenberg's example that pushed him to finally compose a silent piece of music:

> His white paintings that I referred to earlier: When I saw those, I said, "Oh yes, I must; otherwise I'm lagging, otherwise music is lagging."[36]

As a peer to Cage in the world of the visual arts, Rauschenberg provided inspiration and motivation. That said, the composer was also driven by an artist of a previous generation: Cage's hero-turned-chess partner, Marcel Duchamp.

It is with good reason that Peter Osborne says, "Duchamp haunts conceptual art with the specter of redundancy: the idea that he might have done it all before."[37] Although the term

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[36] Kostelanetz, *Conversing with Cage*, 67.
[37] Osborne, *Conceptual Art,* 27.

"conceptual" only came to be attached to practices like Duchamp's in the late 1960s, the way Duchamp spoke about materiality and interpretation echoes clearly in the language of LeWitt's essay. In an interview with Katharine Kuh in 1960, Duchamp laid out a very brief history of recent art and its conceptual underpinnings, in part as an explanation for his series of Readymades (1913–1921). From his vantage point, the visual arts had gone through a transition since the middle of the nineteenth century, when the painter was liberated from having to produce works for a certain purpose to being able to make art with some autonomy.

> Earlier, paint was always a means to an end, whether the end was religious political, social, decorative, or romantic. Now it's become an end in itself.[38]

Duchamp saw nineteenth-century impressionism as the beginnings of a turn toward the "retinal" or, in LeWitt's terms, the "perceptual." Although this nineteenth-century moment in painting coincides with the separation of the intra-musical from the extra-musical in Hanslickian formalism, the movements of painting and musical composition seemed, for the most part, to head in rather different directions. Beyond impressionism, other stylistic trends and movements moved further in the direction of perceptual emphasis: for Duchamp, the abstract expressionism of the 1940s existed at the apex of "retinal" art. As he saw it, the emphasis of paint and brushstroke went more or less unopposed until the surrealists and Dadaists of the early twentieth century, whose work he nevertheless quickly dismissed as insufficient. To satisfy the lack that Duchamp perceived in

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[38] Katharine Kuh, *The Artist's Voice: Talks with Seventeen Artists* (Evanston: Harper & Row, 1962), 7.

contemporary painting, one would need to somehow isolate this retinal component and minimize it in order to produce a new, properly "non-retinal" art. Duchamp's own solution to this problem was his series of "Readymades," ordinary, mass-produced found objects to which he gave titles and that he placed alongside works of art in galleries and exhibition spaces. These things were meant to be physically unremarkable and utterly replaceable, so as to minimize their retinal/perceptual appeal, the values that traditional art possesses. In selecting and displaying his found sculptures, Duchamp's art objects took on an entirely different function than their previous, decidedly more pragmatic utility: the Readymades became technologies for the re-definition of the art object.

The Readymades are a series of objects selected and named by Duchamp from 1913 to 1923.[39] Often cited as the first examples of conceptual art, they include a comb, a shovel, a bottle rack, and, most infamously, a urinal.[40] For Duchamp, the point was not to choose objects that could carry a clear purpose or meaning, but to select his next Readymade without taste or judgment. He explained to Katharine Kuh the conflict of tricking himself into choosing objects neutrally:

> My intention was always *to get away from myself* [emphasis added], though I knew perfectly well that I was using myself. Call it a little game between "I" and "me."[41]

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[39] The exact dates and the inclusion of some works with the "Readymades" aren't always agreed upon. Some objects were either assembled by Duchamp or altered significantly, such that they no longer appear as they did when they were found.

[40] These are, respectively: *Comb* (1916), *In Advance of the Broken Arm* (1915), *Bottle Rack* (1914), and *Fountain* (1917).

[41] Kuh, *The Artist's Voice*, 92.

For Duchamp, an important rule in this game was to consciously limit the number of Readymades he would select per year in an attempt to prevent traces of his own preferences showing up in the series as a whole. With this deliberately detached process in mind, it is easy to imagine that just about anything might have ended up as one of Duchamp's Readymades, that the shovel and comb may just as easily have been a rake and a toothbrush. Indeed, the point of the Readymades was that "an ordinary object [may be] elevated to the dignity of a work of art by the mere choice of an artist."[42] Even the few objects Duchamp did settle on may themselves be replaced: *In Advance of the Broken Arm* (1915) (the object for which was a snow shovel) is now on its fourth version: another shovel was chosen in August 1964 and is now housed in the permanent collection of New York's Museum of Modern Art. The eminent substitutability (and replaceability) of the Readymades makes clear that the perceptual qualities of each ordinary thing are essential to neither the work nor the series. It is only through a non-retinal, conceptual emphasis that the Readymades become meaningful.

Duchamp's playful attempts to get away from himself echo in Cage's implementation of indeterminacy and chance, in LeWitt's machinic ideas, and in Reich's musical processes. Indeed, the cultural interventions effected by Duchamp continue to reverberate in the work of artists and composers decades and even a century later. Of the many differences between them—with respect technique, aesthetic, and musical philosophy—there is also a clear and pervasive commonality: the attempted negation of their own personality from their creative work. To be sure, that these artists

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[42] André Breton and Paul Éluard, ed., *Dictionnaire abrègè du surréalisme* (Paris: Galerie des Beaux-Arts, 1938), 23.

and composers idealized impersonality does not itself provide a constitutive definition of conceptualism across art and music. For Peter Osborne, however, negation is the primary mechanism by which conceptualism effects its cultural interventions.

Conceptual Art, Conceptual Music, and Negation

Art historian and philosopher Peter Osborne writes that conceptual art is "art about the cultural act of definition—paradigmatically, but by no means exclusively, the definition of 'art.'"[43] For him, conceptual art's questions are pointed: among this form of art's foremost exigencies is the definition of art itself. His meta-definition puts a point on the confusion of conceptualism, but it also exerts pressure on the matter of interpretation. For a painting to be about its subjects and for an opera to be about its characters is a straightforward enough notion, but how exactly can an artwork be about the definition of art? For Osborne, this act of definition necessarily involves negation.

Osborne traces in the history of conceptual art six distinct "lineages of negation," each originating in a particular truism about art that some works of conceptual art have nonetheless called into question. I reproduce these six lineages here in full, as they will come to bear on various aspects of this dissertation:

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[43] Peter Osborne, *Conceptual Art*, 14.

1. *The negation of material objectivity* as the site of the identity of the artwork by the temporality of "intermedia" acts and events. This led to a type of conceptual art linked to the history of performance in music and dance.

2. *The negation of medium* by a generic conception of "objecthood," made up of ideal systems of relations. This led to a form of conceptual art closely related to the history of minimalism.

3. *The negation of the intrinsic significance of visual form* by a semiotic or, more narrowly, linguistically based conceptual content. This produced a type of conceptual art connected to academic philosophy and the history of the Readymade.

4. *The negation of established modes of autonomy of the artwork* by various forms of cultural activism and social critique. This generated a range of forms of conceptual art associated with the legacy of the historical avant-gardes of the 1920s in the politics of the 1960s, and with Constructivism and Productivism in particular.

   a) works that use as their primary means intervention into, and the refunctioning of, existing cultural forms of publicity ("media") in order to transfigure, and thereby help to transform, the structures of everyday life;

   b) works that are explicitly focused on political-ideological conflicts and promote awareness of particular alternative or subaltern ideological positions;

   c) works that direct their attention to the relations of power at play within art institutions themselves.[44]

Together, these strains illuminate the broad and diverse field of conceptual art, but they also serve as an important step toward disciplining a mode of artistic production that often intentionally defies order and understanding. The negation of "material objectivity" in the transitory performances of

[44] All of the above is excerpted from Osborne, *Conceptual Art*, 18–19. For more on the legacy of earlier avant-gardes in 1960s politics, Osborne directs his reader to John E. Bold, ed., *Russian Art and the Avant-Garde: Theory and Criticism* (London: Thames & Hudson 2002), parts III–IV.

music and dance allows works of conceptual art to elude the assumed and expected objective permanence of the plastic arts. The temporality and ephemerality of these performances—precisely because they do not conform to the traditional material objectivity of visual art—make such pieces legible as works of conceptualism that invite reconsideration of what a work of art is, and what it could be. For Osborne, then, the strategy that conceptual art generally employs is to negate what it is that the work of art seeks to redefine, and to offer in its place a newly defined instance of that which had been negated. In proposing this model of redefinition-by-negation along with these lineages, Osborne harnesses conceptualism's conundrums and provides inroads into theorizing what a work of conceptual art can accomplish, not just what it negates. This theoretical maneuver is crucial to establishing an analytical approach that does not throw its hands up at noise and silence—and that does not simply re-state the intentions of artists and composers such as LeWitt, Reich, Cage, Rauschenberg, and Duchamp. Osborne's work instead provides a framework for an analytical approach that historicizes works of conceptual music and makes them available for interdisciplinary critical analysis by discursive and qualitative methods.

In both their breadth and their specific stylistic affiliations, Osborne's lineages also provide fairly stable links between movements in the visual arts and the world of musical composition. Minimalism, for example, is a branch of conceptual visual art associated with the negation of medium. Minimalism in music, on the other hand, is a genre that is often reduced to simplistic technical description. As Jonathan Bernard notes in his comparative study of minimalist aesthetics in art and music, music critics generally either praise the music of Reich, Glass, Riley, and Young for

"its newness and 'accessibility' or have derided it for its supposed shallowness."[45] Bernard's was a step in the direction of applying the field of art theory and criticism to the field of music theory and analysis, a direction which I pick up in Chapter 3 of this dissertation. Genre is, however, only one way to think across conceptual art and conceptual music.

In order to delimit and define a conceptual art that engages sound, Seth Kim-Cohen borrows from the words of Marcel Duchamp to provide a pair of definitions: "A non-retinal visual art is liberated to ask questions that the eye alone cannot answer"; "a non-cochlear sonic art appeals to the exigencies out of earshot."[46] The clear delineation is that conceptual art and its questions and exigencies are the domain of the mind in ways that other art is not. Of course, all art depends upon the mind, but Kim-Cohen means that there is a something-else to conceptual art of any medium, that it "emphasize[s] its concepts, *expressly* at the expense of other aesthetic aspects."[47] To be sure, this something-else is never entirely independent of the materials that make up the work. But Kim-Cohen rhetorically locates the viewing and listening experience for ordinary art in unthinking sensory organs in order to emphasize conceptualism's engagement of conscious attention, intersubjectivity, and intertextuality. This is, for the very most part, in keeping with LeWitt's conceptual-perceptual dichotomy: the mentally interesting vs. art whose substance lies in visual perception. The key difference between LeWitt and Kim-Cohen, however, is that Kim-Cohen does not adhere to the hard and fast distinction between the conceptual/non-cochlear and the perceptual/cochlear.

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45 Bernard, "The Minimalist Aesthetic," 87.
46 Kim-Cohen, *In the Blink of an Ear*, xxi.
47 Kim-Cohen, *In the Blink of an Ear*, 52.

Work on percepts and concepts since LeWitt's essay has problematized the simple opposition of the two. Most recently, Andy Clark has shown that the perceptual cannot be characterized as entirely pre-fact while the conceptual is post-fact, largely because the perceptual is already shaped considerably by conceptual knowledge.[48] That is, the supposedly unthinking, pure input that the perceptual represents for LeWitt does not exist for the predictive mind that anticipates and calculates. While it was an effective and strategically convenient rhetorical move for LeWitt, such a clean dichotomy is now outdated. These cognitive entanglements aside, the difference between LeWitt's proclamations and the critical perspective represented by Kim-Cohen can also be understood in terms of negative and positive. LeWitt's creative method seems a negative one which deemphasizes the perceptual in order to shift focus to the conceptual idea and eliminates "caprice, taste, and other whimsies" so the artist may "explore his idea thoroughly."[49] It is in this negative light that the term minimalism seems particularly apt. Kim-Cohen, on the other hand, operates from a critical position that focuses on both the particulars of the works at hand—their negative strategies included—and upon the larger cultural picture, in which these artists and works made interventions into the contemporary discourses of avant-garde art and music. This contemporary critical position answers the polemical negativity of artists and composers seeking to distinguish themselves from their traditions and makes legible the sorts of effects that these works of conceptual art and music create.

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[48] Andy Clark, *Surfing Uncertainty: Prediction, Action, and the Embodied Mind* (New York: Oxford University Press, 2016).

[49] LeWitt, "Paragraphs."

For Kim-Cohen, one particular effect—or perhaps a failed effect—of conceptualism upon the medium of music is the distinction between the "extra-musical" and the "intra-musical" that I discussed earlier in this chapter. Citing the prevailing perspective of music studies, in which the "extra-musical" is an operative concept, he points out that "music has always functioned according to Greenbergian precepts."[50] Art critic Clement Greenberg was notoriously disinterested in matters outside of or apparently separate from the artwork, and Kim-Cohen sees music's obsessions with medium-specificity as falling into line with this thinking. After all, the closed systems of musical notation all but demand that matter outside of what the score calls for should be considered "extra-musical." Defined thus, music is permanently insulated, unable to reach outside its bounds, unable to define itself. Delimitation and definition are, however, the crux of Osbornian conceptualism. If music finds itself fenced in by its "Greenbergian precepts" and medium-specificity, then there might just be a viable escape route to be found in conceptualism's mechanism of redefinition via negation.

The first item in Osborne's list of lineages is explicitly associated with a history of performance in music and dance: a negation of material objectivity via temporality. And, indeed, the inherent ephemerality of music's passing in time poses a problem to an ontology of individual musical works—or of artworks that exist temporally as music and dance do. Lydia Goehr's historicist approach conjures an "imaginary museum" of the Western art music canon, wherein musical works exist at once apart from their texts—their notated scores—and, at the same time, seem to exist apart from their fleeting sonic realization. Hers is an account of the challenges that temporal media pose to

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[50] Kim-Cohen, *In the Blink of an Ear*, 39.

the canonical constructs of visual art's tradition of fixed objects.[51] Without material fixity, musical objects fail to withstand the pressure of permanence placed upon them by structures of thought derived from visual art's order of physical objects. As a result, music's canon appears to stand on shaky ontological ground. Its museum—its hall of great works—does not need to be somehow reimagined such that it might be able to accommodate the real and tangible objects of music. Put another way, this idealized fusion of text and sound imagined in the "work concept" remains a figment of classical music's imagination.

It was in the negation of material objectivity that artists and composers active during the 1960s and 70s—along with movements such as Fluxus—engaged in various creative ventures that are often gathered under the rubric of "performance art," and that can appear to pull the medium of visual art toward the medium of music and *vice versa*. Indeed, a number of Fluxus artists made explicit motions toward this sort of fusion of media—and, in so doing, they also made forays into fusing work and concept, sound and text. While some works diverged entirely from the classical tradition, many shared the recognizable historical topics of classical concert music: instruments, scores, and iconic ensembles like the orchestra are central to more than a few works in the Fluxus Performance Workbook.[52] For example, George Brecht's *Concerto for Orchestra, Fluxversion 3* (1962):

> The orchestra is divided into two teams, winds and strings, sitting in opposing rows. Wind instruments must be prepared so as to be able to shoot out peas. This can be accomplished by inserting a long, narrow tube into wind instruments. String

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[51] Goehr, *Imaginary Museum*.

[52] Ken Friedman, Owen Smith, and Lauren Sawchyn, ed., *The Fluxus Performance Workbook*, accessed May 24, 2016, http://www.deluxxe.com/beat/fluxusworkbook.pdf.

> instruments are strung with rubber bands which are used to shoot paper missiles. Performers must hit a performer on the opposite team with a missile. A performer hit three times must leave the stage. Missiles are exchanged until all performers on one side are gone. Conductor acts as referee.[53]

Concertos are normally written by composers, but Brecht was no composer, was he? If he was not, then what exactly is his *Concerto for Orchestra, Fluxversion 3*? To begin to answer this question is to re-inscribe Osborne's central point, that conceptual art is often about the definition of art itself. Indeed, in order to categorize Brecht's orchestral pea and missile fight as either art or music, one must first clearly define both media. There is plenty to suggest, at least at first, that Brecht's piece is music—to begin with, he has titled it *Concerto for Orchestra*. (In an imagined performance, one assumes that this orchestra would be arranged and seated on stage as they would be for a performance of any standard work from the Western canon, and that this would not be the only piece on their concert program.) Nevertheless, there aren't any pitches or rhythms, no melody nor harmony. Indeed, the emphasis in Brecht's concerto doesn't seem to be so much on the *sounds* of the performance, but rather on the sheer spectacle of an orchestra—a group of people normally so carefully coordinated—engaged in a wild, childish battle.

Brecht's concerto brings music's own struggle with material—if not materiality—to the fore. It is one result of music's standardization and reproducibility via notation that traditionally "musical" sound may be defined by excluding ordinary sound and noise. Brecht's *Concerto* features an ensemble

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[53] *The Fluxus Performance Workbook*, 26

that might appear to be fully prepared for a performance of common practice period symphonic literature, but that in fact stages a performance in which discrete pitches or rhythms are conspicuously lacking. Its negation of these standard musical sounds allows the concerto to be *about* the differentiation of sound, noise, and music. While Brecht's work exists primarily in text—rarely if ever performed—and Cage's works are performed frequently, each centers on the negation and cultural definition of musical sound. This negation draws upon resources offered by both text and sound, a bifurcation between musical materials that appears sharper in these experimental works. Both text and sound thus complement one another even as they diverge, a relationship more apparent in the work of Cage and Brecht, but which shapes the composition, performance, and the formal analysis of classical music as well. Indeed, it is an expanded notion of formalism, one that recognizes musical works as ecologically situated, and that allows for a musical analysis of works such as the *Concerto for Orchestra*, *4′33″*, or *0′00″*.

Toward a New Formal Analysis

Forms and "formalist" analysis have seen something of a rehabilitation in literary theorist Caroline Levine's recent work, in which she renders myriad multi- and inter-media objects and concepts comparable and analyzable through a much-expanded notion of form. Her re-imagining of such apparently simple concepts as whole, rhythm, hierarchy, and network provides a critical landscape in which she is able to subject hugely disparate things to similar analytical scrutiny, placing them in dialogue with one another and forging conceptual relationships rife with meaning. Even from this

broadened viewpoint, however, indeterminate things like Cage's musical compositions may nevertheless appear formless:

> There are many events and experiences that do not count as forms—and we could certainly pay close attention to these: fissures and interstices, vagueness and indeterminacy, boundary-crossing and dissolution.[54]

In his musical compositions and writings, Cage re-conceptualized "silence" as an inevitable presence and sonic abundance rather than an utter absence or lack of sound—that is, as a rich sonic landscape rather than an empty fissure. Nevertheless, this new, noisy silence's unpredictability and irregularity, its unrepeatability and its restless aleatory mean that its contents simply do not sit still long enough to take form. Coupled with sound's inherent ephemerality, indeterminate musical compositions resist the kind of analysis that both music theory and Levine's theory of forms employ. And yet, the advantage of Levine's expanded notion of forms is that they are translatable across different media: musical forms need not exist solely in musical sound. There are forms to be found in *4′33″* and *0′00″*, but they are legible only within a Clarke-inspired, ecological view of these indeterminate compositions as musical works.

Cage made sure that there would be plenty of familiarly musical things in the background, contexts, and surroundings of performances of *4′33″* or *0′00″*: a stage, an audience, instruments, or, as in Kotz's analysis, text scores. By composing these musical works and persistently programming

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[54] Caroline Levine, *Forms: Whole, Rhythm, Hierarchy, Network* (Princeton: Princeton University Press, 2015), 9.

them on concerts, Cage secured his music's place alongside other, more conventional music in the various traditions and practices of musical production and performance. Without these trappings of classical music, Cagean sound, noise, and silence might never have been considered "music" at all—he might have been called an artist, his work "performance art." His dogged insistence on maintaining his role as "composer," creating "scores," and performing musical "compositions" might seem like a matter of superficial labels, semantic triviality. Nonetheless, no matter what his work sounded like, these names and titles allowed him and his music access to the systems and constructs that surround, support, and define musical practice.

Without such musical markers as the piano, virtuoso pianist David Tudor, and the Maverick Concert Hall in upstate New York, the sounds that attended the 1952 premiere performance of *4′33″* might have gone entirely unnoticed. Much to Cage's chagrin, it seems these sounds did, in fact, go unnoticed by most present. As noted earlier, Cage believed that his audience simple "didn't know how to listen."[55] For the generous analyst, *4′33″* serves as a case study in how a silent piece of music can suggest that musical sound may be found in the ever-present silence that surrounds them. Staged before an uninitiated audience, however, *4′33″* also serves as a case study in how a silent piece of music can fail altogether, suggesting nothing but an apparent end to the concert. Throughout the rest of his life and career, Cage would try to avoid such failures, and to teach his listeners and readers "how to listen." Many of his interviews, essays, and text works are dedicated to communicating clearly his musical philosophy and his understanding of sound and silence. But he also continued to

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[55] Kostelanetz, *Conversing with Cage*, 70.

refine his compositional process—not necessarily by re-claiming some degree of control over the sounds of his music, but by more carefully considering and crafting the role of the forms that surround his musical compositions and their performances.

What Cage learned from the premiere of *4′33″* would affect how he went about composing other works of radically indeterminate music such as *0′00″*. There are many differences between the two related works—some stark, others subtle. Where *4′33″* offers silence, *0′00″* offers heavily amplified sound; where *0′00″* offers its performer moderate freedom in the making of sounds, *4′33″* requires the performer to make no sound whatsoever. The premiere performance of *4′33″* at the Maverick Concert Hall has been well documented, described, and analyzed elsewhere; *0′00″*, on the other hand, has not been nearly so celebrated. To conclude this chapter, and to make clear the compositional refinement from one work to the next, I offer an analytical vignette of a concert performance of *0′00″*.[56]

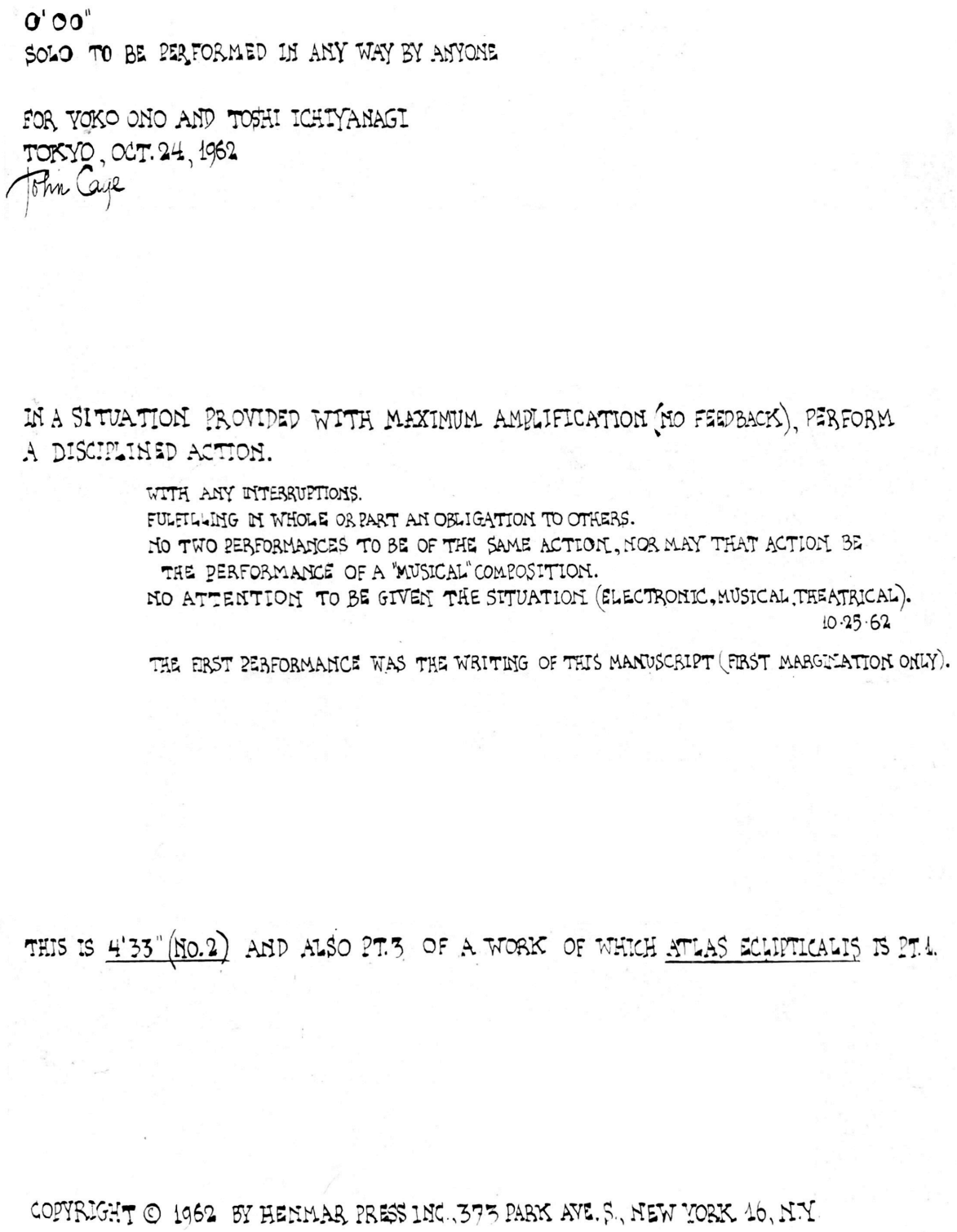
0′00″

For the third piece on a concert program, a table stands in the middle of the stage. On this table are a bartender's standard cocktail-mixing tools: shakers, spoons, strainers, bottles, highball glasses, and a

[56] "Rob Haskins and Friends: A Concert to Celebrate the Centenary of John Cage (1912–2012)," Friday, August 31, 2012 (Johnson Theatre, University of New Hampshire).

bucket of ice. A single performer wearing a half apron enters to applause. He stands in front of the table for a moment of preparation, then picks up his utensils and begins to make a drink. The hall fills with sound. Contact microphones attached to the tabletop pick up each swirl and stir, and the hall's sound system dutifully sends every detail to the audience. The crack of an ice cube in room-temperature rum, the plop of a dash of bitters, and the fizzing of club soda poured from bottle to glass all project outward from the stage in high fidelity.

The many-thousands-of-dollars sound system in the hall is normally reserved for the amplification of even more expensive musical instruments. The stage usually supports accomplished musicians, actors, and dancers. The audience that fills the seats expects great performances of great composers, playwrights, and choreographers. But this sacred space and its attendant resources, including staff, equipment, and facilities, are all in service to the sonic byproducts of bartending—at least for this performance of John Cage's *0′00″* (the text score for which is reproduced in Figure 1). These sounds are treated as fine art, literally and figuratively allowed to occupy center stage.


0'00"
SOLO TO BE PERFORMED IN ANY WAY BY ANYONE

FOR YOKO ONO AND TOSHI ICHIYANAGI
TOKYO, OCT. 24, 1962
John Cage

IN A SITUATION PROVIDED WITH MAXIMUM AMPLIFICATION (NO FEEDBACK), PERFORM A DISCIPLINED ACTION.

WITH ANY INTERRUPTIONS.
FULFILLING IN WHOLE OR PART AN OBLIGATION TO OTHERS.
NO TWO PERFORMANCES TO BE OF THE SAME ACTION, NOR MAY THAT ACTION BE THE PERFORMANCE OF A "MUSICAL" COMPOSITION.
NO ATTENTION TO BE GIVEN THE SITUATION (ELECTRONIC, MUSICAL, THEATRICAL).
10·25·62

THE FIRST PERFORMANCE WAS THE WRITING OF THIS MANUSCRIPT (FIRST MARGINATION ONLY).

THIS IS 4'33" (NO.2) AND ALSO PT.3 OF A WORK OF WHICH ATLAS ECLIPTICALIS IS PT.4.

Fig. 1: Text Score for John Cage's *0'00": Solo to be Performed in Any Way by Anyone* (New York: Henmar Press, 1962).

The performer mixes a variety of cocktails over the course of about thirty minutes and is finished. He accepts his applause, bows, and walks off stage. The stage lights fade, the hall lights go up, and the stage crew hurries out to exchange the tools, table, and fresh cocktails for a new batch of instruments. From beginning to end, *0′00″* is like any other musical performance. Everyone and everything involved are in their right places, playing their customary roles; it's just that there are no "musical" instruments, no "musical" tones or rhythms. It is as though the bartender and his drinks have been cut out of ordinary, mundane life and pasted into the concert hall.

A scene like this one ought to raise a number of questions, especially for readers, listeners, or concert-goers who haven't heard or seen a performance like this before. One question—which echoes xylojet's response to Lucier's *Silver Streetcar*—might be: is *0′00″* really "music" at all? Without singing or playing, without beat or melody, these sounds of bartending may seem only to be mere sounds. In fact, the mixing of cocktails is only one of countless possible realizations of the radically indeterminate *0′00″* allowed by its text score.

In past performances by Cage and others, the sounds for the piece have come from an amplified typewriter, contact microphones attached to the composer's throat as he sipped coffee, or from the cleaning of violin strings.[57] Upon further reflection and study of the score, further questions may follow: If this is indeed "music," then what kind of music is it? Why would someone write this music? What does it mean? Does this music really *mean* anything at all? These questions are, not at

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[57] William Fetterman, *John Cage's Theatre Pieces: Notations and Performances* (Amsterdam: Harwood Academic Publishers, 1996), 88; YouTube performance by EquineViolinist, uploaded May 30, 2012, and accessed Sept. 27, 2016: https://www.youtube.com/watch?v=PdTsrABY3AE.

all coincidentally, some of the foundational questions that drive the discipline of music theory—a discipline that employs close reading and rigorous technical analysis of works of music to develop answers to these questions. Whether one decides that it's "music" or plain old sound, the charge for the music analyst remains the same: to analyze *0′00″* as a musical work. And so, an academic music theorist might have even more doubts to add to the questions I've posed above. One may reasonably doubt whether this indeterminate, noisy music is really *analyzable* at all, what such analysis might look like or mean, and whether it would constitute *music* analysis.

In addition to all of the above problems, questions, and puzzles that this music poses, its extreme indeterminacy may pose the biggest challenge of all. While an individual performance of *0′00″* consists of definite sounds, the musical composition that is *0′00″* does not specify the sounds that will constitute its performance. In fact, that the sounds of *0′00″* should change from one performance to the next is written into the fifth line of the work's text score. Thus, to parse the (non)musical sounds that constitute any one performance of *0′00″* would not be an especially helpful exercise. To analyze the composition that is *0′00″*, one needs to do more than, say, examine via spectrogram the sounds of a bartender mixing drinks. To reiterate: these sounds were but one performance of *0′00″*—and, per mandate of the score, all other performances will sound quite different. What all performances of *0′00″* are likely to have in common, though, are many of the extra-musical forms of musical production and performance.

Many of these forms can be roughly determined from the instructions laid out in the written score for performance of the work. The possibility of "any interruptions" and the instruction that "no attention be given the situation" by the performer are both attempts on Cage's part to prompt an unceremonious execution of whatever disciplined action the performer has chosen. Nevertheless,

0′00″ is billed as a piece of "music" and, as such, its performers, concert programmers, and concert-goers will be ready to pay a certain kind of attention to whatever is about to happen. They are at a concert, after all, and so they will be ready to listen to music.

For a concert such as the one I've described, the performer has procured a score, chosen the disciplined action with care, practiced this action, and checked sound levels in the hall prior to the concert. The audience is, of course, expected to follow concert etiquette. There will be other works of music on the program, there will almost certainly be musical instruments around, there will be applause, and there will be a stage of some sort. The required amplification sets some practical, technological limits on when and where the piece can be performed—it needs to be somewhere with electricity for amplification, it should probably be sometime within local noise ordinances. This is to say that in every dimension—excluding its sounds—*0′00″* fits the description of a piece of "music." Its background, context, and surroundings should all be familiar to concert-going audiences, but the music has been switched out and replaced. To put it another way: the forms that make up and surround this concert experience are all familiar, though their sonic contents are not.

The forms that surround music are integral to Clarke's ecological perspective, from which he seeks to incorporate any and all factors in a listener's perception of music into scholarly consideration and analysis. Of course, listeners react not only to sounds, but also to information in their environments. Perception, as Clarke defines it, is "the awareness of, and continuous adaptation to, the environment"; for him, perceiving is a matter of "trying to understand, and adapt to, what is

going on."[58] Perception of music involves basic orientation as to the source of sounds, as in Clarke's introductory vignette, in which the contents of an audio CD are discovered. But listeners might also glean more nuanced meanings from what surrounds them, what surrounds the music, and what the music might jog in their memory. Clarke goes on to analyze Jimi Hendrix's 1969 performance of "The Star-Spangled Banner" on electric guitar. He uses an example of an American listener who heard the bugle-style arpeggiation of "Taps" in Hendrix's use of open-string harmonics on the guitar, while Clarke, who is British, did not. This tune, played at military funerals, provides different contextual meaning and brings new affective potential to Hendrix's performance.[59]

Surely an audience of *0′00″* is like any other from this perspective: its listeners perceive the piece's surroundings as well as its sounds, and so they will "[try] to understand, and adapt to, what is going on." Clarke's interventions are useful in discussions of more conventional music, where analytical myopia makes it easy to forget that the musical work—with its privileged ontological status and claims of autonomy—is always surrounded and supported by other things. If music theory's usual musical repertory benefits from Clarke's ecological perspective, analysis of Cage's indeterminacy, noise, and silence cannot do without it. But while Hendrix's guitar rendition of the national anthem of the United States is obviously "musical," an audience for *0′00″* must try to understand, and adapt to, what is going on in a different way—they must perceive this kind of "music" differently.

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[58] Clarke, *Ways of Listening*, 6–7.
[59] Clarke, *Ways of Listening*, 57–58.

The incorporation of chance into his compositional process and an increasing reliance on performer choice and improvisation at times left Cage with little to "compose." Instead of carefully crafting the sounds of his own music, Cage took to accessing, manipulating, and redefining what a "composer" was, what a "score" might consist of, and what constituted a "musical" composition. Among the perceived forms in a Clarke-inspired, music-analytical ecology are those of a familiar concert experience—the composer, the hall, the stage, the lights, the program, the audience, and the amplification through a sound system. These familiar forms become familiar through regular, repeated experience: with each new concert comes a new music-perceptual event, wherein the function of these extra-musical forms in musical meaning-making is reiterated and re-inscribed. For many people, concert attendance is a frequent pastime. Orchestras and opera companies, university performance programs, and touring ensembles all have concert seasons with more-or-less weekly offerings. Over time, one becomes accustomed to concert etiquette and develops an ever-more-refined sense of what to expect—of what and how to perceive in Clarke's expanded, ecological sense.

The repetition of concert calendars, schedules, and regular attendance constitute what Levine calls a "rhythmic" form. Her meaning is not restricted to the local, entrainable rhythms of musical notes; rather, she means a sense of rhythm on a much larger scale. Levine forwards the notion that repetition over any lengths of time can help to structure experience, whether daily work schedules, weekly appointments, yearly seasons and anniversaries, or centennial celebrations.[60] These diverse, overlapping rhythms can be precise or approximate, and they can be frequent or infrequent. For the

[60] Levine, *Forms*, 49–50.

purposes of my analysis of *0′00″*, the concert setting I've described is one constitutive event of a larger rhythmic form that has instilled in audiences a number of habitual cultural practices and expectations. Familiarity with the ritual of applause, fading of lights, bowing, and audience silence during performance speaks to the breadth, depth, and sheer number of these rhythmic forms. And, as Cage was well aware, familiarity grants these forms great power and influence in the realm of musical perception, experience and meaning.

These forms were in play at the premiere performance of *4′33″*, and Cage meant for them to help make the point that there is no such things as silence—only music. As we now know, instead of finding music in silence, the uninitiated audience missed the point (or missed *Cage's* point): these forms seemed to direct them not to the coincidental sounds in the performance space, but to nowhere at all. To those in the audience who missed the point, nothing was happening, and so they talked and walked out. Here, then, is the most important difference between *4′33″* and *0′00″*: if *4′33″* makes the point that any sound could be music, *0′00″* provides an example of such sounds. Where the performer of *4′33″* seems to do nothing at all, the performer of *0′00″* does something. And, crucially, that something is *amplified.* A bartender entering the stage should capture an audience's attention in a way that Tudor's inactivity did not, but just in case his audience should miss the point again, Cage decided to pipe the sounds of *0′00″* through loudspeakers. Silence may easily go unnoticed; "maximum amplification" is impossible to ignore.

To place a bartender in a concert hall is to put an unexceptional activity in the center of an exceptional frame. To move the sounds of mixing drinks from regular life and the outer world into the confined performance space, onto the stage, and under the lights and gaze of the audience is to suggest that these sounds *are* music, that they *do* belong here. The pre-existing physical and temporal

forms that describe and surround a typical musical performance all work for and with Cage's piece: the concert hall, the ticket booth, the rows of seats, the stage, the printed score, the crew, and even the other musical works on the program are all props that the sounds of *0′00″* need in order to pose as music. Perhaps most importantly, the audience's pre-existing ideas of what music is or can be establish the conditions in which the sounds of bartending can be a negation of what they were expecting. Their expectations have been ingrained by large-scale, repetitive, rhythmic forms of regular concert attendance and ritualized listening practices that likely began as they were first learning and constructing their own concepts of art and music. The audience that does not recognize any pitches or rhythms but does hear sound—that asks itself "are these sounds music?" or "what kind of music is this?"—begins to question, to define and redefine not just the sounds at hand, but the medium of musical sound. It is through these extra-musical forms that Cage composed not only individual works of music, but attempted to re-compose and redefine the medium of music itself.

Cage composed through these rhythmic and extra-musical forms rather than through traditionally musical sound, in order to propose his own definition of music. This is not to suggest that Cage's emphasis was not on the sounds; for he insisted that the listener pay attention to the quality of the sounds themselves, that *this* was real music. But a listener's attention to sounds themselves is itself the result of a process—it is the activity of someone who, according to Cage, "know[s] how to listen." That a listener might learn from his music "how to listen" would be, for Cage, the ideal outcome of the sonic, formal negation that constitutes so much of his music. It is through this formal negation that Cage's music opens up opportunities to elaborate and redefine what formalism and "formal analysis" might be.

Music such as Cage's poses ontological and methodological problems for the practice of music analysis, but consideration of the forms that pervade the ecological perception of music are one important way into discussing how this music engages its audiences in the definitional questions of conceptual music Indeterminacy, noise, and silence, then, are not so unanalyzable or formless after all—in fact, they perform some meta-analytical work of their own. By challenging received notions of musical sound and organization, Cage's music makes sound and organization, along with forms, formalism, and music analysis available for elaboration, redefinition, and re-composition. In works such as *4′33″* and *0′00″*, Cage as composer does not cease composing simply because he doesn't write notes and rhythms. Rather, he accesses and manipulates the material, temporal, experiential forms that surround music as a cultural act and product, drawing them into his work and composing through them a listening subjectivity in which sound and noise become music. Perhaps this explains the recollection of Cage's friend and fellow composer Christian Wolff:

> [Cage] never regarded a piece as finished until it was performed. It was all very well to put it down on paper, but it was pointless unless it got out there somehow to somebody.[61]

Without a performance, Cage's music was not yet music—because the sounds had not yet been heard, and because the music had not yet taken form.

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[61] Christian Wolff and David Patterson, "Cage and Beyond: An Annotated Interview with Christian Wolff," *Perspectives of New Music* 32, no. 2 (Summer 1994): 71.

John Cage's works of indeterminate music might thus be construed as technologies for the redefinition of musical sound by its conceptualist negation. These technologies could, however, fail in their intended effects, much to the composer's frustration. Cage persisted in his project of redefining musical sound by revising *4′33″* and composing sequels, including *0′00″*. As hinted at by Wolff with regard to Cage's insistence upon performance, the conundrums, the pitfalls, and the great potential of works of conceptual music is often most evident in the social setting of musical performance. Indeed, Cage deemed that, if they were to succeed, his musical technologies needed to sound before an audience amidst the many (extra-)musical forms that surround and support a live musical performance. In the following chapter, I advance my analytical argument around Cage's work by picking up the relationship between Levine's forms and Clarke's musical ecologies in analyses of both *4′33″* and *0′00″* as further refinements of a musical technology. Motivated by difficulties both personal and professional, Cage decided that his project of musical composition should expand to involve another kind of composition altogether. If the audiences that were so important to the success of his music did not already know how to listen, Cage decided that he would need to teach them himself.

Chapter 2: Composing a Listening Subjectivity

John Cage is now the most recognizable representative of American experimental composition. In the humanities, he is close to a "household" name, even across academic disciplines. In performance circles, he remains among the most celebrated and most frequently programmed of American composers, especially by percussion ensembles. Outside of new music communities, the composition that has earned him the most fame (or infamy), *4′33″*, is the go-to example of strange and novel experimental music.[1] It is perhaps ironic that a composer whose stated wish was to remove himself from his work should find himself anointed as one of the figureheads of modern American composition. Cage's fame was crucial, however, to the success of his musical works and their function as technologies for the kinds of cultural interventions he sought to make.

When Cage faced problems such as audiences who misunderstood his music—or who "didn't know how to listen"—he looked to solve these problems by first reevaluating how and why he was writing music in the first place. In taking a critical look at his own compositional technique, he decided that the problem was not simply with how *well* he was writing music; rather, he decided that the problem was with the implicit goals of traditional musical composition. As a result of this

[1] For an in-depth analysis and interpretation of this work along with details on Cage's influences, see Kyle Gann, *No Such Thing as Silence: John Cage's 4'33"* (New York: Yale University Press, 2010).

decision, Cage turned away from traditional compositional technique and sought instead to explore altogether different ways of organizing musical sound.[2] Although his engagement of sound recording technologies was varied (and often negative), his use of musical composition *as* a technology for the analysis and exploration of fundamental musical concepts was sustained and comprehensive.[3] Drawing ideas and inspiration from an Americanized Zen Buddhism to support this exploration, Cage refined his implementation of indeterminacy in performance and developed complex systems of chance operations to make musical decisions on his behalf as part of the compositional process. These techniques, however, were not without their own problems. The strange sounds, noise, and even silence which came out of his implementation of chance and indeterminacy perplexed his audiences at least as much as his earlier, more traditionally composed work had. Rather than go back to the drawing board, Cage decided that the solution to this new set of challenges was to change the way his audiences listened.

In this chapter, I chart a course through a few significant points in Cage's compositional output in some historical and biographical depth.[4] More specifically, I trace his refinement of compositional process with regard to indeterminacy and chance, drawing upon the analytical

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2 For a historical perspective on Cage's varied compositional techniques (and an unequivocal claim that Cage was, first and foremost, a composer of music), see James Pritchett, *The Music of John Cage* (New York: Cambridge University Press, 1993).

3 For an account of Cage's turbulent relationship with recording technology, see David Grubbs, *Records Ruin the Landscape: John Cage, the Sixties, and Sound Recording* (Durham: Duke University Press, 2014).

4 This chapter takes a necessarily limited biographical course through Cage's life and career; for more detailed biographical accounts, see Rob Haskins, *John Cage* (London: Reaktion Books, 2012); David Nicholls, *John Cage* (Chicago: University of Illinois Press, 2007); and David Revill, *The Roaring Silence: John Cage; A Life* (New York: Arcade, 1993).

perspective and the expanded notion of forms that I took up in the previous chapter. In the first part of the present chapter, I identify key moments in which Cage's cultural interventions into musical norms seem to have been motivated at least as much by facets of his biography as by an intellectual investment in musical modernism. The technical adaptations he made with regard to compositional process were variously inspired by figures as far-flung as Daisetz Suzuki, Marcel Duchamp, Henry David Thoreau, and Alan Watts.[5] As his career progressed, Cage used creative readings of their work to grant himself license to outsource certain musical decisions to chance operations and indeterminate performance conditions. These compositional techniques, which can seem to confound even Levine's expanded formalism, are the focus of the second part of this chapter. In one sense, Cage no longer composed the sounds of his music; for works such as *4′33″* and *0′00″*, coincidental ambient sound and the performer's independent choices dictate the sounds of the music.[6] While Cage's departure from a classical composer's usual responsibilities for the sounds of a musical work already constitutes a significant cultural intervention, I argue in the second and third parts of this chapter that Cage's compositional project extended well beyond music and sound. As I suggested in the previous chapter's discussion of *4′33″* and *0′00″*, Cage accessed and manipulated the material and temporal forms that surround musical performance, drawing them into his indeterminate works. In this chapter, I will argue that Cage used his musical works as technologies to

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5 Rob Haskins discusses the pivotal importance of Alan Watts's writings to Cage's literary explorations in *John Cage*, 58.

6 And it is this sense which Pierre Boulez attacked with some ferocity in "Alea," *Perspectives of New Music* 3, no. 1 (Autumn–Winter 1964): 42–53.

compose a listening subjectivity that would comprehend sound, noise, silence, and music as one and the same. To conclude, I adopt Anahid Kassabian's notion of "distributed" subjectivity to describe some of the ways in which the listening, performing, and composing cultures of American experimental music picked up Cage's ideas from his musical works, and how they helped to proliferate the listening subjectivity he composed for his audiences.

Biography

John Cage claimed that his life as a composer began with a promise to Arnold Schoenberg.[7] After leaving studies toward a bachelor's degree in theology at Pomona College and traveling Europe for a year and a half—entertaining interests in architecture, poetry, painting, and theater—he returned home to California in 1931, where he began to consider seriously a career in music. He mailed some early compositions to Henry Cowell, who suggested that Cage's best course of action would be to take lessons in New York City with Adolph Weiss, a student of Schoenberg's, all with the eventual aim of studying with Schoenberg himself. Heeding this advice, the then-21-year-old crossed the country and took up study with Weiss and Cowell for a full two years before approaching the

[7] For critical accounts of the relationship between Cage and Schoenberg, see Michael Hicks, "John Cage's Studies with Schoenberg," *American Music* 8, no. 2 (Summer 1990): 125–40; and Severine Neff, "Point/Counterpoint: John Cage Studies with Arnold Schoenberg," *Contemporary Music Review* 33, no. 5–6 (2014): 451–82.

innovator of the twelve-tone method. Cage couldn't afford Schoenberg's asking price, but, as the story goes, the elder composer agreed to take him on as a student free of charge, on one condition: that Cage dedicate his life to music.[8] The young Californian enthusiastically accepted and took part in Schoenberg's classes at the University of Southern California and the University of California, Los Angeles, in addition to private lessons.

Schoenberg's influence on Cage manifested diversely and pervasively. Beyond strict dodecaphonic compositional technique, the "emancipation of dissonance" celebrated by Schoenberg appears to have shaped some of the more general, fundamental ideas that drove Cage's compositional ethic. American composer and critic Virgil Thomson identified in Cage's percussion music his ideological descent from Schoenberg:

> Mr. Cage has carried Schoenberg's harmonic maneuvers to their logical conclusion. He has produced atonal music not by causing the twelve tones of the chromatic scale to contradict one another consistently, but by eliminating, to start with, all sounds of precise pitch . . . By thus getting rid, at the beginning, of the constricting element in atonal writing—which is the necessity of taking care to avoid making classical harmony with a standardized palette of instrumental sounds and pitches that exists primarily for the purpose of producing such harmony—Mr. Cage has been free to develop the rhythmic element of composition, which is the weakest element in the Schoenbergian style, to a point of sophistication unmatched in the technique of any other living composer.[9]

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[8] Revill, *The Roaring Silence*, 47.

[9] Virgil Thomson, "Expressive Percussion" in *John Cage*, edited by Richard Kostelanetz (London: Allen Lane, 1971), 72.

From this perspective, Cage continued the shaking-loose begun by Schoenberg's emancipation of dissonance by freeing musical sound from the constraints of discrete pitch and traditional instrumentation. Following in the footsteps of inventive composers like Henry Cowell and Harry Partch, Cage used the sounds and noises of extended techniques, percussion instruments, and various found objects as the sonic building blocks for a number of works in the late 1930s into the 1940s. His series of *Constructions* (1939–1941) and *Imaginary Landscapes No. 1–3* (1939–1942) are sonically cacophonous yet structurally meticulous compositions that foreground the sounds of gongs, cymbals, brake drums, anvils, tin cans, etc., arranged into the sophisticated, rhythmically derived "square root" or "micro-macrocosmic" forms that Thomson praised. As it happened, these sonic and formal innovations also presented new logistical problems: performance of the works, which require an extensive battery instruments, takes up a lot of space on stage. In situations where such space was limited, Cage, ever the inventor, packed his collections of percussive sounds into an instrument that nearly every musical venue already had: the piano.

Cage's "prepared piano," which moved the percussion ensemble into the strings of the piano, was a sonic renovation and remodeling of the Western classical tradition's standard instrument—a negation of standard instrumentality via a visual-sonic dissonance. Instead of producing the typical twelve, tempered tones, the various screws, erasers, springs, and other assorted oddities wedged into and between the piano strings caused all kinds of pops, plunks, and ringing to emerge from the piano. In an autobiographical essay, Cage described the circumstances that led to this innovation:

> Before I left the Cornish School I made the prepared piano. I needed percussion instruments for music for a dance that had an African character by Syvilla Fort. But the theater in which she was to dance had no wings and there was no pit. There was only a small grand piano built in to the front and left of the audience. At the time I

> either wrote twelve-tone music for piano or I wrote percussion music. There was no room for the instruments. I couldn't find an African twelve-tone row. I finally realized I had to change the piano. I did so by placing objects between the strings. The piano was transformed into a percussion orchestra having the loudness, say, of a harpsichord.[10]

As the cliché goes, necessity is the mother of invention. As is the case with so many inventions, however, Cage's turned out to be much more than a clever solution to a practical problem. His compositions for the prepared piano are now among his most well-known and oft-performed; indeed, Cage's modification of this classic instrument are now modern classics themselves. This reception is due, at least in part, from the novelty of the experience for player and audience alike. Contemporary audiences of American experimental music had already experienced works like Cowell's *The Banshee*, in which the pianist reaches into the body of the instrument and manually sounds the strings. In the case of Cage's prepared piano music, however, the visual theatricality of these extended techniques is absent: his de-familiarization of the instrument is, as far as the audience is concerned, entirely sonic. From the outside, the piano appears as it should; the notation in the printed score looks ordinary; and once all the preparations have been made, the performer simply plays the notes as written. But despite this execution of standard pianistic technique, the usual crisp, clean notes of the pianoforte are replaced by odd clunking and rattling. No two preparations of the piano are ever quite the same, and each performance of works like the *Sonatas and Interludes* is a new discovery. What was a renovation and remodeling of the piano turned into a reimagining of

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[10] John Cage, "An Autobiographical Statement," *Southwest Review* 76, no. 1 (1991), 62.

instrumentality. The uncanniness of strange sounds emerging from the most familiar of musical instruments certainly contributed to Cage's early fame as composer and performer, but this strangeness also affected some listeners in ways he did not want or intend.

Cage enjoyed success in having his early music performed but was often frustrated by audiences' reception of his work. He was particularly upset by reactions to *The Perilous Night* (1944), a suite of short pieces for prepared piano that he meant to be dark, brooding, and bleak; critics and audiences were, however, less than sympathetic to his musical expressions of anguish.[11] It is well to note that the mid-1940s was a painful time for Cage. One part of this was intensely personal: during this time he came to realizations about his sexual orientation that culminated in the divorce of his wife of ten years.[12] Another part was creative; as he later wrote,

> I was disturbed both in my private life and in my public life as a composer. I could not accept the academic idea that the purpose of music was communication, because I noticed that when I conscientiously wrote something sad, people and critics were often apt to laugh. I determined to give up composition unless I could find a better reason for doing it than communication.[13]

Cage did not, of course, give up composing—this would have meant breaking his promise to Schoenberg, a teacher he revered. Instead, he looked for new purpose, for a better reason to compose.

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11 Nicholls, *John Cage*, 31–35.
12 Haskins, *John Cage*, 46–51.
13 Cage, "Autobiographical Statement," 62.

During this period of his life, Cage found solace in the Americanized Zen Buddhism and Eastern philosophy of D.T. Suzuki and Ananda Coomaraswamy, among others. Cage latched on to certain of the teachings and ideas he encountered during this time, especially, it seems, those that were therapeutic to both his emotional well-being and to his relationship to composition. For instance, it was in the writings of Coomaraswamy that he found Saint Thomas Aquinas's function for art: "to imitate nature in her manner of operation."[14] Cage's reading of this quote and its bearing on his compositional process rests upon an important distinction: Aquinas' ideal is that art should imitate nature's *operation*, not that it should resemble nature's material forms. In other words, this ideal imitative relationship between art and nature is one of ethic and process, not of aesthetic and product. Thus, Cage did not set about composing music that *sounded like* nature—at least, not right away.[15] Rather, he looked for ways of fundamentally altering his compositional process. The sounds of the prepared piano and percussion ensembles may have subverted the normal sounds of the classical tradition, but they were still composed in a traditional manner. For Cage, it was exactly this traditional manner of composition that had led to the pains of miscommunication. Through adopting Aquinas's perspective on the purpose of art as a guiding principle for creativity, Cage sought to leave behind these discouraging attempts to express himself through music. After all, "nature" does

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[14] Edward James Crooks, "John Cage's Entanglement with the Ideas of Coomaraswamy" (PhD diss., University of York, 2011), 152–156.

[15] You Nakai, "How to Imitate Nature in Her Manner of Operation: Between What John Cage Did and What He Said He Did," *Perspectives of New Music* 52, no. 3 (Autumn 2014): 141–60.

not feel nor express human emotion; a music that imitates nature, then, should be incapable of being misunderstood.[16]

For such a formative idea, though, "nature in her manner of operation" does not undergo any detailed development in Cage's own writings. Instead, he appears to have taken nature as something of a negative ideal. Nature's appeal for Cage was in all that it was *not*: not human, not expressive, and not subject to misunderstanding. Its aesthetic was a consequence of its nonhuman condition and—by definition—not consciously designed or presented to convey or confer any kind of *meaning*. Misunderstanding needs meaning, and so nature's lack of meaning seemed an ideal safeguard against misunderstanding. Aquinas's ideas about the function of art promised an alternative, an opposite to the painful, human failures of *The Perilous Night*. This negative aesthetic shows in Cage's reform of his compositional process in the following years. As he cast a critical eye (and ear) on his work, Cage did not lay out a plan to compose a new music that imitated certain qualities or behaviors of nature; rather, he targeted for expulsion what he perceived to be the all-too-human risks of composition: expression, taste, and personality. More than composing nature into his music, Cage tried to compose himself out of his own work, using chance operations and indeterminate performance conditions as technical means of doing so.

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[16] For more on Cage, nature, and experimental music more generally, see Benjamin Piekut, "Chance and Certainty: John Cage's Politics of Nature," *Cultural Critique* 84 (Spring 2013): 134–63; and Matthew Rogalsky, "'Nature' as an Organizing Principle: Approaches to Chance and the Natural in the Work of John Cage, David Tudor, and Alvin Lucier," *Organised Sound* 15, no. 2 (2010): 133–36.

During the late 1940s, then, indeterminacy and chance began to emerge in Cage's writings and music.[17] Both of these techniques displace some amount of responsibility for compositional decisions from the composer onto another party. In the case of Cagean indeterminacy, this other party is most often the performers, who, in realizing the work, are empowered to make choices that alter the sounding music. Because these choices alter the sounding music, indeterminate works inevitably change from one performance to the next. In his chance music, on the other hand, Cage would often flip coins or roll dice to decide the particulars of melody, harmony, rhythm, dynamics, time lengths, or other parameters of musical sound and organization. He carried out these chance operations as part of the process of composing, and so they served to determine aspects of the music that then remained fixed in the score.

The distinction between indeterminacy and aleatory is subtle but significant: indeterminacy describes a situation in which a composer leaves a piece of music with an amount of its final sounding form subject to the will of others; chance is the determination at random of an amount of a piece of music's final sounding form. These two techniques are not mutually exclusive: the length of the radically indeterminate *4′33″* and each of its movements, for example, were determined at random via chance operations. Whether or not indeterminacy and chance bear any more resemblance to nature's operation than do traditional means of composition, for Cage it was the displacement of compositional responsibility—and thus of the possibility for misunderstanding—that was the

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[17] For wide-ranging accounts of Cage's "pre-chance" period, see David W. Patterson, ed., *John Cage: Music, Philosophy, and Intention (1933–1950)* (New York: Routledge, 2002).

attraction. Following the disappointment of *The Perilous Night*, Cage did not simply shift his focus and attempt to write non-expressive music; with the techniques of indeterminacy and chance, he sought technical means of eliminating the possibility for expression.

As it turned out, however, indeterminacy and chance could not eliminate the possibility of misunderstanding. As I have noted in Chapter 1, the audience misconstrual at the premiere performance of *4′33″* prompted Cage to bemoan the fact that they "didn't know how to listen." Central to this misconstrual was the fact that the audience had little idea of *what* they were meant to listen to. Speaking with Kobler, Cage filled in some details from memory:

> You could hear the wind stirring outside during the first movement. During the second, raindrops began pattering the roof, and during the third the people themselves made all kinds of interesting sounds as they talked or walked out.[18]

The Maverick Concert Hall, site of the premiere performance on August 29, 1952, is set in the woods of Hurley, New York, just outside of Woodstock. Here, the silence/sounds of *4′33″* did not just *imitate* nature in operation; the wind and the rain *were* nature in operation. In this sense, the work is a limit case of Cage's self-removal via indeterminacy—a musical composition without any composed music. This limit case produced some success and some failure.

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[18] Richard Kostelanetz, ed., *Conversing with Cage* (New York: Routledge, 2003), 65.

Fig. 2: The Maverick Concert Hall in Hurley, NY [accessed July 31, 2019: maverickconcerts.org]

Cage's intervention into compositional process succeeded in that he avoided the miscommunication of personal feelings. Nevertheless, the audience still failed to hear, to feel, to experience what Cage wanted them to. His audience wasn't expecting a "silent" piece of music, and so of course they "didn't know how to listen." They dismissed as extraneous noise those sounds that Cage sought to frame as music, talking and walking out before Henry Cowell's *The Banshee* (the piece that followed *4′33″* on the original program) could even begin. In one sense, the failure of *4′33″* went above and beyond the misunderstanding of *The Perilous Night*: the audience for *4′33″* didn't simply feel the wrong thing; they didn't even recognize that they were meant to engage with

sounds at all. The implementation of indeterminacy and chance in his compositional process with which Cage sought to avoid the failures of traditionally expressive music-making in fact raised the stakes considerably. The misunderstanding of *4′33″* at its premiere speak to the shaky ground of musical conceptualism: because its negations and challenges happen at the level of definition, its potential failures also happen at the level of definition. In tuneful music, listeners may prefer one melody over another, or they may find one song more tasteful than another; with the sort of conceptualism that is activated by works such as *4′33″*, the risk is that listeners may dismiss the "music" as something else entirely—something that is not "music" at all.

In his indeterminate/chance music, Cage ceased composing with specific pitches and rhythms and, in *4′33″*, he ceased composing sounds in any direct sense at all. This raises the question: is *4′33″* really a "musical composition" at all? Cage certainly thought of it as such, and he certainly thought of himself as the composers of *4′33″*. He did, after all, write a score and had David Tudor, a virtuosic concert pianist, premiere the piece on a program of other musical works, all of this activity taking place in a recital hall: from the perspective developed at the end of the previous chapter, the (extra-musical) forms of the musical work were intact. In other words, everything involved was in its right place—even, for Cage at least, the sounds of the wind and the rain. The only thing in this picture of a musical performance that went awry was the *audience*. Cage lamented that "they didn't know how to listen," thus casting some blame on their ignorance. But he was not deterred.

Cage spent the next few decades of his career revising and expanding *4′33″*, composing sequels, and creating series of other radically indeterminate works that complemented his first "silent" piece. The differences between these works and their multiple versions or instantiations are often subtle, but, with the stakes of musical conceptualism at this level of definition, even the subtlest of

differences can have wide-ranging ramifications for the audience's reaction to and understanding of these pieces as "music." *4′33″*'s premiere was an instructive moment for Cage, and, in return, he would spend years trying to teach his audiences "how to listen." These revisions and tweaks, different and subsequent versions, series of works, and explanatory essays all represent efforts on Cage's part to compose a listening subjectivity for his audiences. This subjectivity is one that fits his larger aesthetic and ethical projects, and which is intimately tied to ideas from Eastern philosophy and ways of being that he derived from his readings in the 1940s and 50s.

To compose a listening subjectivity is in some senses a considerably tougher task than stringing melodies together. It also required that Cage take on a more didactic tone, rather than a merely creative or expressive one. From this perspective, Cage did not cease composing, or humble himself and assume the role of listening along with his audiences. Rather, in considering the implications of conceptualism, Cage's intervention into compositional process can be seen as an intervention into listening culture. One might say that this composer attempted to conquer music at the definitional level, exercising composition agency over not just notes and rhythms but over ideas and concepts as well. The many revisions, changes, and tweaks he made to works like *4′33″* over the years provide evidence of this change in tact and in purpose. In what follows I will use the terms and concepts introduced in Chapter 1 to articulate the technical means by which Cage composed a listening subjectivity for his audiences. Central to this discussion are further inquiries into the relationships between Levine's forms and Clarke's musical ecologies, as well as some clarification of the distinctions between aleatory and indeterminacy as compositional devices. As examples of Cage's continued compositional refinement, I will turn toward *4′33″* and *0′00″* as among the most open-ended, radically indeterminate works of his compositional output. Although they differ in significant

ways, each shows the importance of text and sound to Cage's attempted composition of musical concepts and listening subjects.

The Forms of Formless Music

From the perspective of music analysis, I argue that Cage's utilization of the forms which surround music reinforces the ecological emphasis of Eric Clarke's theory, in which all sorts of extra-musical cues and clues play an important part in the perception of musical meaning. Although Clarke's use of the term "perception" correlates with LeWitt's "perceptual," there are significant differences in the ways the terms are deployed. For LeWitt, writing in the 1960s and trying to convey the intentions behind his artistic production, splitting the perceptual and the conceptual served a rhetorical function. For Clarke, perception is far more versatile and encompasses the wealth of information available to the viewer/listener. Furthermore, his ecological approach to listening sees perception as prior to and necessary for interpretation, and for the derivation of meaning from music. By looking and listening beyond the fixed, notated, traditionally "musical" material—the notes on the page, the sounds of standard instruments, and so on—these extra-musical cues that are crucial to Clarke's approach ought to direct the music analyst toward a critical perspective which includes music's environment in the interpretation and analysis of musical works.

In the case of Cage's *0′00″*, the concert hall, the stage, the program booklets, the score(s), and the sound systems all belong to the order of typically musical things, which together help to frame its sounds as music. But even beyond these immediate musical surroundings, there are other

cultural forces at work which, although invisible, do much to unite sound, physical objects, performers, and listeners in the sort of ecological perception which Clarke theorizes. Some of these cultural forces can be folded into Caroline Levine's expanded notion of forms and formalism.

For Levine, *rhythms* are forms that can stretch across vast expanses of time, and can include the large-scale, repetitive forms of regular concert attendance and the sort of cultural, ritualized listening practices shared by audiences in these concert situations.[19] Over time, one becomes accustomed to concert etiquette and develops an ever-refined sense of what to expect, including the perceived forms within Clarke's ecology (the hall, the stage, the lights, the program, the audience, and sound systems). These repetitive, large-scale rhythmic forms of concert attendance sear the conventional objects of musical performance into collective memory.[20] While this makes the physical things of musical performance all the more central to music's ecological perception, it can also make these traditional musical trappings—such as the stage, the score, and the sound system—all the more transparent in the audience's experience. A performance of *0′00″* exploits these familiar musical forms—both physical objects and rhythmic ritual—and uses them to frame unfamiliar, non-musical sounds within an otherwise familiar, musical experience. Familiarity with the rituals of applause, fading of lights, bowing, and audience silence during performance speaks to the breadth, depth, scale, and number of these rhythmic forms, and to their power over experience. Indeed, individual familiarity with and participation in these forms is crucial to participation in the listening culture of

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[19] Levine, *Forms*, 49.

[20] For an account of various types of social memory and how they are established through habitual practices, see Paul Connerton, *How Societies Remember* (Cambridge: Cambridge University Press, 1989).

the classical tradition. Cage's work takes these forms and turns them into technologies which enable the composer's cultural interventions into listening, performance, composition, and the medium of music. The forms native to classical concert music play constitutive roles in its listening cultures, and so they become indispensable devices for both conceptual music and its analysis. And yet, even this expanded notion of forms can run into problems when it encounters things that appear to be formless.

Indeterminacy

In Levine's usage, the same concept of form that describes the shape of a coffee mug and its ability to contain things can apply equally to a political party or to a literary work. Through inventive interpretation, she is able to subject vastly disparate things to similar analytical scrutiny, putting them into dialogue with one another and forging relationships rife with meaning. But Cage's music presents another interesting wrinkle to Levine's formalism which comes via his reliance on indeterminacy. While this expanded notion of form sets its sights considerably wider than the highly specialized music theories of, say, sonata form, the spirit behind them is the same. The idea is to enable productive interpretive dialogue between things that are in some way similar—whether the first movements of symphonies or prison cells and coffee mugs. And yet, as I note in Chapter 1, indeterminacy and substitutability can seem to make an impossible demand on the analyst with form in mind: to describe the shape of something that is constantly changing—something that is form*less*.

The apparent impossibility of form within formal indeterminacy might be cause for even the most well-intentioned analysts to throw their hands up in frustration. Such are the conundrums and confusions of conceptualism. But if Cage's indeterminacy appears to negate form altogether, then it is from the critical framework developed around conceptual art that such formal indeterminacy can begin to make some kind of analytical sense. From an Osbornian perspective, of course, works such as *4′33″* and *0′00″* are about the form of musical sound precisely because they negate formal musical sound. It is not the form of indeterminate sounds, but rather the multifarious musical forms which *surround* the sound which can shape interpretation and analysis of works of conceptual music. Cage as composer thus negotiated a careful balance: radical intervention into certain received conventions of classical listening culture while leaving others in place. Indeterminacy within classical music's traditional forms proved an effective compositional strategy for maintaining this balance.

Indeterminacy, though, can be a fraught term. As it is used today in discussions of musical organization, "indeterminacy" is often conflated with "aleatory." Indeed, a search for the former in Grove Music Online yields a page that reads, "See Aleatory." There, one finds Paul Griffiths's definition for "aleatory":

> A term applied to music whose composition and/or performance is, to a greater or lesser extent, undetermined by the composer.[21]

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[21] Paul Griffiths, "Aleatory," (2001) in *Grove Music Online*, accessed April 12, 2015: http://www.oxfordmusiconline.com.proxy.uchicago.edu/subscriber/article/grove/music/00509?q=aleatory&search=quick&pos=1&*start=1#firsthit*

Griffiths goes on to point out that this definition, if taken to an extreme, could apply to any and all music—at least, all music written by a "composer." There are, after all, innumerable factors that make each instantiation of a musical work unique, never a perfect reproduction. Variance in the exact sounds of instruments, acoustics of the performance space, and the equipment used for listening or playback can all make each final sonic product sound noticeably, if subtly different than the next. While I admit that this constitutes a rather uncooperative reading of Griffith's definition, a term that is meant to delimit a subset of music is not particularly useful if it can be applied to all music. I suggest a small addition, meant to highlight the intention behind indeterminacy and to limit the applicability of the term:

> A term applied to music in which some aspect of its composition and/or performance is, *by design*, undetermined by the composer.

So, the terms "indeterminacy" and "aleatory" should not refer to tiny discrepancies in sound that are out of composers' or performers' control, but rather to nontrivial elements of music over which a composer meaningfully relinquishes some degree of control.

Indeterminacy defined this way is still quite broad. Even in classical works of the eighteenth and nineteenth centuries there are opportunities for performers and conductors to shape their music through interpretation and some degree of improvisation. Cadenzas are among the most open-ended of such occasions, allowing performers to improvise and/or write their own solos—other composers also often wrote and published cadenzas for famous concertos. Along similar lines, a singer may ornament a da capo aria's melody the second time through, embellishing and elaborating on the given notes. The length of fermatas, ritardandos, and grand pauses can vary depending on the players,

singers, or conductors; gradients of tempo and use of rubato are, within reason, left up to the performer(s). Such improvisation and interpretation in this repertory is subject to strict rules, conventions, and taste. Singers learn what ornamentation is appropriate where; conductors carefully refine their sense of timing and phrasing; most pianists only attempt their own cadenzas after years of study and practice. And listeners and critics often have strong opinions on which of these improvisations and interpretations is best.

Improvisation in other repertories and traditions is similarly constricted. Rules and guidelines for playing and singing in traditions as diverse as jazz and raga are passed down orally and/or in written form. Even in "free" jazz, players' spontaneous music-making is inevitably constrained by the conventions of the particular community of practice within which they are active. It is for this reason that John Cage was wary of improvisation. Writing about indeterminacy, he clarifies:

> Improvisation is quite another thing and is something that I want to avoid. Most people who improvise slip back into their likes and dislikes, and their memory, and they don't make any . . . they don't arrive at any revelation that they're unaware of.[22]

Cage thus sought to differentiate and distinguish indeterminacy from improvisation. Nonetheless, given that improvisation *is* indeterminate, this proved to be a difficult feat. Cage, for his part, endeavored to embrace the indeterminate element of improvisation, while simultaneously attempting to expunge the personality and taste that accompanies it:

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[22] Steve Sweeney Turner and John Cage, "John Cage's Practical Utopias: John Cage in Conversation with Steve Sweeney Turner," *Musical Times* 131, no. 1771 (Sept. 1990): 469–472.

> What I would like to find is an improvisation that is not descriptive of the performer, but is descriptive of what happens, and which is characterized by an absence of intention.[23]

Indeterminacy and chance were meant to eliminate tastes, likes and dislikes, and personality from his compositional process, from performance, and thus from the sounding music. That is, those senses that are so refined and valued in regulating improvisation in other traditions were antithetical to the compositional ideals Cage derived from Aquinas's ideas about music and nature. Thus, any kind of "improvisation" that found its way into his music would need to be carefully controlled and regulated, and focused not on the material realities of sounds but on the activities of the performer. In consequence, Cage's control had to extend beyond mere sounds: any *improvisers* that find their way into Cage's music must be carefully controlled and regulated as well. His purge of taste and personality was thus not only self-directed; he went to great lengths to ensure that his performers wouldn't be relying on such judgments either. Cage's removal of himself from his music thus turned from a personal intervention to a cultural one. As in the above examples, this kind of control over the performer isn't in itself unusual in the tradition of Western classical music. Cage's preference for indeterminacy over improvisation, though, may be understood differently in light of other musical practices.

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[23] From an interview with Bill Shoemaker (1984), found within Richard Kostelanetz, ed., *Conversing with Cage* (New York: Routledge, 2003), 220. Kostelanetz's book combines many separate interviews into one text; the original is Bill Shoemaker, "The Age of Cage," *Downbeat* (December 1984).

As George Lewis has cautioned, the separate evaluation of indeterminacy and improvisation (he takes John Cage and Charlie Parker as archetypal examples of each) risks obscuring the racial and political tensions that underlie divisions between genres of modern music, as well as the distinction between "high" vs. "low" music.

> In particular, the anointing, since the early 1950s, of various forms of "jazz," the African-American musical constellation most commonly associated with the exploration of improvisation in both Europe and America, as a form of "art" has in all likelihood been a salient stimulating factor in this reevaluation of the possibilities of improvisation.[24]

For Lewis, Cage's governing of his (non-)improvising performers represents a more-than-coincidental interest in *indeterminacy* by a "Eurological" art-music composer, who, by distancing himself from *improvisation*, is also circumventing due attribution to contemporaneous "Afrological" art-music composers and practitioners. Nevertheless, Cage's technical solution to the question of indeterminacy and improvisation certainly stands apart from solo or ensemble jazz improvisation, largely along the lines of *intention*. The means by which he controlled his performers are often spelled out clearly in his text scores for works like the *Variations* series and *0′00″* (for instance, in the form of specific instructions that forbid performers from performing music), but his means of control could also take less obvious forms.

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[24] George Lewis, "Improvised Music after 1950: Afrological and Eurological Perspectives," *Black Music Research Journal* 16, no. 1 (Spring 1996): 91–92.

Among Cage's earliest indeterminate works is *Imaginary Landscape No. 4* (1951), for twelve radios. In writing the piece, Cage said that he "had a goal, that of erasing all will and the very idea of success."[25] Again, he saw the mistaken reception of *The Perilous Night* as a failure not just of his technical skills but of his aesthetic outlook, and wanted to avoid similar outcomes. This fourth installment in the *Imaginary Landscape* series is four minutes long and calls for twenty-four performers and a conductor. There are two performers assigned to each radio—one works the tuning knob while the other controls volume and tone color. The score is written in standard musical notation, including "accelerandos" and "ritardandos." The radio operators follow their part carefully, kept in sync by the conductor. The most obviously indeterminate element of the work is the sound that the radios produce: an ever-changing combination of static noise, silence, and whatever broadcasts are within range. A major part of the piece thus rests in the hands of unwitting radio broadcasters. In most performances the audience laughs as a current hit song suddenly blares out of one of the radios, only to be rudely cut short. A concert performance is an uncanny spectacle—a conductor fastidiously keeping time while pop stations, sports broadcasts, commercials, and talk shows cut in and out. Here, his performers have been stripped of expressive potential—at least audibly. They do not control what sounds occur in what combination, nor do they have a choice in when to activate or alter the sources of these sounds. They follow a fastidious set of instructions that instrumentalizes the radio by way of the extra-musical forms at Cage's disposal: conductor, parts,

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[25] John Cage, *For the Birds*, ed. Tom Gorat and John Cage (Salem, NH: Marion Boyars Publishers, 1981), 169.

score. Rather than playing their instruments, performers in *Imaginary Landscape No. 4* operate their radios, a machinic element which suggests that, rather than playing music, Cage and his co-composers *manufacture* it.

The process of composing *Imaginary Landscape No. 4* involved an elaborate series of chance operations used to determine when performers were to move the dials and volume knobs on the radios. Cage used a system of flipping coins derived from the method for the obtaining of oracles with the *I Ching*, the ancient Chinese "Book of Changes." Certain combinations of heads and tails would designate one of the 64 hexagrams of the *I Ching*, and these hexagrams served as answers to questions about the music. When deciding dynamics, for example, only 16 of the 64 hexagrams would dictate changes—one, five, nine, etc.—while the rest would indicate that the dynamic should remain the same.[26] The instructions for radio operation, determined by chance but now fixed in the score, open up windows of opportunity for radio broadcast signals to find their way into the music. These signals are, of course, out of the performers', conductor's, or composer's control. *Imaginary Landscape No. 4* thus makes for an apt demonstration of the difference between aleatory and indeterminacy: the aleatoric score for *Imaginary Landscape No. 4* (composed using chance operations) allows for indeterminate sounds (chosen unwittingly by radio broadcasters) to constitute its musical content. Both aleatory and indeterminacy ensure that the intentions of the performers, conductor, and composer are subdued—if not completely eliminated. These two compositional devices are present in most of Cage's musical compositions from 1950 onward, though they often appear to

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[26] John Cage, *Silence* (Middletown: Wesleyan University Press, 1961), 57–60.

different degrees. Much of his series of *Number Pieces* (1987–1992), for example, are for specific instruments, and so the sounds—or at least the instrumental source of the sounds—used to populate each musical work are to this extent determinate, chosen by the composer. The succession of pitches in these pieces is, however, determined by chance, and the exact time and order in which these sounds appear are largely determined by the performer. In the *Number Pieces*, then, musical sounds are made to behave un-musically via chance and an indeterminate score; in *Imaginary Landscape No. 4*, coincidentally musical/non-musical sounds are entered into a musical composition. In both cases, extra-musical forms work to advance the way Cage composed his audience's listening subjectivity.

The direction Cage would take in his musical composition in the next handful of years would shift from blaring radios to an absence of intentional sound whatsoever. Indeterminacy and chance are open-ended compositional devices, and yet their deployment in different contexts and with different musical ends produced wildly different results. In what follows, I will consider the subtle refinements of Cage's most infamous "silent" piece of music, and the ways in which chance and indeterminacy found new utility as Cage continued his compositional project with extreme and novel limit cases.

4′33″ and its Sequels

Cage's experiments with indeterminacy and a visit to an anechoic chamber in 1951 produced one of his most re-told stories: When he entered Harvard University's anechoic chamber—a room designed

to completely sound-proof and echo-less—he expected silence.[27] Instead, he purportedly heard a high-pitched noise and a low noise. The engineers explained to him that there was nothing wrong with their room, but that he had heard the sounds of his own central nervous system and his blood pumping. Cage's take-away from this experience was that as long as he lived there would be sounds to hear—that there was no such thing as silence. This realization, coupled with the influence of friends in the art world, led to a "silent" piece, *4′33″* (1952). Since for Cage there could be no absence of sound altogether, silence became the absence of intentional sounds with meaning or purpose. The sounds that a pianist makes during a recital, for instance, are clearly intended for the audience. If one could mute the sound of the piano during this same performance, one might hear coughs, shuffling of feet, flipping of concert program pages, and maybe the hall's ventilation system—none of which is a part of the music. These extraneous sounds were the "silence" that Cage was after.

The instrument(s) and number of players make a negligible difference (if any) in the actual sounds of a work such as this. Since its first performance, *4′33″* has been "arranged" for wildly different forces. A YouTube search returns hundreds of videos; several bands have included silent tracks on their albums in tribute; there is even an iOS app through which users can upload their own recordings.[28] The differences between these versions lie in the sounds of the performances' settings and in the visual impression of the arrangement, the stage, and the space. It is telling that a piece

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[27] Nicholls, *John Cage*, 59.

[28] "4′33″ - John Cage" by Larson Associates, JohnCage.org, accessed July 15, 2019: https://www.johncage.org/4_33.html

with such a radical concept behind it received its first public performance as a solo piano work. As in his prepared piano music, Cage worked with the image of a modest but iconic musical instrument, delivering something that looked similar but sounded quite different from the classical piano literature.

A silent piece of music wouldn't by ordinary logic seem to require a score for performance or study, and yet there are several versions of *4′33″*.[29] The original manuscript score for the premiere has since been lost—the best, closest thing extant is David Tudor's 1989 recreation from memory. This version exists as staff paper with a standard treble and bass clef, in 4/4 time, with a tempo indication. In the score's proportional notation, a quarter note is equal to 60 beats per minute and each quarter note is to take up 2 ½ centimeters of space on the page. Thus, each measure is ten centimeters/four seconds long. Aside from clefs and bar lines, the staves are blank. There are three movements, labeled with Roman numerals, that last 33″, 2′40″, and 1′20″. In following this blank score during the premiere, Tudor turned its pages as the piece progressed in accordance with this time/distance scale. This theatrical element served not only to indicate to the audience that a performance was being staged, but also to tie this performance to the tradition of Western art music. The sight of a pianist on stage carefully obeying a score and turning its pages during a recital was one familiar to a classical audience, thus making the contrast between Cage's silence and its conservative frame emphatically stark. A later version of the score is quite different on the page, but would have had similar effect in performance. In 1953, Cage gave a score of *4′33″* to Irwin Kremen, an

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[29] Each is reproduced in: John Cage, *4′33″: John Cage Centennial Edition* (New York: Henmar Press, 2012).

American psychologist-turned-artist. This version features an indication that one page = seven inches = 56 seconds. Its proportional notation is read from top to bottom—vertical lines on the pages are adorned with marks of how much time has passed. This time, the three movements are 30″, 2′23″, and 1′40″. These lengths were no doubt also determined by chance, with the stipulation that they must add up to the total length of *4′33″*. (It's entirely possible that Cage simply misremembered the original lengths for the movements in his re-writing of the score for Kremen.)

The final distinct version of the score is the "tacet" version from 1960, when Cage first went to Peters to publish his music. It still bears the dedication to Kremen, but is reduced to a single page. In the top half of the page are three Roman numerals, each with the word "TACET" underneath. Below is a note:

> The title of this work is the total length in minutes and seconds of its performance. At Woodstock, N.Y., August 29, 1952, the title was *4′33″* and the three parts were 33″, 2′40″, and 1′20″. It was performed by David Tudor, pianist, who indicated the beginnings of parts by closing, the endings by opening, the keyboard lid. However, the work may be performed by any instrumentalist or combination of instrumentalists and last any length of time.[30]

With this score, Cage did away with concerns over specific lengths of time and space on the page. More significantly, he retracted the piece's fixed length and title, allowing both to become indeterminate. Much later, in 1986, Cage revisited and revised this "tacet" version, stating that only the lengths of the movements could change, not the overall length of the piece itself. But the 1960

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[30] Cage, *4′33″: Centennial Edition*.

version speaks to both his thinking at the time and to the role he wanted the performer to play in the piece. Giving control over the length of performance to the player(s) implies that the actual length is not important to the underlying concept of the piece. Instead of a fixed, scripted piece, the simple idea that silence is music could under this 1960 edition generate any number of works of differing durations. Nonetheless, even with such radical lack of constraint Cage borrowed from the classical tradition for terminology and structure.

The three movements, labeled I, II, and III, are an overt reference to the many three-movement works for soloist and ensemble alike, and the instruction "tacet" is a familiar one for ensemble musicians. The word tells a player that her instrument will not be needed within a movement or section, and that her part in the performance will be—at least for the moment—to *not* perform. Instead of focusing on her own part, she has the opportunity to simply listen to the music. This, I think, is exactly how Cage meant for his performers to spend their time during *4′33″*. For him, there is no such thing as true silence, and so there will always be sounds to hear. It follows that if those sounds can be music, then there will always be music to hear. Cage's "silent" piece relieves performer and audience alike of obligation to participate in a more scripted musical experience, freeing them to simply listen.

For all its open-endedness, though, *4′33″* is emphatically not a piece that encompasses any and all sounds. Standard concert etiquette is implied and expected; performers are to make no sounds that do not appear in the score. As a result, anything between the beginning and end of the performance is out of the performer's control. What composer and performer can do to influence the sound of *4′33″* lies mainly in the choice of venue. As I mentioned earlier in this chapter, the premiere, given by David Tudor, was held in Woodstock, New York's Maverick Concert Hall, a

covered stage surrounded by forest with open doorways—far from soundproof. Along with the weather's contributions, Cage also acknowledged the sounds the audience made as further additions to the sounds that constituted the musical composition.[31] It is clear that, while any intentional sound by a performer is out of bounds, sounds made by the audience are fair game.

A member of the audience at the premiere of *4′33″* who talks and walks out may indeed be talking and walking intentionally, but this is to say nothing of whether she intends her talking and walking out to be a part of the music. In his later reflections on the premiere, Cage seems to have taken the audience's ignorance of his new "silent" music into account and allowed their sounds to be unknowingly contributed to his music. Over time, as Cage's fame grew, more people came to know *4′33″*, and it has become his most iconic work. At the present moment, many—if not most—listeners to this silent composition have heard about it, learned about it, or thought about it before. This raises an interesting question: In a performance of *4′33″* in which everyone "knows how to listen," is a conscious contribution to the sounds of the performance space a valid part of the musical work? Knowing full well that the work is supposed to be "silent," does intentional noise-making on the part of the audience constitute silence? If it does, then the audience enjoys a level of agency and intention in dictating the sounds of the work that the composer and the performer do not. This being the exact kind of intention Cage sought to vanquish from his music, one can infer that his answer to this question would be an emphatic "no." By encompassing in his music causes of musical sound beyond the intentional actions of performers, Cage brought the actions (intentional or

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[31] See the quoted passage on page 85 of this dissertation from Kostelanetz, *Conversing with Cage*, 65.

unintentional) of audience members under the purview of his compositional project. In order for his audience to be properly initiated, however, they would need to become acquainted with Cage's redefined musical concepts.

The concept of Cagean silence, for example, seemed to need some explaining, as evidenced by the confusion attending its premiere performance. Even the negation of traditionally musical sound leaves some sort of sound in the place where the audience expects music. *Imaginary Landscape No. 4* offers radio stations and static; prepared piano music replaces the tones of the pianoforte with odd clunks, buzzes, and plunks. In order to perceive anything other than absence in Cage's radically indeterminate silent piece, one would need to "know how to listen." And so, while he had begun governing his performers and challenging traditional notions of musical sound and organization, *4′33″* and its seeming lack of sound generated the urgent need for Cage to compose a new listening subjectivity. Cage's project thus produced a chicken-and-egg situation with regard to teleology: one could say that the need for the subjectivity and the ultimate piece of music *for* that subjectivity were created at one and the same time. And yet, Cage's compositional refinements continued.

While *4′33″* remains the most well-known and arguably most influential of Cage's composition, it is, in a *formal* sense, far from the most refined of Cage's indeterminate, open-ended works. In addition to the multiple revisions of *4′33″* detailed above, he composed a sequel, *0′00″* that picks up where the original left off.[32] As we saw in Chapter 1, instead of calling for silence and

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[32] Cage also wrote a third piece under the umbrella of *4′33″*, this time as a part of his *Number Pieces* series: *One*^{3} *= 4′33″ (0′00″) + [G clef]* (1989), "for a performer amplifying the sound of an auditorium to

inaction on the part of the performer, *0′00″* asked for the amplification of a disciplined action. Here, the performer is charged with doing something that is clearly meant to be listened to. In this sequel to the silence of 1952, the sounds of the musical work are not only reinstated as the domain of the performer—they are *amplified*. This amplification allows the audience to hear ordinary sounds in an extraordinary way. The extent of the effect is, of course, dependent on the quality of the microphones and the audio system in the performance space, but this amplification acts like an aural magnifying glass. As I describe in Chapter 1, a performance of *0′00″* by a bartender featured the crack of an ice cube in room-temperature rum, the plop of a dash of bitters, and the fizzing of club soda poured from bottle to glass, all projecting outward from the stage in high fidelity. Here, there is no explanation needed: these sounds are loud and ever-present.

The juxtaposition of these two pieces stages one of the key tensions in Cage's output—and, more specifically, in his radically indeterminate compositions. *4′33″* is, given its conspicuous lack of sound, more susceptible to confusion, but is the clearest manifestation of Cagean "silence"; *0′00″* has an obvious source of sound for its musical content, but as such can only implicitly suggest that the ordinary, non-amplified sounds that surround the work could be musical as well. It should be noted that, at the time of *0′00″*'s composition (1962), the then current score for *4′33″* described its premiere, but allowed for the work to "be performed by any instrumentalist or combination of instrumentalists and last any length of time." Both pieces, then, could last any length of time, could

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feedback level." This amplification is yet another way for Cage to make his intentions clear to the audience while maintaining the inaction of the performer(s), as in the 1952 original.

be for any instrument or any means of producing sound, and both used non-musical sound and noise as their content. But for the performer(s), these two works could not have been more different. With a little cutting of corners, they can be reduced to the following instructions: for *4′33″*, do nothing; for *0′00″*, do almost anything at all.

Distributing Subjectivity

John Cage's fame has ensured that the composer and his music have enjoyed—and continue to enjoy—much attention from many different audiences. Cage is a symbolic representative for modern American music in popular press coverage, musicological literature, academic literature across many fields in the humanities and social sciences, college course syllabi, commercial recordings, YouTube videos, and so on. Due to its extremity in concept and its novelty in performance, *4′33″* in particular has long occupied writers, other composers, recording artists, and casual listeners with varying amounts of knowledge of Cage's catalogue or even of modern music in general. With the widespread, multi-media engagement of Cage's work has come a widespread distribution of his music and his ideas. The negations and the (re)definitions of musical conceptualism have been distributed through time and space, reaching many more ears and minds than those present at the work's premiere performance. Insofar as Cage's music functions as a technology for enacting his cultural intervention into musical listening, then this technology and its interventions have been distributed widely as well. The listening subjectivity which Cage attempted to compose for his audiences via this technology and

cultural intervention has the potential to spread across the broad listening and reading publics with exposure to Cage's music and ideas.

In her book *Ubiquitous Listening: Affect, Attention, and Distributed Subjectivity*, Anahid Kassabian argues that the everyday listening habits of a general population already work to forge what she terms distributed subjectivities. This kind of subjectivity is "nonindividual, not simply human" and "takes place across a network of music media."[33] Of course, music must be listened to in order to forge a subjectivity, individual or distributed—but this listening need not embody the sort of idealized listening that music theory and analysis have long implied. Everyday encounters with music playing in coffee shops, retail stores, on television and radio, and so on are instances of what Kassabian terms "ubiquitous listening"—a constant, repetitive reinforcement of identity through what is often an unconscious musical practice. The more often a certain kind of music is heard or discussed, the greater its affective reach and the wider the distribution of subjectivity. The crucial distinction to be made is that distributed subjectivity is emphatically *not* about any one individual vantage point; rather, Kassabian theorizes an irreducible subjectivity constituted by—and distributed across—a network of listeners, composers, performers, works, genres, and styles. This form of distributed subjectivity is especially well suited to the sort of lopsided social situations in musical performance and listening that most often take place in Western culture. Small numbers of performing artists and composers reach much larger audiences, acting as especially dense, originary

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[33] Anahid Kassabian, *Ubiquitous Listening: Affect, Attention, and Distributed Subjectivity* (Berkeley: University of California Press, 2013), xi.

nodes in this music-cultural network. It is precisely this sort of distributed subjectivity which Cage composed through his works of conceptual music, and which is implicated in Peter Osborne's "cultural act of definition."

Kassabian's case studies in *Ubiquitous Listening* include muzak, musicals, and "world music" (as heard in Starbucks), all genres that consist of familiarly musical sounds and organization (or that have been tweaked by producers so that they do).[34] While works of conceptual music are not nearly so *ubiquitous* as popular music, the performances of conceptual music's negations can nevertheless illuminate the influence that shared experience has on the perception of meaning and the understanding of cultural activities like music listening. Take, for instance, the listening subjectivity that Cage composed (or tried to compose) through the silence of *4′33″*. This subjectivity is not individual—it's meant for no one person. There were undoubtedly friends of Cage's at the premiere who had spoken to the composer about his silent work, and who "knew how to listen"; *4′33″* failed at its premiere, however, because the audience as a whole did not. In other words, the kind of *shared* knowledge, understanding, and experience that accompanies widespread and frequent practice of a cultural activity like listening was plainly lacking. The sounds surrounding Tudor's performance were rendered as unintelligible silence, joined by the sounds of others talking and walking out. Nevertheless, with each performance, recording, and review—with each *association* between

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[34] Kassabian, *Ubiquitous Listening*, 84 (which is the start of her sixth chapter, "Would You Like Some World Music with Your Latte?").

composer, music, and listener—the reach of Cage's composed, distributed subjectivity renews, refreshes, and expands.

This sharing, distribution, and association at the cultural level makes the analysis of conceptual music challenging, but it is this cultural level that allows conceptual music to do its own analytical work. Conceptual art is "art about the *cultural* act of definition"—not definition in the mind of an individual, but a shared, distributed activity, made up of a network of people, places, and things. Kassabian's metaphorical reference to distributed computing can be useful in clarifying this distinction: the cultural interventions of conceptual music cannot be made by any one individual, just as a single processor—no matter how powerful—cannot support the World Wide Web; this is not due to its massiveness or complexity, but rather to its distributed nature. It is only with a network constituted by many individual actors that this kind of computation can be done; and it is only through the shared rhythmic forms of concert attendance, musical listening, reading, and so on that the cultural interventions of conceptualism can take hold in the listening cultures of modern music.

Motivated by both positive and negative influences in his personal and professional life, John Cage swerved with regard to his compositional technique in both the way he composed musical sound and in the way that he began to compose a listening subjectivity. His is the most well-worn narrative of experimental composition, in part because of his charismatic character and in part because of the extremity and novelty of his music. Cage's is, however, only one example of a musical conceptualism wherein cultural intervention, technology, sound, music, and a distributed listening subjectivity were at stake. As evidenced by the interweaving intellectual exchanges charted in the first chapter of this dissertation, the ideas that drove these facets of Cage's compositional career also

seeped into the communities of practice which populated modern music. The history of experimental music is one of remarkably similar ideas and remarkably different sounding results. Among the most well-known of these composers at the forefront of conceptual music, and at the center of the following chapter, are American minimalist Steve Reich and French composer of *musique concrète* Pierre Schaeffer. Their relationships to performers, listeners, technology, sound, and music are, in many ways, radically different than Cage's. In other ways, however, they are more similar in their ideological orientation than they might first appear. Conceptualism's cultural interventions continue to take place through technologies, even if and when the technologies sound quite different.

Chapter 3: Machines, Music, and Minimalism

The repetition that characterizes musical minimalism sets it apart from most other genres of modern music. American minimalism's pulsing rhythms, familiar harmonies, and repetition of short musical segments represented a sharp divergence from European schools of modern composition, which sought to avoid repetition and pitch-centricity as matters of principle. Nonetheless, just as developing variation and dodecaphonic technique were compositional devices with both aesthetic and philosophical implications, minimalism's repetition could also function as far more than a characteristic marker of musical genre. Avant-garde musicians of all ilks sought to make interventions into the cultural norms and practices of the classical tradition. Invariably, these musicians sought to make these interventions through some technical means, whether new compositional techniques or the adoption of new technologies. For composers of musical minimalism, the degree and kind of repetition derived from sound recording technology was a technical means of engaging alternative listening practices and exploring the relationships between sound, listening, and the medium of music.

Inspired by prominent figures in European experimental music such as Karlheinz Stockhausen and Luciano Berio, many American minimalist composers conducted their early musical experiments through the playful exploration and creative repurposing of sound recording and production technologies. Of the many affordances these technologies offered to the creation and recreation musical sound, one of particular significance was a distinctively mechanical degree and

kind of literal sonic repetition. Although such repetition is now minimalism's most recognizable aesthetic quality, this extreme repetition was also the primary techn(olog)ical means through which its composers experimented with compositional process, formal design, and sonic material, effecting new and different perceptions of musical sound. Phonographs and tape machines allowed for a greater material manipulation of sound than previously possible; by this very virtue, these machines made even greater interventions into the cultural norms and practices of classical music possible as well. Musical minimalism was in this sense more closely aligned with John Cage than it might have sounded, or than its composers might have admitted. Disparate aesthetic ideals notwithstanding, a concern with cultural intervention drove each to employ repetition (in the case of minimalism) or indeterminacy and chance (in the case of Cage and his cohort) as important technical means of analyzing the fundamental concepts of musical sound and organization.

This chapter is about the role of sound recording technologies—and the degrees and kinds of repetition they afforded—as conceptual and material catalysts for two very different-sounding genres of experimental music. To provide a frame for the discussion of these genres, I first revisit the painting and sculpture of 1960s American minimalism, a body of work in which consistent aesthetic qualities analogous to those of musical minimalism gave rise to a robust conceptualism and the "dematerialization" of the art object. The critical reception of these works and their artists' ideas will help to show how repetition came to be a viable technical means by which musical minimalists made their cultural interventions. The use of technological repetition in experimental music was not, however, limited to minimalism. In the second part of this chapter, I explore the origins of Pierre Schaeffer's *musique concrète* in the visual arts and how the repetition of closed-groove phonograph records gave rise to his germinal concept of the "sound object." A decade or so prior to the advent of

a repetitive musical minimalism, Schaeffer used technological repetition to engage alternative listening practices and to develop theories of sound, listening, and music somewhat similar to Cage's, but by different technological means. Finally, in the third part of the chapter, I bridge the apparent aesthetic gaps between *musique concrète* and musical minimalism to consider the similarities between Schaeffer's work with phonographs and Steve Reich's work with magnetic tape. The role of repetition in each respective genre of experimental music—and the championing of Schaeffer by the field of sound studies—provide further theoretical links between *musique concrète*, minimalism, and the cultural interventions of musical conceptualism.

Minimal Art and Minimal Music

American minimalism in 1960s painting and sculpture, as practiced by artists such as Frank Stella, Tony Smith, and Carl Andre, almost immediately produced a "post-minimalism." This distinction was a means of categorizing a group of artists and their works, many of which were, on the one hand, stylistically similar—straight lines, flat planes, solid colors, and smooth surfaces were in abundance, and these objects were often large. On the other hand, the conceptual concerns underpinning this (post)minimal aesthetic could appear to be quite disparate. Generally speaking, avant-garde artists of downtown New York City had been interested in material objects, processes and ideas, and non-representative or self-referential figures and forms. Robert Morris's *Box with the Sound of Its Own Making* (1961), to take a classic example, is a work of sculpture that foregrounds its own mundane objecthood and material production via sound. As the wooden box sits motionless in front of the

viewer—a familiar sight to anyone who's taken a shop class—an audio recording of Morris building the box emanates from within the box itself.[1] The time and space of the art gallery are preceded and expanded as the origins of this odd little box are brought into sonic focus. Other artists within the same milieu, however, sought to de-emphasize material objects and focus instead on abstracted thought. Joseph Kosuth's *Five Words in Orange Neon* (1965 [Fig. 3]), for instance, describes itself as language, number, color, and element in both its title and its form. This work of "concept art" is meant to transcend its sheer material by and through language, which isolates the idea behind the physical artwork as a conceptual artwork in and of itself.

[1] A cell-phone video recording by Vimeo user Richard Hoagland of Morris's box on display at the Seattle Art Museum as part of the exhibition "Big Picture: Art After 1945" can be seen here: https://vimeo.com/261904449, accessed January 3, 2019.

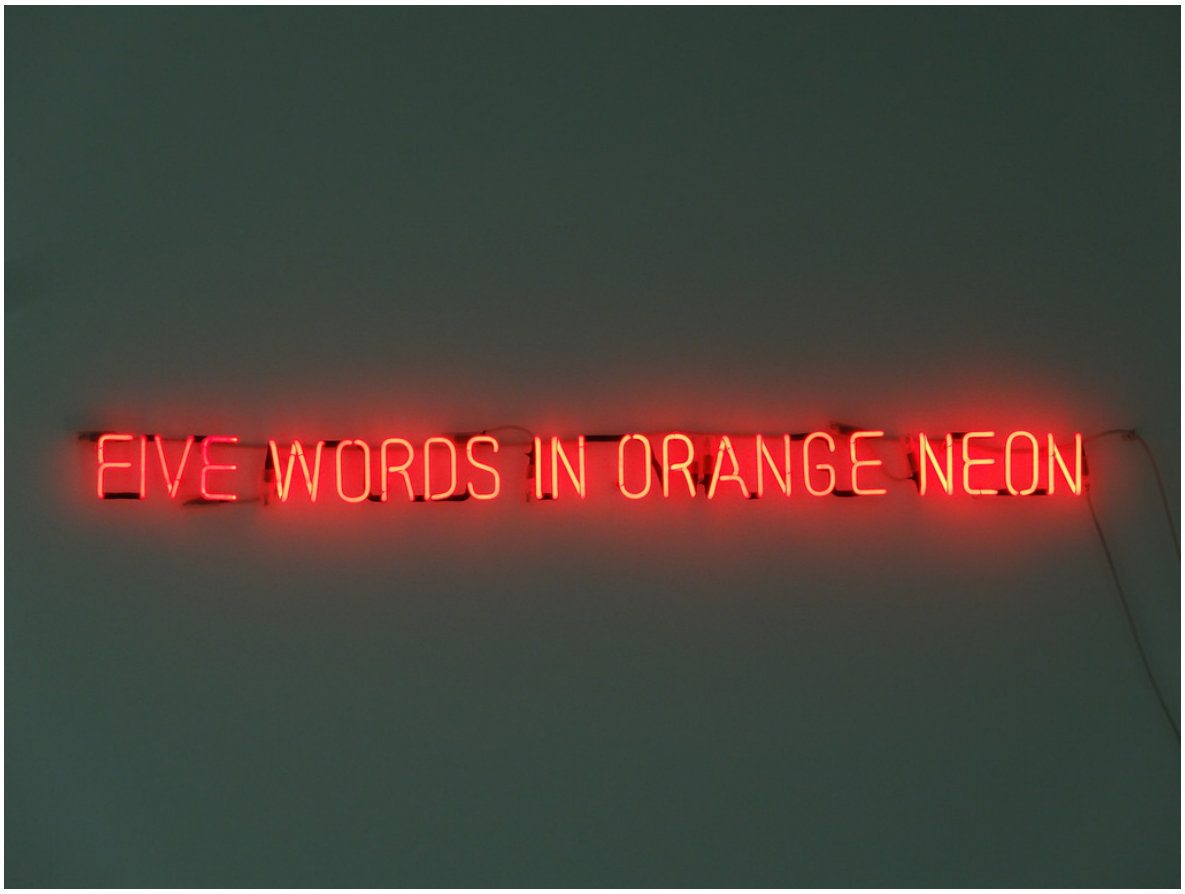

Fig. 3: Joseph Kosuth's *Five Words in Orange Neon* (1965) [photo by valdosilasol, accessed July 31, 2019: https://www.flickr.com/photos/25833968@N06/15085816292]

Both Morris's and Kosuth's sculptures are self-referential, but whereas Morris's box grounds itself in perceptible process and material product, Kosuth's unmoors itself from its physical form by foregrounding its tautological confluences of (self-)representation. In a manner of speaking, the difference between the two is that Morris's work demanded to be seen and heard; Kosuth's, on the other hand, could be thought. From a certain historical perspective, Morris's aligned with a

"literalist" minimalism which embraced its object;[2] Kosuth's concept-work had already diverged into a "dematerialized" form of post-minimalist art.[3]

According to Rosalind Krauss, however, this paradigmatic divergence was more a critical fabrication than a productive distinction. Notions of "dematerialization" and a discrete "post-minimalism" proved too simplistic and too overblown to differentiate with satisfactory fidelity between schools of thought, individual artists, or works of 1960s art.[4] For her, a more common-sense notion prevails: while some artists might have aspired to immateriality in their artworks, those artworks invariably took on some form of material presentation. Likewise, works of conceptual or "concept" art inevitably rely upon their objective material medium. Distinctions between artists and artworks of different ideological positions are useful—especially within the densely populated divisions between minimalism and its subsequent postminimalism—but only insofar as these distinctions provide a foil for what is a faulty opposition between the conceptual and the perceptual. Kosuth's *Five Words in Orange Neon* is a case in point.

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2 "Literalist art" as a term derives from Michael Fried's infamous 1967 *Artforum* piece, "Art and Objecthood," wherein he denies literalism/minimalism the status of art by likening it to a "theatre … [which] is now the negation of art." Michael Fried, "Art and Objecthood," *Artforum* 5, vol. 10 (Summer 1967): 12–23; for a succinct summary of the basis of Fried's literalism in medium and material—plus the positions of Stanley Cavell and Clement Greenberg in all of this—see Rosalind Krauss, "Two Moments from the Post-Medium Condition," *October* 116 (Spring 2006): 55–56.

3 Lucy R. Lippard and John Chandler castigated what they called the "emotional/intuitive" means of producing art of past decades as "anti-intellectual"; the solution, it seemed to them, was to liberate the idea from the object and to embrace a fully dematerialized form of art. Lucy Lippard and John Chandler, "The Dematerialization of Art," *Art International* 12 (1968): 31–37.

4 Rosalind Krauss, "Sense and Sensibility: Reflection on Post 1960s Sculpture," *Artforum* 12, no. 3 (November 1973): 42–53; and, for a thoughtful discussion of the overlaps of literalism, minimalism, and constructivism in the late 1950s and early 1960s work of Frank Stella and Carl Andre, see Maria Gough, "Frank Stella is a Constructivist," *October* 119 (Winter 2007): 94–120.

The multi-dimensional self-referentiality of *Five Words in Orange Neon* surely outstrips the sheer sensorial appearance of the work. The interest of the piece is not so much the look of bent orange neon tubes, but rather the sort of meaning which results from these tubes having been bent into the shape of a sign. This sign says something about itself, but the idea behind Kosuth's electric sign—the idea which is not itself signified, but which emerges along with awareness of the process of signification—depends upon on the physical form and properties of the sign itself. Its material does not disappear so much as it dislocates itself from its ordinary role in sculpture. Kosuth's work does not minimize its material medium; rather, its material qualities clarify the direct effects of the perceptual upon the conceptual.

At the same time, Morris's *Box With the Sound of Its Own Making* is by no means confined to the material which it so vividly foregrounds; the stationary work engages dimensions of time and space by crossing the senses of seeing and hearing (the latter explicitly pointing toward a species of temporal unfolding more typically associated with mediums such as music). As the mundane visual object emits sound, its sounds project images of sawing and knocking back onto the blank box. These and other works of 1960s conceptual art are thus irreducible to generalities about form, material, or concept. Hard and fast distinctions between minimalism and post-minimalism—or between literalist and dematerialized art—were, as Krauss argued, something of a critical contrivance. The relationships

between the artist, the material object, and the viewing, listening, and thinking subject were the crux of a pluralistic conceptual art, and no party among them could or should be eliminated entirely.[5]

Composers of 1960s American minimal music had many of the same interests and concerns as did minimalist conceptual artists: material objects, processes and ideas, and the non-representation or non-expression of musical sound. So too was minimal music pluralistic in its experimentation upon the relationships between composer, sounding music, and the viewing, listening, and thinking subject. The four canonical musical minimalists—Steve Reich, Terry Riley, Philip Glass, and La Monte Young[6]—shared friendships, mentorships, and partnerships within many of the same downtown-New York communities of practice as the painters and sculptors of 1960s conceptual art. And, indeed, their musical minimalism was no more unified either aesthetically or ideologically than was their counterparts' visual minimalism. Although their music shared certain stylistic features, their varied approaches to composition betrayed markedly different conceptual concerns and technical means of addressing them. Repetition in particular plays a prominent role in most if not all of the

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5 I should note that even Lippard and Chandler admitted as much: "Dematerialized art is post-aesthetic only in its increasingly non-visual *emphases* [emphasis added]." (Lippard and Chandler, "Dematerialization," 33.) And if one wanted to read more rejection of "dematerialization" and "post-minimalism," one could see Art & Language's, "Voices Off: Reflections on Conceptual Art," *Critical Inquiry* 33, no. 1 (Autumn 2006): especially note 1 on page 14, which is itself a retort to Hal Foster, Rosalind Krauss, Yve-Alain Bois, and Benjamin H.D. Buchloh, *Art Since 1900* (New York: Thames & Hudson, 2004).

6 The degree to which the history of musical minimalism has been dominated by these four composers is evident in the covers of two influential books, upon which their names emblazoned: Keith Potter, *Four Musical Minimalists: La Monte Young, Terry Riley, Steve Reich, Philip Glass* (New York: Cambridge University Press, 2002) and, before him, Wim Mertens, *American Minimal Music* (London: Kahn & Averill, 1988).

classic representative works of musical minimalism, and yet repetition as a technique of musical composition is a site of great aesthetic and conceptual divergence among minimalism's practitioners.

The origin story of how repetition became a unifying aesthetic marker for musical minimalism takes several forms. Oral histories of minimalism tend to attribute repetition to more mundane, pragmatic causes. In a well-known story, Reich claims that he suggested using a continuous eighth-note pulse on the marimba during rehearsals of Terry Riley's *In C* as a means of keeping the ensemble together in time. Thus, what started as a logistical solution went on to become a central stylistic technique of musical minimalism, especially in Reich's own instrumental music. For musicologist Robert Fink, on the other hand, the characteristic repetition of musical minimalism is "inseparable from the colorful repetitive excess of postindustrial, mass-mediated consumer society."[7] From this cultural-historical perspective, the mid-century proliferation of technology and commercial media in Europe and the United States had shaped a cultural consciousness in which series, systems, and statistics emerged as both a positive and negative influence on creative ethics and aesthetics, and repetition was one way of representing this phenomenon in musical form.[8] From a cognitive perspective, recent research on the perception of musical sound also suggests that repetition can bridge gaps between micro-, meso-, and macro-level timescales, such that a listener might conjure a clearer image of sonic objects and, perhaps, of musical processes.[9] Each of these views of repetition in

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7 Robert Fink, *Repeating Ourselves: American Minimal Music as Cultural Practice* (Berkeley: University of California Press, 2005), x.

8 See Paul Hillier's introduction to Steve Reich, *Writings on Music, 1965–2000*, edited by Paul Hillier (New York: Oxford University Press, 2004), 14.

9 Rolf Inge Godøy, "Images of Sonic Objects," *Organised Sound* 15, no. 1 (2010): 54–62; Elizabeth Margulis, *On Repeat: How Music Plays the Mind* (New York: Oxford University Press, 2014).

music—and, more specifically, in musical minimalism—may partly explain why and how repetition played such a prominent role in shaping the form and content of this branch of 1960s experimental music. Whatever the combination of conscious organization, cognitive affordance, or cultural origin, the degree of repetition in the aesthetics of musical minimalism implicates its perceptual qualities in conceptual and political concerns. Indeed, repetition binds the conceptual concerns of musical minimalism to the formal organization of its constituent works, and it is this binding relationship which draws out the efficacy of formal musical analysis.

Steve Reich's music in particular has enjoyed robust formal analytical treatment: for example, Richard Cohn and John Roeder have employed beat-class analysis to show the rhythmic and metric intricacies introduced by Reich's repetition and phase relations in his instrumental music,[10] and Ian Quinn extended contour theory to account for the fuzzy similarities between the slightly varied melodic patterns in *The Desert Music* (1983).[11] It bears mention, however, that these analyses take place in and around the system of musical notation. Post-1945, composers interested in innovating beyond the vestiges of the European classical tradition found myriad ways of doing so, almost all of them having to do with a reorientation of the compositional process and of their composed musical objects. While some of these objects can be notated—and are readily analyzed via formal music-

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[10] Richard Cohn focuses on *Violin Phase* (1967) and *Phase Patterns* (1970) in "Transpositional Combinations of Beat-Class Sets in Steve Reich's Phase-Shifting Music," *Perspectives of New Music* 30, no. 2 (Summer 1992): 146–77; John Roeder analyzes *Six Pianos* (1973), *New York Counterpoint* (1985), and *The Four Sections* (1987) in "Beat-Class Modulation in Steve Reich's Music," *Music Theory Spectrum* 25, no. 2 (Fall 2003): 275–304.

[11] Ian Quinn, "Fuzzy Extensions to the Theory of Contour," *Music Theory Spectrum* 19, no. 2 (October 1997): 232–63.

theoretical methods—many of the most conceptually rich and sonically salient aspects of musical minimalism fail to appear as such in notational transcription. American minimalism's changing relationship to musical objects—notated or otherwise—was spurred by the advent of sound production and recording technologies. Synthesizers and oscillators, amplifiers and reverb units, and loops and reels of magnetic tape figure prominently in many of the most recognized works of musical minimalism.[12] Recordings in particular brought new capacities for the introduction of novel sounds to experimental composition. Minimalism' changing relationship to its technologies thus directly influenced the changing relationship to its constituent musical objects, and to its objects of analysis.

The sonic repetition of musical minimalism belongs to the temporal dimension of sound and to the durational experience of listening. In notation, however, the temporal experience of such repetition can be circumvented via graphical representation. All eighteen minutes of Philip Glass's *Two Pages* (1968), for example, can be seen in an instant. What's more, some of the most sonically salient qualities of Glass's music—and musical minimalism writ large—engage the viewing, listening, and thinking subject through psychoacoustics and the experience of listening through repetition at great length, the effects of which are not at all obvious in notation. Glass's piece (originally titled *Two Pages for Steve Reich*), begins with the incessant repetition of a short, five-note rising melodic pattern. Playing this pattern several dozen times through allows the five-eighth-note cell to lull the listener into a sense of metric regularity, and to establish rhythmic, melodic relationships between the

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[12] For a discussion of how important the image of technology was to the performance of minimalism, see Joseph Auner, "Reich on Tape: The Performance of *Violin Phase*," *Twentieth-Century Music* 14, no. 1 (2017): 77–92.

pattern's five pitches in their rapid repetition. Suddenly, the repeated five-note melodic cell is joined by a truncated version of itself, and the original five-note cell now alternates with a four-note version. Metric regularity becomes irregularity, and the interplay of musical voices is disrupted. No sooner than one reacquaints oneself with the sounds of *Two Pages*, a three-note truncation is worked into the rotation. This dizzying process—so much easier to keep track of visually than aurally—is notationally simple yet musically complex. Glass's metric disruption asks the listener to entrain and re-entrain as downbeats shifts in eighth-note increments. The process continues in varied form throughout the composition, keeping the listener off balance by negating the metrical stability of traditional music (or of Reich's music, for that matter).

Music such as this asks for a different analytical methodology, one that can shed light on the greater implications of conceptual music beyond traditional music-theoretical formalism, and more recent work on Reich's early music has taken a decidedly more critical position with regard to his compositional practice. His use of tape machines in the 1960s led to his arrangement of repetitive patterns and processes in his later instrumental music; his early tape works *It's Gonna Rain* (1965) and *Come Out* 1966), however, introduced the non-musical sounds of speech into the realm of musical composition to both acclaim and controversy. Reich's technological and compositional mediation of Brother Walter and Daniel Hamm's voices has prompted analyses by Martin Scherzinger, Sumanth Gopinath, Siarhei Biareishyk, and Marcelle Pierson, who raise critical

questions regarding subjectivity, voice, and politics in Reich's music for tape.[13] From this perspective, the objects of formal analysis—such as the transcribed melodies of speaking voices—and the emphasis on listening and psychoacoustics in Reich's own rhetoric threaten to overtake and obstruct the human subjects of his musical process. Reich's status in musical history is conflicted: while he remains an influential and innovative experimental composer, he is also one who attained this status early on by subjecting the voices of black men to supposedly impersonal musical processes. From both formal and critical analytical perspectives, his experimental contributions to 1960s American minimalism and his de(con)struction of Walter's and Hamm's voices into musical sound were both enabled by the technological affordance of repetition. In Chapter 4, I will discuss the powerful effects of repetition in Reich's phasing music; for now, I want to shift attention to the role of repetition in other musical contexts.

Repetition and technologically mediated processes were not original to Steve Reich. In fact, many of the central concerns of Reich's process-based approach to musical composition and listening were prefigured in Paris in the 1950s. For more than a decade prior to 1960s minimalism, French composer Pierre Schaeffer had been using recording technology and repetition to isolate sonic objects and to facilitate his theorization of the genre of *musique concrète*—a non-representational genre of

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[13] Martin Scherzinger, "Curious Intersections, Uncommon Magic: Steve Reich's *It's Gonna Rain*," *Current Musicology* 79 & 80 (2005): 207–44; Sumanth Gopinath, "The Problem of the Political in Steve Reich's *Come Out*," in *Sound Commitments: Avant-Garde Music and the Sixties*, edited by Robert Adlington (New York: Oxford University Press, 2009): 121–44; Siarhei Biareishyk, "Come Out to Show the Split Subject: Steve Reich, Whiteness, and the Avant-Garde," *Current Musicology* 93, no. 2 (Spring 2012): 73–93; Marcelle Pierson, "Voice, Technê, and *Jouissance* in *Music for 18 Musicians*," *Twentieth-Century Music* 13, no. 1 (2016): 25–52.

music which expanded the domain of musical sound past the instrumental and notational technologies of the Western classical tradition. Phonographs and records were able to capture and reproduce sounds at varying speeds, volumes, and could repeat them indefinitely. To be sure, Reich's minimalism and Schaeffer's concrete music are aesthetically disparate, and their respective uses of repetition as a compositional device illuminate the vast divide between the scientific European laboratory environment led by Schaeffer and the post-war American avant-garde community of practice of which Reich was a part. Nevertheless, their technologically mediated experimentations upon sonic and material objects, musical processes and ideas, and the viewing, listening, and thinking subject place them into a productive historical dialogue with one another as well as their contemporary interlocutors in the visual arts. Most importantly for the present chapter, the theories of sound and listening that have emerged around Schaeffer's *musique concrète* can be of help in analyzing the interrelationships between the perceptual, the conceptual, the technological, and the political in Reich's music. In the following two sections of this chapter I will consider Schaeffer's and Reich's uses of technologies and repetitive process to illuminate the connections and the theoretical-historical dialogue between their two idiosyncratic positions. While nested in historical particulars, this dialogue can also speak more broadly to the role of technology as a conceptual and material catalyst for musical experimentalism and subsequent music theory and analysis.

Pierre Schaeffer and *l'objet sonore*

In the late 1930s in Paris, France, telecommunications engineer–turned–radio technician Pierre Schaeffer began to experiment with sound using phonographs, records, and turntables.[14] These machines belonged to the Radiodiffusion Française studios and, as such, they were regularly reserved for the reproduction of speech and music over the airwaves. Schaeffer, however, repurposed these technologies for a number of different applications: discovery, analysis, synthesis, theory,[15] and—albeit in a novel way—musical composition. The machines at his disposal could record sounds and play them back, but they could also slow sounds down, speed them up, play them backward, and splice them together. These transformations offered new ways of listening to and organizing sound. In short, the radio industry's technologies made new musical ideas thinkable and audible.[16]

Schaeffer's experiments escalated through the 1940s and 50s as he worked collaboratively with Pierre Henry and other similar-minded engineers, technicians, composers, and artists. In 1951, with the support of the French Radio Institution, he founded the *Groupe de Recherche de Musique Concrète* to pursue the possibility of a non-representational music made up of ordinary sounds.[17] The

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14 Francis Dhomont, "Schaeffer, Pierre," (2001) in *Grove Music Online*, accessed December 4, 2018: http://www.oxfordmusiconline.com.proxy.uchicago.edu/grovemusic/view/10.1093/gmo/9781561592630.001.0001/omo-9781561592630-e-0000024734.

15 Pierre Schaeffer, *Treatise on Musical Objects*, translated by Christine North and John Dack (Berkeley: University of California Press, 2017).

16 Jennifer Iverson, *Electronic Inspirations: Technologies of the Cold War Musical Avant-Garde* (New York: Oxford University Press, 2019), 15.

17 Dhomont, "Schaeffer."

group followed similar collectives of French artists who had gathered under the heading of *Art Concret* and had produced a number of non-representational works of painting and sculpture.[18] Their "concrete art" of planes and colors (such as Theo van Doesburg's *Arithmetic Composition* [1930], shown in Figure 4) was meant to have originated in the mind rather than the natural world. Their movement thus sought to take a step beyond abstract art, which still offered an (albeit approximate) representation of existent physical forms.

Their short manifesto included dicta for works of concrete art that tied meaning and representation to formal composition:

> The painting should be constructed entirely from purely plastic elements, that is to say planes and colors. A pictorial element has no other significance than itself and consequently the painting possesses no other significance than itself.[19]

Creators of *art concret* would paint and sculpt geometric shapes, solid colors, and straight lines using many of the same tools and techniques of traditional representational art. They distinguished themselves not through their methods or materials *per se*, but through form and (non)figuration. In other words, what made concrete art distinct was not the working process but the form of the finished product.

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[18] "Concrete art" (2003) in Grove Art Online, accessed December 4, 2018: http://www.oxfordartonline.com.proxy.uchicago.edu/groveart/view/10.1093/gao/9781884446054.001.0001/oao-9781884446054-e-7000018994.

[19] Doesburg, Carlsund, Hélion, and Tutundjian, "The Basis of Concrete Art," *Art Concret* (April 1930).

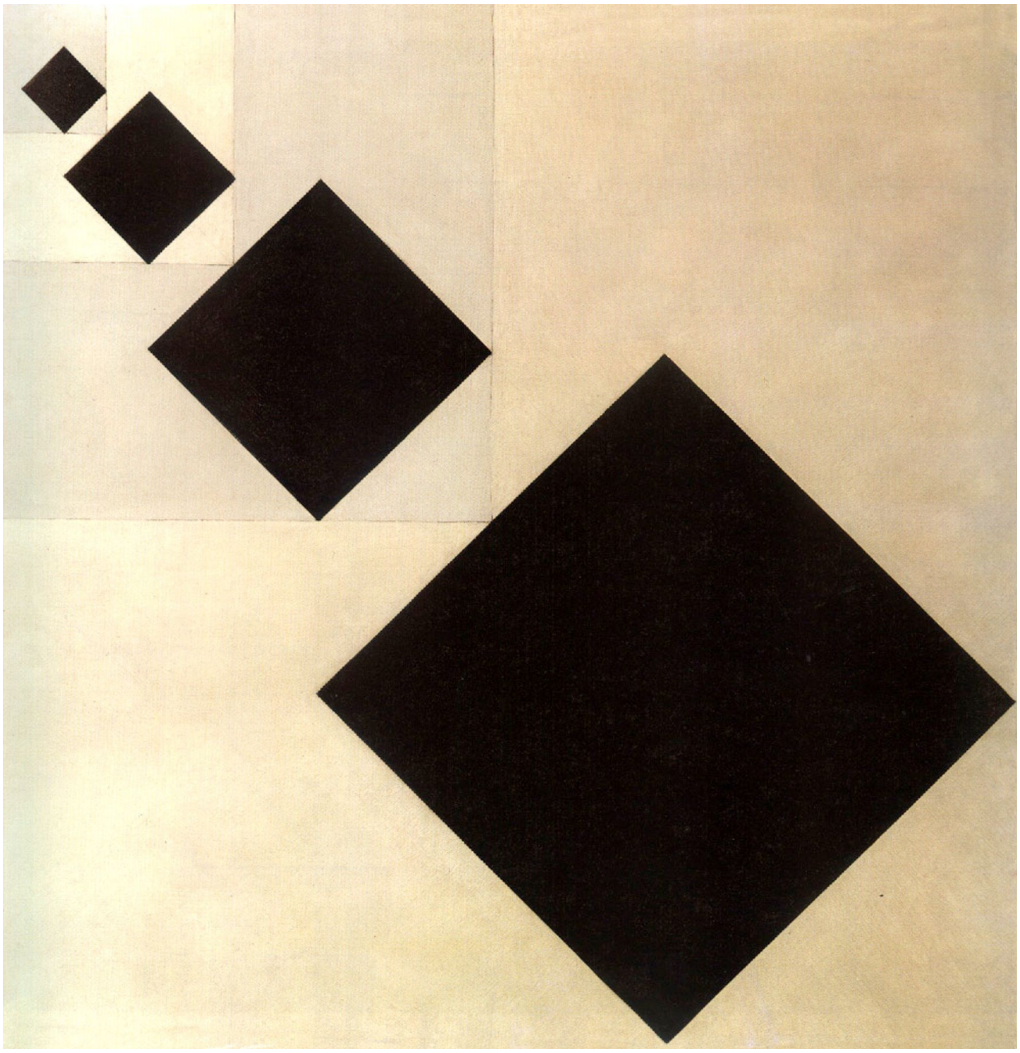

Fig. 4: Theo van Doesburg's *Arithmetic Composition* (1930) [photo by RasMarley, accessed July 31, 2019: https://www.flickr.com/photos/32357038@N08/4215962115]

Schaeffer, Henry, and their colleagues would take up much of the same concerns with non-representation in the sonic domain, although sound and the medium of music would necessitate a very different process. The distinct sounds of standard musical instruments were already too steeped in historical and cultural associative meaning. Instruments represented themselves as familiar objects

and, thus, instrumental sound was representational in and of itself.[20] Even ordinary sounding objects like horns, bells, and whistles were too associated with daily life, too attached to contextual, real-world meanings. This material discrepancy highlights a pivotal difference in medium between art and music. Practitioners of *art concret* could emerge from their studios with their work in hand, leaving brushes and tools behind. Viewers might be able to identify brush-strokes and seams, but the artworks stood physically and temporally apart from their production. Composers of *musique concrète*, on the other hand, faced a different set of challenges. Because sound must be maintained by its continuous production, a listener must be within earshot of a sound's source in order to hear it. Sound-making implements cannot be so easily left behind, so a composer of *musique concrète* needed to be able to recreate or at least reproduce sounds within physical and temporal proximity of an audience, all the while maintaining that these sounds were non-representational. There were two keys needed to solve this problem.

First, the condition of hearing a sound without *seeing* its immediate source changes how one *hears* it. The classic example of this phenomenon—and the example from which Schaeffer, Guillaume Apollinaire, Denis Diderot, Jérôme Peignot, and the editors of the Larousse dictionary derived the term—is Pythagoras's use of a curtain or a screen to separate himself and his voice from his

[20] Emily Dolan's discussion of Logic Pro and the (im)materiality of instruments and their sounds nicely describes the historicity of musical instruments and the ways that they accrue "cultural resonance," "life histories," and "multifaceted and changeable personalities." John Tresch and Emily I. Dolan, "Toward a New Organology: Instruments of Music and Science," *Osiris* 28, no. 1 (January 2013): 279–80.

uninitiated students, or *akousmatikoi*.[21] The *acousmatique* or "acousmatic" thus describes the condition of hearing a sound with its source hidden from view. The result, for both Pythagoras and Schaeffer, was that the listener heard these acousmatic sounds differently; more to the point, Schaeffer considered this mode of perception to be a means of making non-representational music possible. The screen was necessary in Pythagoras's day because, then as now, sounds require an active source. In this case, the source was Pythagoras and his voice, and the only way to hear his voice was to be in his presence. The screen was a technological solution to a Pythagorean perceptual problem, pointing toward the second key to solving the problem of *musique concrète*: technology. With the advent of phonograph recording, significant physical limitations on acousmatic musical performance were lifted. Sound requires a present source, but that source could be a phonograph or loudspeaker rather than a "live" performance behind a screen. Because the phonograph or loudspeaker did not resemble the original source of the sound, it could also act as its own screen. Composers of concrete music required an entirely different working process than the creators of concrete art—one that focused on form and figuration as well as their means of production. Recording technology was invaluable to this process, as it offered an updated Pythagorean screen that could capture, mediate, transform, and obscure sound sources—thus rendering modern listeners as Schaefferian *akousmatikoi*.

Schaeffer and Henry's project of *musique concrète* was thus dependent upon and enabled by the technological transformation of sound. These technologies, though, obscured more than their

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[21] For a thorough account of the history and the "key myth" that accompanies the term "acousmatic" and its application to *musique concrète*, see Brian Kane, *Sound Unseen* (New York: Oxford University Press, 2014), 46–50.

original sound sources. Although Schaeffer's group was a highly collaborative environment, Jennifer Iverson has noted that many of the collaborations in and around such mid-century laboratories and studios were rendered invisible by interpersonal power dynamics and by the traditional single-authorship of musical composition.[22] The distribution of responsibility and credit were often quite uneven, and the conditions in which compositions were produced are often misrepresented. Beyond these human relationships, there were also collaborations that were not, strictly speaking, inter*personal*. These collaborations, such as they were, took place between humans and machines—that is, between composers and the technologies they used. The influence of machine on man might be termed a "collaboration" to the extent that one is willing to ascribe agency to non-human actors. Nonetheless, whether one says that machines acted upon Schaeffer or whether Schaeffer acted through machines, the technologies at his disposal afforded new ways of thinking about musical sound and organization.

Years of laboratory collaboration between Schaeffer, Henry, and their colleagues yielded a catalogue of recordings, musical compositions, and freshly formulated ideas of what constituted musical sound and how it could be organized. By the 1950s, the group had developed a philosophy of music built on germinal ideas like *l'objet sonore*. The meaning of the "sound object" changed over time, from the physical thing that produced a sound to the audible sound wrested from its source via

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[22] See Jennifer Iverson's discussion of *Morgenröte*, unofficial "piece zero" of the Westdeutscher Rundfunk studio in Cologne: Jennifer Iverson, "Invisible Collaborations: The Dawn and Evolution of *elektronische Musik*," *Music Theory Spectrum* 39, no. 2 (Fall 2017): 205–09.

recording and repetition.[23] In either version, the concept of the unseen sound object was essential to Schaeffer's *musique concrète*. Its essentialness is reflected in its name: a sound, on the one hand, is an ephemeral thing; an object, on the other hand, usually refers to a physical thing that maintains its material form far longer than any sound.[24] This seemingly oxymoronic relationship also ties "music" to "concrete": on the one hand, the genre belongs to the most powerfully expressive of art forms; on the other, it is constituted by the utterly mundane. These apparent oppositions at the heart of Schaeffer's musical project point directly toward some of the fundamental differences in medium between art and music, but also to ways in which technology made possible a conceptual confluence between these media and between movements such as *art concret* and *musique concrète*.

The sound object owes its double status to the technologies at Schaeffer's disposal. In order to hear a sound object (again), that sound must be produced by a source (again). As an engineer, broadcaster, and composer, Schaeffer had for years worked extensively with machines eminently capable of repeating sounds—at different speeds, any number of times, and for any length of time. The sound object needed this supernatural type of repetition in order to come into existence and to remain in existence. It is no coincidence, then, that it emerged from a studio full of equipment that could record and repeat sounds. Emergent technologies allowed for an updated Pythagorean screen

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[23] Kane, *Sound Unseen*, 17.

[24] Michael Fried's notion of "objecthood" as opposed to an artwork hinges upon the distinction between "presence" and "presentness." For him, an artwork has a presentness to it, which is evident in its instantaneousness in availability for interpretation, meaning, and import. Once the viewer looks away, however, that work ceases to exist until it is seen again. Presence, on the other hand, is a quality of massive objects such as Tony Smith's *Die* (1962), which follows the viewer around the room, lurking and looming in a way that the content of a representational painting cannot: Michael Fried, "Art and Objecthood," *Artforum* 5, vol. 10 (Summer 1967): 12–23.

and aided the medium of music in transcending its physical and temporal constraints. While the sound object itself was not a coincidental or accidental discovery, *per se*, neither was it produced within the normal functional parameters of its technology.

Records were meant to reproduce sound in long form; the sound object, however, constituted something of a short-form misuse of the technology. James A. Steintrager explains this repurposing of technology in the introduction to his translation of Michel Chion's treatise on *Sound*:

> The "sound object" was early on epitomized in what otherwise might seem a technical malfunction: a phonographic stylus tracing not an ever-tighter spiral but a circle, stuck in a closed groove and thus repeatedly reproducing the sonic information impressed on the format.[25]

For Schaeffer, the *sillon fermé*, closed-groove, or locked-groove record was not a malfunction at all; rather, it was an alternative function that turned records into a technology for the controlled repetition of sounds. And it was this repetition that engendered new and different ways of listening to sounds. The single groove could last only a few seconds, making the same sound repeatable *ad nauseum* and available to different thresholds of short-term memory and aural scrutiny. The alternative function of closed-groove records thus turned the phonograph from a technology for replaying sounds into a technology for producing new and different ways of listening to sound. Brian Kane likens this different way of listening to short, repetitive sounds to semantic satiation,[26] the

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[25] Michel Chion, *Sound: An Acoulogical Treatise*, translated by James A. Steintrager (Durham: Duke University Press, 2016), xii.

[26] Margulis, *On Repeat*, 15–19.

psychological-perceptual phenomenon in which repetition causes a word to temporarily lose meaning for the listener:

> The locked-groove recording or tape loop, like a word spoken over and over again, halts the flow of signification and promotes, through repetition, the hearing of sounds *as such*.[27]

The hearing of sounds *as such* was the crux of what Schaeffer called "reduced listening." And reduced listening, which obscures the real-world representational meaning of sound in favor of its sheer sonic qualities, was crucial to the genre of *musique concrète*. The acousmatizing screen of closed-groove records enacted a degree of repetition that afforded reduced listening and foregrounded the repeated sounds as such. Technological mediation, then, was both a conceptual and material catalyst that provided a necessary modern update to the acousmatic screen. But not all sound acousmatized by closed-groove records is musical sound—or is it?

Music is made up of sound, this much is clear; but music is typically held above or apart from ordinary sound, and the distinction usually has something to do with listening for the qualities of sounds, rather than attending to their real-world meaning. That is, real-world sounds are made by real-world things, and some of these things may require urgent attention and action on the part of the listener. Musical sounds, on the other hand, do not typically attach to such real-world exigencies—their urgency is only ever musical in nature. Even when they mean something dire, this

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[27] Kane, *Sound Unseen*, 26.

meaning only applies within a fundamentally musical world. Of course, musical-world meaning is often produced via signification or metaphorical representation of real-world things. Whether a staging of an opera whose characters fear death or a purely instrumental portrayal of a similarly dramatic program, music derives its meaning via a nuanced metaphorical representation capable of taking on any number extra-musical things, feelings, and gestures.[28] In this light, the conundrums of *musique concrète* become most apparent. On the one hand, Schaeffer attempted to wrest technologically mediated real-world sounds from their real-world meaning via acousmatization and repetition; on the other hand, he also attempted to wrest a non-representational musical world from even its metaphorical representations of meaning. This distinct and meaningless sonic/musical world was, in Schaeffer's mind, audible via the practice of "reduced listening." Composers of *musique concrète* would need to find a means of effecting this way of listening, and the "sound object" presented one viable solution. By halting signification and promoting the hearing of sounds as such, Schaeffer's closed-groove records turned from apparent malfunctions into efficacious technologies for producing sound objects and reduced listening.

It bears mention that the sort of listening experience Schaeffer's closed-groove records were meant to elicit seems an awful lot like the experience an ideal Cagean listener is meant to have: a musical appreciation of sounds themselves, free from worldly attachments and the trappings of

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[28] Nicholas Cook explains the function of music as emotionless nuance in "Theorizing Musical Meaning," *Music Theory Spectrum* 23, no. 2 (Fall 2001): 180; Lawrence M. Zbikowski explains the role of metaphor and conceptual models in constructing these forms of meaning in *Conceptualizing Music* (New York: Oxford University Press, 2002), 65–72.

expression, representation, and meaning. That said, these two composers took very different approaches to the interactions of sound, technology, and the listening subject. Cage insisted that all sounds could be music if one knew how to listen. As noted in Chapter 2, his compositional means of isolating this way of listening often took the form of an indeterminate negation of traditionally musical sound—by presenting silence as music, the audience had the opportunity to listen in a Cagean way. This approach could, however, be frustrating for composer and listeners alike, and required a fair amount of explicit instruction on Cage's part. Indeed, many of his writings serve as guides to listening. Schaeffer, on the other hand, used the technologies at his disposal to repeat, splice, and crop sounds until his listeners couldn't help but hear things differently. Whereas Cage's project aspired to a transcendentalist appreciation of music, sound, and noise, Schaeffer's experiments accepted human listening tendencies as the conditions for his experimentation. His approach was thus more scientific than philosophical, couched in the terms of the laboratory rather than Americanized Zen proverbs and parables. From within this laboratory setting, Schaeffer's ideas were not guides for how to listen, but rather theories of listening as it already happened. His theory consisted of four distinct modes of aural perception, each of which is ubiquitous in daily life: 1) *ouïr*, a passive and indiscriminate hearing; 2) *entendre*, an intentional and interested listening; 3) *comprendre*, a gathering of meaning from sounds as communicative signs; and 4) *écouter*, a gathering of information from sounds as indices for other things.[29] These modes of aural perception are not at

[29] For a thorough and helpful explanation of these, see: Brian Kane, "*L'Objet Sonore Maintenant*: Pierre Schaeffer, Sound Objects, and the Phenomenological Reduction," *Organised Sound* 12, no. 1 (April 2007): 18.

all mutually exclusive—they can and do take place in combination with one another depending on the contexts and the purposes of listening. Schaeffer's "reduced listening" was meant to involve only the first two of these four modes—*ouïr* and *entendre*—which involve hearing and listening without attention to representation or the indexing of things beyond sound. In order to listen to *musique concrète* as intended, one must bypass the latter two modes of listening—*comprendre* and *écouter*—which involve signification and real-world meaning.

Cage did not, of course, formalize his thinking in Schaeffer's terms, but one could argue nonetheless that his use of indeterminacy and silence was meant to isolate the sound-centric *ouïr* and *entendre* from the meaningful *comprendre* and *écouter*. Nor were Cage's methods the same as Schaeffer's. Instead of records and turntables, Cage retained many of the traditional forms of classical composition to suggest that sound, noise, and silence belonged within them. These forms and technologies neatly adhere to purposeful historical narratives, in which Schaeffer sought to innovate after and beyond practitioners of *art concret* via technological experimentation at the same time as Cage sought to pick up and continue Schoenberg's expansion of musical harmony as a composer. Although Cage and Schaeffer formulated their thoughts differently, they also developed elaborate theories of listening: indeed, their musical compositions served as opportunities to practice the ways of listening they theorized. Cage aspired to transcend the human: to render both the eye and the I transparent.[30] Schaeffer, by contrast, based his project in the humanly limited, embodied experience of sound. Cage avoided recordings and manipulation of sound; Schaeffer embraced his technologies

[30] Christopher Shultis, *Silencing the Sounded Self* (Boston: Northeastern University Press, 1998), 61–62.

as necessary instruments of experiment. Cage sought to shape the listening subject to sound; Schaeffer sought to shape sound to the listening subject.

As I noted in my first chapter, there are a number of similarities in the rhetoric of Cage and Reich. The sort of comparison between Cage and Schaeffer I have pursued here will continue in the next section of this chapter, but will grow to encompass the similarities between Schaeffer's laboratory experimentation and Reich's discovery on tape machines of musical processes that have shaped the aesthetics and the hermeneutics of musical minimalism.

Steve Reich and Tape

In California in the mid 1960s, American composer Steve Reich began using magnetic tape to experiment with sound. For Reich as for Schaeffer, experiments with sound led to new ways of composing, listening to, and thinking about music. Although his work was defined by a very different set of aesthetic criteria, Reich nonetheless used similar technical—and, indeed, technological—approaches to address similar concerns. Namely, both Reich and Schaeffer were interested in listening and composition as musical practices, and both experimented with the effects of mechanical repetition in and on these practices. In a side-by-side comparison, their experimental results took very different forms with quite different cultural consequences. From a critical perspective grounded in twenty-first-century music theory and sound studies, Schaeffer persists as a fount of fascinating ideas about listening and the nature of sound, while Reich has become a politically problematic figurehead for contemporary composition. It is perhaps all too obvious a point

that their respective roles in popular culture and in contemporary scholarship have emerged from their lasting relationships to sound. Less obvious, though, are the ways in which their relationships to sound are mediated and valanced by a litany of things including performer, instrument, technology, machine, process, music, form, concept, voice, text, and listener. In what follows, I attempt to shed at least some light on each by way of an analysis of Reich's *It's Gonna Rain* for magnetic tape. First, though, it will be helpful to consider the material affordances of tape as a medium for musical composition. These technological affordances help in the following chapter to situate Seth Monahan's theory of music-analytical agent-classes such that music analysis might serve as a foil for Reich's "impersonal" musical hermeneutics and his contributions to a more general technomorphic minimal aesthetics. The medium of magnetic tape and its role as a conceptual and material catalyst in Reich's musical composition established the conditions for Reich's experiments with sound and music, but they also established the conditions in which Reich's appropriation of voice as musical material was cast as technical innovation.

The magnetic tapes used for sound recording are long, thin strips of plastic film coated with iron oxide. Electrical signals originating in microphones or electric pickups are passed to an electromagnetic transducer called a tape head, which then converts these signals into a magnetic current and magnetizes the tape with the current as the tape passes over the head. Recorded tape was wound and stored in reels; when unwound and played back across another electromagnetic tape head, the magnetized film reproduced an electrical signal that was then amplified, and the recorded sounds were audible again. Like other modern recording technologies, magnetic tape and its machines were agnostic with regard to sonic content; as a physical medium, however, tape stood out from its predecessors. Whereas shellac records were rigid and circular, tape was linear and highly

manipulable. The medium's material affordances made the sounds stored on tape highly manipulable as well. A tape could be variously cut up, spliced back together, flipped around, duplicated, and looped; when that tape was played back, its recorded sounds would then be fragmented, layered, combined, reversed, and repeated. These transformations of sound allowed Reich to experiment upon the medium of music, processes and ideas, and upon the listening subject. His experiments would lead to some musical compositions, but I would like to propose that the lasting import of Reich's work with tape is that it produced new ways of composing and listening to musical sound.

Reich grew up between New York and Chicago, majored in philosophy at Cornell University with a thesis on Ludwig Wittgenstein, and studied composition at Mills College with Darius Milhaud and Luciano Berio. Along the way, Reich accumulated a variety of influences—from John Cage to John Coltrane—but also took exception to many of the methods of modern musical composition. He has told and re-told a story about his encounter with the principles and techniques taught by prominent European composers, especially Berio: tasked with composing dodecaphonic music, Reich did not invert or retrograde the twelve-tone row, but simply repeated it over and over again in his score. Upon seeing this, Berio reportedly asked him, "If you want to write tonal music, why don't you?"[31] Reich would indeed go on to write music which is somewhat "tonal," at least in the sense that it consists of consonant harmonies with loose harmonic functions and that it is *not*

[31] Reich describes his use of the row to order pitches in chords and melodic fragments in Steve Reich, *Writings on Music, 1965–2000*, edited by Paul Hillier (New York: Oxford University Press, 2004), 9; and then, a page later, he tells the story of Berio seeing this composition and posing the question about Reich's resistance to serialism and desire to write tonal music.

derived from strict serial procedures. While his teacher did not impart much to Reich in the way of dodecaphonic technique, Berio nonetheless had a marked influence on the younger American composer. More significant than any pitch-structural logic (or lack thereof), Berio's lasting lesson to Reich was the viability of magnetic tape as a compositional medium.

After his studies at Mills College, Reich found some relief from the technical pressures of academic European modernism in the newly formed San Francisco Tape Music Center (SFTMC), a collaborative, non-profit corporation founded by composers Pauline Oliveros, Morton Subotnick, and Ramon Sender in order to support the research and composition of electronic and tape music.[32] Although the research and composition that took place at the center in California did not operate in the same scientific register as that of Pierre Schaeffer's Parisian studio/laboratory, the musicians at the SFTMC showed a decided interest in similar ideas and aural phenomena. Their cultural differences are attributable at least in part to their institutional affiliations: Schaeffer was supported by the state-sponsored French Radio Institution; the SFTMC was attached first to the San Francisco conservatory, then to Mills College across the bay. While the input and output of their respective experiments were quite different—not least due to the difference in their aesthetic priorities—the conceptual and material products of both places could be quite similar. Schaeffer, Henry, and their colleagues were readers of Husserlian phenomenology, dedicated to a project begun by *art concret* and, as noted above, their work culminated in a theory and practice of "reduced listening." Reich,

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[32] David W Bernstein, *The San Francisco Tape Music Center: 1960s Counterculture and the Avant-Garde* (Berkeley: University of California Press, 2008); and, more recently, Theodore Barker Gordon, "Bay Area Experimentalism: Music and Technology in the Long 1960s," (PhD diss., University of Chicago, 2018).

Riley, and Oliveros, by contrast, engaged a San Francisco community of multimedia collaboration and city-wide happenings, and Oliveros would go on to develop the theory and practice of "deep listening." Regardless of the many differences in process and product, these groups of musicians and researchers had listening and musical experience as a primary concern; and, for both, the technologies at their disposal were instruments for experimenting upon sound and the listening subject.

The first and most obvious difference in the aesthetic and conceptual priorities of these research programs is made clear by their respective titles. The "Tape Music Center" was dedicated to the research and composition of music for tape, no matter its form. Their emphasis was first on the medium of magnetic tape and the practice of composition, and only later on the theory that followed. Schaeffer's group, on the other hand, was dedicated to a pre-existing theoretical framework that led them to a technologically mediated listening practice. As to whether the Parisian predecessors influenced their American counterparts, Reich, for one, seemed either to miss or to disregard the finer points of *musique concrète*, for in later comments he conflated it with tape music more generally:

> I remember it seemed disappointing that tape music, or *musique concrète* as it was called, usually presented sounds that could not easily be recognized, when what seemed interesting to me was that a tape recorder recorded real sounds like speech, as a motion picture camera captures real images. If one could present that speech without altering its pitch or timbre, one would keep the original emotional power that speech has while intensifying its melody *and* meaning through repetition and rhythm.[33]

[33] Reich, *Writings on Music*, 20.

In embracing speech, Reich established a distance between himself and his European counterparts with respect to theoretical and aesthetic ambition, and a commitment to meaning and representation. But even with different aims and goals, the technological affordances of the machines they worked with remained much the same: tape could record sounds and play them back, slow sounds down, speed them up, play them backward, and splice them together. And despite differences in intent, the effects of these technologies were remarkably similar. As Schaeffer had initially used phonographs and records to formulate the "sound object," Reich began in 1963 to experiment with tape machines and using them to repeat sounds, to compose music, and to effect new and different ways of listening which had everything to do with process.

As he worked with tape, Reich sought out interesting sources of sound to record and compose with. Since his interest in electronic tape music was initially driven by the possibility of capturing and using speech as musical material, recording conversations was a good place to start. Driving a taxi to support himself, he saw an opportunity to "bug" his cab and record passengers' conversations.[34] His decision to use speech was, however, not simply a matter of convenience. The direction of dissecting and experimenting with speech that would lead to *It's Gonna Rain* and *Come Out* came at least in part from his former teacher Berio, who had composed with tape and voice since the early 1950s. In particular, Reich mentions listening to *Thema (Omaggio a Joyce)*, Berio's 1958 tape piece which breaks Cathy Berberian's voice down into fragments of sound as she reads "Sirens"

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[34] Reich, *Writings on Music*, 11–12.

from Chapter 11 of *Finnegans Wake*. According to Reich, it was this work in particular which convinced him that speech could be a riveting source for tape music.[35]

As he composed soundtracks to the Robert Nelson films *Plastic Haircut* and *Oh Dem Watermelons*, Reich sought ways of making the sounds with which he was working more complex and more interesting, and so he began looping and layering them. The aesthetic and shifting relationship of sound to meaning in these soundtracks that resulted from this layering and looping coincided with his fascination with the sounds of African drumming, which he had heard on record via Berio and Schuller.[36] In order to imitate the short rhythmic patterns that Reich heard in this music, he cut his tape loops to be only a few seconds long. Thus it was from African drumming, Luciano Berio, and the SFTMC that Reich developed a habit of recording speech, cutting it into loops, and layering it to experimental-compositional ends.

In 1964, Reich looked beyond his taxicab and found in San Francisco's Union Square a street preacher he called Brother Walter, whose sermon that day was on the coming of the Lord and the folly of those who did not heed warnings of the biblical flood. From an extended tape, Reich selected two portions to constitute the musical material for the first and second parts of *It's Gonna Rain*, each telling of the folly of those who mocked Noah and God's retribution upon them:

> He began to warn the people. He said: "After a while, it's gonna rain after a while; for forty days and for forty nights." And the people didn't believe him. And they begin to laugh at him. And they begin to mock him. And they begin to say: "It ain't gonna rain!"

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35 Reich, *Writings on Music*, 203.
36 Reich, *Writings on Music*, 105.

> They didn't believe it was gonna rain. But glory to God. Hallelujah! Bless God's wonderful name this evening. I said, this evening. After a while, they didn't believe it was gonna rain. But sure enough, it began to rain. Hallelujah! They began to knock upon the door. But it was too late. Hoo! The Bible tell me, they knocked upon the door until the skin came off their hands. Whoo! My Lord! My Lord! I say, until the skin came off their hand. They cried. I can just hear their cry now. I can hear 'em say: "Oh Noah! Would you just open the door?" But Noah couldn't open the door; it had been sealed by the hand of God.

Walter's oratory is idiosyncratic, even as it is tied stylistically and topically to a Pentecostalism becoming recognizable to white America at the time. Reich was taken by the sound of the street preacher's sermon—which he heard as already melodic and even musical—but he was also taken by the apocalyptic message, which he felt would speak to an American public all too conscious of the precarity of life on earth following the 1962 Cuban missile crisis.[37]

The 1960s were a time of reckoning for the United States on both global and domestic fronts. In the early stages of the Cold War, technology effected massive changes in political consciousness via information and communication media, but also through the threat of weaponized nuclear fission. From 1945 through the 1950s, the U.S. saw itself ascend as the predominant world military power and bastion of liberal democracy. It was also during this period that the nation witnessed the rise and fall of McCarthyist persecution as political fortification against the threat of

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[37] Reich explains that he thought the content of Walter's sermon would be "very appropriate" in an interview on NPR's Fresh Air in 1999, which can be found here: https://www.npr.org/templates/story/story.php?storyId=6209213, Accessed December 10, 2018; for a discussion of politics and Reich's relationship to African languages as musical material, see Sumanth Gopinath, "Contraband Children: The Politics of Race and Liberation in the Music of Steve Reich, 1965–1966" (PhD diss., Yale University, 2005).

communist insurgency. As America fashioned for itself an image of freedom and liberalism, the 1950s also saw the rise of a civil rights movement which sought to include African Americans in this aspirational image of what was, in reality, a segregated nation. A Democratic Congress passed the Civil Rights Act of 1964, outlawing racial discrimination and segregation. In October of 1964, Martin Luther King Jr. won the Nobel Peace Prize; in 1965, he helped to organize marches from Selma to Montgomery, Alabama, which led to the Voting Rights Act of 1965. In March of 1964, Malcolm X broke from the Nation of Islam and joined the civil rights movement; in February of 1965, he was assassinated. All of this was televised, visible and audible to an American public for whom the availability of such broadcasts was still new. Given the ever-expanding reach of news coverage, Americans from coast to coast were keenly aware of current events both local and national.

It was in the midst of this political, cultural, and technological upheaval that Reich made *It's Gonna Rain*. In the time between the riots in Harlem in 1964 and the riots in Watts, Los Angeles in 1965, Steve Reich recorded and played to the musical avant-garde in San Francisco and New York a warning of apocalypse by an unknown black man. But this warning was fragmented, processed, and technologically mediated. Reich picked a few minutes of Brother Walter's sermon to cut up, to duplicate, to splice—to play with, to experiment with, and to compose with.[38] It may well have been

[38] He used Daniel Hamm's voice a year later in *Come Out* (1966), which shows explicit engagement with a progressive American politics but, as Gopinath points out, there was a disaffiliation by Jewish Americans from the Civil Rights Movement as it "took a black nationalist turn": Sumanth Gopinath, "Reich in Blackface: *Oh Dem Watermelons* and Radical Minstrelsy in the 1960s," *Journal of the Society for American Music* 5, no. 2 (2011): 187.

that Reich's original intent was to allow Walter's voice to go on at some length, but that possibility was displaced by Reich's discovery of an unexpected sonic-technological phenomenon.

The story goes that Reich tried to line up two loops of the same short snippet of speech on two of the same model Wollensak tape recorders side-by-side and play them simultaneously.[39] With the same settings, same loops, and same power source, the identical machines should have played back at the exact same speed, maintaining a constant rhythmic relationship to one another. Instead, one played ever-so-slightly faster than the other. The effect in headphones was, by Reich's account, a bit of a trip:

> The two tape machines happened to be lined up in unison and one of them gradually started to get ahead of the other. The sensation I had in my head was that the sound moved over to my left ear, down to my left shoulder, down my left arm, down my leg, out across the floor to the left, and finally began to reverberate and shake and become the sound I was looking for—"It's gonna / it's gonna rain / rain"—and then it started going the other way and came back together in the center of my head.[40]

This moment of psychoacoustic discovery—of technology acting in unexpected ways—echoes the Schaefferian sound object and its epitomization in closed-groove records. Reich and others at the SFTMC may not have had the explicit statement of intent that the researchers in Schaeffer's group shared, but, nevertheless, the nature of listening, musical experience, and the limits of sound were of interest to the figures involved in both of these collaborative musical environments. Reich's discovery

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[39] Reich, *Writings on Music*, 19–21.
[40] Reich, *Writings on Music*, 20–21.

may have been accidental, but it is well worth pointing out that neither were Schaeffer's ideas and methods entirely based upon the intended design and function of technologies. On the contrary, there is an element of the unintended, accidental discovery and innovation which inflects both of these music-historical moments. For Schaeffer, the *sillon fermé* or closed-groove record was something of a repurposed malfunction; five-and-a-half thousand miles away and a decade-and-a-half later, Reich's *It's Gonna Rain* was built on the *ad nauseum* looping, splicing, and "phasing" of short, spoken phrases recorded on tape. To bend James A. Steintrager's description of the Schaefferian sound object, *It's Gonna Rain* was thus derived from what otherwise might seem a technical malfunction: two short, identical sound objects, gradually separating in time and promoting, through repetition and shifting rhythmic relationships, the hearing of speech *as music*. The psychological-perceptual phenomena that resulted from extreme repetition, technological mediation, and the phasing process proved to be as germinal for Reich as the acousmatizing and de-signifying effects of the closed-groove record on the sound object were for Schaeffer. And, like Schaeffer's closed-groove records, phasing and repetition which may seem to be malfunctions become alternative functions which turned tape loops into technologies for producing new ways of listening.

There are clear affinities between Reich and Schaeffer—and between their seemingly disparate genres of music. With these affinities in view, the early detractors of musical minimalism who disparagingly referred to it as "broken record music" seem closer to the core of the issue than they might have known. If Cage sought to convince his audiences to listen differently through extra-musical forms, then Reich and Schaeffer—with their broken records and tape loops—sought to get others to listen differently through the localized repetition of intra-musical forms. The glaring difference, however, between Schaeffer's *musique concrète* and Reich's *It's Gonna Rain* is the sonic

material they worked in. Schaeffer's project was to render sounds utterly non-representational via "reduced listening"; Reich, on the other hand, embraced the speaking voice as a welcome extension of tape music and, to a limited extent, he engaged the ensuing entanglements of speech, language, and politics. If Reich abdicated some responsibility to address current racial politics and the progression of the Civil Rights Movement, however, it was done so via a divestment in overt representation and an investment in what was deemed apolitical, objective, or neutral: a process-based music derived from machines and technology.

These technological and psychoacoustic similarities raise the question of how and to what extent Reich's tape loops can effect a listening to sounds *as such*. The first part of *It's Gonna Rain* begins with the thirteen-second excerpt about the biblical flood (the first half of the block quote above). These words establish a topic and tone for the work with invocations of death and drowning. At the fourteen-second mark the repeated, shortened loop of only three words begins: "It's gonna rain." Walter's voice, which after this point had gone on at some length, is fragmented. What had been just another three words in a sermon of thousands and a lifetime of millions were isolated and repeated by a composer of strange music. Through the intervention of technology this three-quarters-of-a-second-long snippet of speech is amplified and imbued with a rhythm, meter, and melody that continue to echo in courses on music history and recorded anthologies of electronic music.[41]

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[41] For a discussion of the subject, object, and what happens to Walter in *It's Gonna Rain*, see Biareishyk, "Come Out to Show the Split Subject."

Reich's appropriation and fragmentation of speech, voice, and identity poses a conspicuous political problem.[42] Martin Scherzinger asks,

> What is at stake ideologically when a process, whereby a white composer gradually transforms the voice of a black man into animal sound, is read as modern compositional technique? Reich's descriptions of Brother Walter's role in the making of *It's Gonna Rain* are disarmingly technical. Walter's voice is either drafted into a narrative about the phasing process itself or, to the extent that he addresses the actual characteristics of his voice, into a generalization about verbal vocalization.[43]

While Reich's own formulation of "original emotional power" doesn't adequately address the implications of his use of Brother Walter's voice, Scherzinger's "animal sound" reduces the role of Walter well past a listener's ability to hear, think, and remember. Reich insisted that the music, speech, words, and sounds of *It's Gonna Rain* are equal, inextricable, and inseparable, and that both music *and* meaning were, in fact, intensified and unified. He also claimed not to want to erase people or voices entirely; rather, he saw potential for powerful if equivocal meaning in subjecting them to his musical processes.

> The exciting thing was that the voices, used as sound, nevertheless have a residual meaning that was also very ambiguous—it could be sporting, or sexual, or political and immediately seemed to me to be the solution to vocal music.[44]

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42 Gopinath, "The Problem of the Political in Steve Reich's *Come Out.*"
43 Martin Scherzinger, "Curious Intersections, Uncommon Magic," 217.
44 Reich, *Writings on Music*, 53–54

Contributions to the secondary literature over the past fifteen or so years have helped to illuminate and articulate the various political/ethical entanglements of Reich's two phasing pieces for tape—*It's Gonna Rain* and *Come Out*—in which he uses the words and voices of black men to experimental/compositional ends.[45] It should be noted that this critical secondary literature has appeared as a corrective to the fact that these phase pieces have been, for the most part, unproblematically canonized in twentieth-century musical history for their musical and technological contributions. In Scherzinger's estimation, the little language Reich does commit to Brother Walter is "disarmingly technical." Reich's sin thus lies less in what he said than in what he failed to say. As a result, *It's Gonna Rain* has been first and foremost recognized and remembered as a groundbreaking, pioneering composition, as Reich's solution to the problem of voice in modern music, as a way for the composer to rehabilitate or reinvigorate for himself the "vocal imaginary" of Western classical music.[46] It's not that Reich's innovation was invalid; it's that the historical-contextual meaning of Reich's processing of a black man's voice during the height of the Civil Rights Movement has been overshadowed in musical history by an esoteric technique for composing music with tape machines.

Minimal music continued to develop in reciprocity with its technologies. And as I have argued throughout, these technological works conducted a form of analysis on sound, compositional process, and the medium of music itself. This analytical work *by* minimal music has consequences for the musical analysis *of* the style's constituent works. In the following chapter, I continue to pursue

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[45] Marcelle Pierson discusses this passage at some length in "Voice, Technê, and *Jouissance*," 29–30.
[46] Pierson, "Voice, Technê, and Jouissance," 26.

some questions posed by the music and the composers represented in the present chapter. In what ways, for example, are Reich's loops of speech different than Schaeffer's closed-groove records? Whereas Schaeffer's repeated, acousmatized sounds become "*objets sonores*," is such a reduction to object possible when it comes to the human speaking voice? In analysis of Reich's tape loop works, I show how the technique of extreme repetition engenders an interpretive paradigm that interfaces with both acousmatic listening and more traditional ways of listening. In particular, Seth Monahan's theory of agent-classes in music-analytical discourse provides a conceptual key to examining the interrelationships of composer, sound, and analyst.[47] The present chapter thus brings the repetitive aesthetics of musical minimalism into recent debate within musicology and sound studies that centers on the relationship of music to sound, object-oriented ontologies, the attribution of agency to non-human things,[48] and the mediation of human experience by race and gender.[49] A close reading of musical minimalism's objects in this light—especially its canonical and yet controversial works such as *It's Gonna Rain*—can help to reconsider contemporary discourses of music analysis and a hermeneutics of musical minimalism. With the help of prior analyses by Martin Scherzinger, Sumanth Gopinath, Marcelle Pierson, and others, I place Reich's tape works into a broader history of

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47 Seth Monahan, "Action and Agency Revisited," *Journal of Music Theory* 57, no. 2 (Fall 2013): 321–71.

48 See the 2014 exchange between Richard Taruskin and Michael Gallope: Michael Gallope, "Why Was This Music Desirable?: On a Critical Explanation of the Avant-Garde," *The Journal of Musicology* 31, no. 2 (Spring 2014); Richard Taruskin, "Agents and Causes and Ends, Oh My," *The Journal of Musicology* 31, no. 2 (Spring 2014).

49 See the special issue of *Parallax* 23, no. 3 (2017), especially: Marie Thompson, "Whiteness and the Ontological Turn in Sound Studies," *Parallax* 23, no. 3 (2017): 266–82; Annie Goh, "Sounding Situated Knowledges: Echo in Archaeoacoustics," *Parallax* 23, no. 3 (2017): 283–304; and Charles Eppley, "Beyond Cage: On Sonic Art History & Historiography," *Parallax* 23, no. 3 (2017): 342–360.

musical minimalism and post-minimalism, which includes composers such as Julius Eastman. Minimalism and its objective, technological ideals are complicated by Eastman's explicit self-identification of a black, queer subjectivity. What's more, Eastman uses his music as a technology of cultural definition—and his object of definition is the composer of minimalist music.

Chapter 4: Voice, Agency, and Analysis of Musical Minimalism

This chapter is concerned with some of the historical and theoretical implications of an American musical minimalism that derived its aesthetic and philosophical ideals from emergent sound technologies. As I explored at some length in the previous chapter, the mechanical repetition afforded by phonograph records and tape machines gave formal shape to a number of historically prominent styles and techniques of musical composition—namely, Steve Reich's musical minimalism and Pierre Schaeffer's *musique concrète*. Both of these composers in turn developed musical theories, philosophies, and alternative listening practices around the saturated repetitions that machines made possible. These two genres were similarly shaped by the affordances of modern recording and sound production technologies but, by virtue of their new techniques and listening practices, these new styles of music also accrued some technological affordances of their own. Composers such as Schaeffer and Reich used their musical works as technologies in and of themselves, in order to carry out cultural interventions into established listening, composing, and performance practices, and to analyze, through their musical practice, the fundamental concepts of their received classical traditions. The focus of the present chapter is on how composers of musical minimalism invoked machines and mechanical processes to analyze topics of particular concern to them, including voice, agency, subjectivity, and objectivity. In particular, I explore through varied music-theoretical methods the ways in which Steve Reich and Julius Eastman used their musical works as technologies to define an American minimalism and to compose its listening, performing, and composing

subjectivities. Their work offers back a reciprocal form of analysis that offers opportunities to rethink facets of these music-theoretical methods.

The chapter is in three parts. First, I extend the discussion of Steve Reich and Pierre Schaeffer in the previous chapter to offer an overview of an American musical minimalism defined as much by its characteristic aesthetic qualities—familiar harmonies, pulsing rhythms, and high degrees of repetition[1]—as it is defined by its constitutive composers' use of various technologies to experiment upon sound and the medium of music. While not all minimalist composers shared the same musical ideals, many rhetorically framed their use of technologies—and technologically derived compositional techniques—as a primary means by which they could achieve an objectivity with regard to their experimentation with musical sound. The pursuit of musical objectivity by experimental composers was a marked departure from the received purposes for composition passed down by European classical tradition. For Steve Reich, conceiving of music "as a gradual process"[2] was an important step toward this major cultural intervention, but it was a step that he took only after confronting a problem facing so many modern composers: the problem of voice. As I have noted in Chapter 3, Reich sought to distinguish himself from the earlier *musique concrète* by taking up the voice as a source of sound for tape music. For an experimental minimalism in pursuit of musical objectivity (of which Reich was an important part), the use (or disuse) of the speaking or

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1 Robert Fink, *Repeating Ourselves: American Minimal Music as Cultural Practice* (Berkeley: University of California Press, 2005).

2 Steve Reich, "Music as a Gradual Process," in *Writings on Music*, 1965–2000 (New York: Oxford University Press, 2004), 34–36.

singing voice was an important point of attack precisely because it seemed to provide a direct link—in sound, in body, and in metaphor—to the expressive, the lyrical, the creative, and the compositional voice. As Reich sought a solution for the problem of the singing voice in his music, these other forms of voice also found themselves under attempted erasure.

In the second part of this chapter, I consider the fraught relationship between the aspirational objectivity of Reich's minimalism, the many forms of voice he attempted to erase, and the perceived forms of agency behind these forms of voice. In particular, *It's Gonna Rain* (1965) and *Come Out* (1966) serve as examples of an electronic experimental music in which voice and technology interact under Reich's stated objective ideals, effecting a departure from traditional musical hermeneutics. I offer extensions to Seth Monahan's meta-analytical model of agent-classes in music-theoretical discourse in order to consider the relationship between the non-expressive objectivity of Reich's musical minimalism and the many forms of voice and agency that underwrite traditional musical interpretation and analysis. In these two early tape works, the anthropomorphic hermeneutics of classical music cease to operate. The normative projection of agential subjectivity onto musical sound received from classical tradition is warped by mechanical repetition and mediation; instead, the voices of Reich's would-be "performers"—Brother Walter and Daniel Hamm—are rendered as projections of a technological objectivity devoid of agency. With Monahan's network of agent-classes in analytical discourse as a model, I argue that within these pieces the traditional anthropomorphism of classical music is displaced by a *technomorphism* of experimental music. This interpretive displacement is supported by Reich's rhetorical abnegations of composerly agency and his claims to musical objectivity.

Finally, in the third part of the chapter, I move beyond Reich's tape works of the 1960s to the music of Julius Eastman. Eastman's compositions and their controversial titles challenged the objective bent of American minimalism's alternative listening practices (which, after nearly two decades, had become to some extent normative). I position Eastman's music against the problematics of experimental musical discourse and draw upon his 1980 concert at Northwestern University as a site of encounter between Eastman's black, queer subjectivity—expressed in his works' titles—and the sort of objective, technomorphic hermeneutics of American minimalism that Reich's tape works engendered. I argue that this concert encounter shows Eastman recomposing the figure of the American experimental composer and, at the same time, analyzing minimalism's normative aurality. In closing, I argue that Reich's prescribed way of listening to his own repetitive, process-based minimal music—which itself depends upon a technomorphic hermeneutics—is audible only within what Marie Thompson calls "white aurality," a set of unmarked listening practices and musical ontologies which all too conveniently obscure the voices and agents with which experimental music—and Reich in particular—seem to have a problem. Eastman's critical encounter with minimalism's predominant aurality at his 1980 concert thus allows his music to act as a technology for rethinking the analysis of musical minimalism, and of music-theoretical representations of voice and agency.

Voice and Objectivity

A number of American composers in the late 1960s cultivated an aesthetic, a style, and a technique of musical minimalism that has continued through to the present in post-minimalism, various electronic and ambient works, the music of art rock bands, and other generic proliferations.[3] The constitutive works of musical minimalism and its offshoots most often share a sparsity of sonic material, familiar triadic and diatonic harmonies, and pulsing rhythms. But minimalism's origins and its culturally embedded meanings are not nearly as simple as they might sound. For Robert Fink, the defining characteristic of musical minimalism is its high degrees of repetition, which he associates with the ubiquitous repetition of both image and sound in mid twentieth-century consumer culture and advertising media.[4] Before Fink—and from a decidedly more music-analytical angle—Rebecca Leydon argued that the high degree of repetition characteristic of minimalism conjures an autonomous yet mechanical musical subject whose agency is suppressed by its very repetition.[5] More recently—and with a more specific focus on multimedia works—Rebecca Eaton has shown how minimal music in modern film soundtracks is often used to signify machines, technology, and

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3 Timothy A. Johnson, "Minimalism: Aesthetic, Style, or Technique?," *The Musical Quarterly* 78, no. 4 (Winter 1994): 742–73.

4 Fink, *Repeating Ourselves*.

5 Rebecca Leydon, "Toward a Typology of Minimalist Tropes," *Music Theory Online* 8, no. 4 (2002).

mathematics, and how this musical signification invokes an ethos of Western rationality that is the opposite of human irrationality, emotion, and subjectivity.[6]

As I have argued in Chapter 3, both minimalism and *musique concrète* are genres defined at least as much by their cultural associations with technology as they are by the musical features that articulate these associations. The particular balance of technological sociality and musical formal qualities that musical minimalism negotiates, however, raises a number of issues with respect to the roles of musical technologies both new and old. In particular, the relationships between machines, instruments, and the human bodies involved in composition and performance of this music are diverse; some foreground the sheer "sonicity" of the music, while others emphasize meditative listening practices centered in the self. In weighing these apparently opposite interpretive situations, I want to frame the rest of this chapter around a guiding question, one that I will return to at several points throughout: "Do the sounds of musical minimalism come from musicians or machines?"

With this question in mind, consider the following canonical examples of musical minimalism, each of which pushes and pulls at the limits of material objectivity, the experience of sound, and the listening subject. In La Monte Young's *The Well-Tuned Piano* (1964), the grand piano is painstakingly tuned to an E-flat well below the range of the instrument; a lengthy semi-improvisation actualizes the sonic phenomena of the harmonic series. The sounds that are produced strike our ears as being out of tune because, in a sense, they are *too* in tune when compared to

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[6] Rebecca M. Doran Eaton, "Marking Minimalism: Minimal Music as a Sign of Machines and Mathematics in Multimedia," *Music and the Moving Image* 7, no. 1 (Spring 2014): 3–23.

conventional modern tuning practices. As I have noted in the previous chapter, in his tape loop pieces *It's Gonna Rain* from 1965 and *Come Out* from 1966, Steve Reich took the recorded the voices of a Pentecostal street preacher known as Brother Walter and a member of the Harlem Six, Daniel Hamm, and subjected them to repetition, fragmentation, and phasing in the course of a musical process carried out on side-by-side tape machines. A few years later, in 1969, Alvin Lucier produced *I Am Sitting in a Room* through a step-by-step process, in which a recording of Lucier's voice was played back over loudspeakers and re-recorded; this new recording was then played back into the room and again recorded, and the process continued through innumerable iterations. With each iteration, the recording accumulated the resonant frequencies of the room until the words Lucier spoke were transformed into pure, glistening tones.

In music such as this, the effects of technology as both a conceptual and material catalyst are clear. The machines at each composer's disposal are distinctly audible and gave rise to novel approaches to musical composition and performance. The integration of mechanical sound into the conceptual underpinnings of minimalism reverberated for decades as composers continued to write music that shows a concern with psychological-perceptual phenomena and different ways of listening. Steve Reich and Philip Glass composed a number of works for more traditional instrumental and vocal forces; La Monte Young's *Dream House* is still open; Lucier continued to work with amplified brain waves, oscillators, and various biometric sensors for decades. These are examples from a musical minimalism that derives its techniques and processes as well as its culturally embedded and embodied meaning from machines—or, more specifically, from the *interactions between* humans and machines. The staging of these interactions introduces the figure of technology into the ordinary musical relationships between composer, performer, and listener. In doing so, this

music exposes its listeners to new and different types of technologically mediated or inspired sounds that afford the sort of alternative listening practices these composers were interested in.

To take a first stab at answering my guiding question—whether the music comes from musicians or machines—it would first be good to refine the question. After all, this music needed both its machines *and* its musicians in order to come into being, and so it is always some combination of the two that shapes what arrives at the listener's ear. And yet, the origins of the sounds offered up to the listener and what that listener hears are two separate things. Whether one hears the sounds of musicians or the sounds of machines depends upon how one listens, and this is precisely the point: the answer to my guiding question is dependent upon and contingent within modern aurality. I will return to consider specific forms of aurality later in the chapter as a central point of critique for musical minimalism and for experimental music writ large. For now, I want to consider some of the ways that composers pursued an ideal of objectivity in their musical composition and, by extension, how they sought to engender an aurality that would recognize this anti-expressive, objective mode of musical composition. For many of these composers, machines and machine-like processes were instrumental in their pursuit of musical objectivity. A cultural association of objectivity with technology led composers to use their music as technologies for effecting this sort of objectivity.

The foregoing examples of canonical musical minimalism can also serve as examples of a more widespread trope, one that unites a number of twentieth-century avant-garde artists and composers: the attempted removal of subjectivity from art and music. This removal of the self from creative work was attempted by different means by various artists and composers, most often by intervening in the creative process. These efforts were often accompanied by explanatory essays on how the artists or

composers in question would go about removing themselves from their work, and why this erasure of subjectivity was necessary in the first place. Implicit or explicit in these statements of intent is the notion that the removal of *subjectivity* from the creative process would consequently leave, in its place, an *objectivity* that rendered their works of art and music non-representational, non-referential, unmarked by its artist or composer, not expressive in any traditional sense. This self-removal in pursuit of compositional and performative objectivity was attempted by many different composers via very different means, but it is no coincidence that among the most common problems in this pursuit was what to do with the singing voice.

Singing, Performing, and Composing the Western Voice

As a number of scholars have observed, experimental music has problems with voice.[7] And further, the voices of experimental music—whether they sing or speak, whether they are the performers' or the composer's—often seem to have a problem with agency. In what follows, I approach the conjoined problems of voice and agency through a broad theoretical framework that ranges from deconstructions of Western philosophical thought and psychoanalysis to more specifically music-

[7] These problems both stemmed from and contributed to a modern development of what Marcelle Pierson calls the "vocal imaginary" in "Voice, Technê, and *Jouissance* in *Music for 18 Musicians*," *Twentieth-Century Music* 13, no. 1 (2016): 25–52.

analytical approaches. The latter music-specific perspectives each in some way concern *anthropomorphism*, or the attribution of human characteristics to non-human things.

A number of composers who might be called "experimental"—and some who might not—have encountered the human voice, its capacity for language, and its expressions of subjectivity as problems to be overcome or to be avoided in the first place. These might seem odd problems to have, in that the voice and its qualities do not ordinarily pose problems in and of themselves. By the middle of the twentieth century, however, within the avant-garde showing something of oneself to others through music had become uninteresting, old-fashioned, distasteful, antithetical, or even a moral/ethical transgression. To the consternation of some and to the confusion of many others, modern music has often been a site of resistance against the expression of human subjectivity. And one of the most fixated-upon objects of this resistance has been the singing voice.

The corporeal immediacy of singing as a form of music-making can make it feel somehow more *personal* than playing an instrument. From a psychoanalytic perspective, the inextricable interdependence of voice and subject might render the act of singing a more transparent window into the subject's subjectivity than the act of musical performance through instrumental prostheses. This rather crude rendering of singing vs. playing, however, privileges the human voice for its anatomical embodiment. As this rendering goes, the singing voice is more human because its sound source is made of meat and not metal—and, thus, the voice is more intimately associated with subjectivity. This association of voice and subject is central to what Jacques Derrida calls the "Western metaphysics of presence," to which he attributes the powerful and seemingly innate sense that one's own voice is always there—to be spoken, written, or thought—and the notion that this voice and

human subjectivity are somehow inalienable.[8] To the extent that singing is a more humanly embodied, vocal practice than instrumental forms of musicking—and to the extent that the voice is inalienable to the subject—the singing voice emerges naturally within this Western metaphysics of presence as the most conducive means of subjective expression in Western musical composition and performance. Derrida goes on to deconstruct this inalienable voice by locating it in learned language, in much the same way that Jacques Lacan conceived of the subject as being both cut up and produced by language (or, more specifically, by the symbolic order).[9] Listening to Western classical music can put an interesting spin on the (de)constructions. If language both precedes and produces subjectivity—and if voice is inextricable from the subject—then it follows that the voice's utterances would necessarily be made through language. When spoken, written, or thought, the voice surely appears as linguistic utterance; when sung, however, the voice can appear as something more. [10]

As Carolyn Abbate has argued with regard to particular operatic passages, "the *sound* of the singing voice becomes, as it were, a 'voice-object' and the sole center for the listener's attention. That attention is thus drawn away from words, plot, character, and even from music."[11] Having shed its textual and linguistic trappings, the sheer sound of the voice-object is left for the listener to behold.

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8 Jacques Derrida, translated by Leonard Lawlor, *Voice and Phenomenon: Introduction to the Problem of the Sign in Husserl's Phenomenology* (Chicago: Northwestern University Press, 2010).

9 Michael Lewis argues that Derrida's understanding of language ought to be supplemented by Lacan's symbolic order in *Derrida and Lacan: Another Writing* (Edinburgh: Edinburgh University Press, 2008).

10 For perspectives on the voice in music from authors cited in this dissertation and many others, see Martha Feldman and Judith T. Zeitlin, ed., The Voice as Something More: Essays Toward Materiality (Chicago: University of Chicago Press, 2019).

11 Carolyn Abbate, *Unsung Voices: Opera and Musical Narrative in the Nineteenth Century* (Princeton, New Jersey: Princeton University Press, 1991), 10.

For Abbate, music's voices are thus distinct from the ordinary speaking voice, and, in the conditions of musical performance, their sound cannot be easily dislocated or disembodied by a linguistically focused poststructuralism. Nonetheless, music's voices face another form of alienation—this one brought about by the very conditions of musical performance which precluded their Derridean disembodiment. In classical music, a singer's voice seldom belongs to him alone. Although any given operatic role will be sung differently by each new singer—and may be sung differently by the same singer in repeat performances—each variant of the role must nonetheless adhere to the strict stylistic conventions which govern performance practice. For those who adhere to these conventions, little agency is afforded the performer over *how* she sings, and even less over *what* she sings. Singing classical music thus raises an old but important question: Whose voice is being sung?

While this question is paramount in the case of vocal music, even entirely instrumental genres of music might seem to be imbued with what Edward T. Cone famously called "the composer's voice": a dramatic persona projected by the composer, an agent who acts through the music's sounds, a compositional *voice* for the performer and listener to identify and to identify *with*.[12] In this sense, the composer's voice need not be sung, spoken, verbalized, or even *vocalized*. It may pass prismatically through any number of bodies and things, and its sonic form may derive from any number of indeterminate or invisible sources. What's more, Abbate contends that the single voice of the single virtual composer is itself too simple; rather, music's voices are multiple, and some will inevitably be left unsung. Sound, music, and voice converge in performance: the composer's voice

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[12] Edward T Cone, *The Composer's Voice* (Berkeley: University of California Press, 1974).

takes musical form, the performance of music yields sound, and the sounds of music become its voices. The notion of "the composer's voice" thus informs the traditional hermeneutics of classical music and its scholarship.

Voice, then, might be heard coming from at least three places in traditional classical performance: the composer's voice—that is, compositional voice as an agential force expressed through the act of writing music; the performer's voice—that is, an agential force expressed through the act of singing or playing music; and, of course, the actual sounding speaking or singing voice of the performer. These types of voice exist in relationships that are inextricable and reciprocal: the composer's voice as agential force shapes the performer's singing voice as a means of mediated expression; the performer, meanwhile, exercises technical mastery over the sound of her singing voice, which helps to foreground her interpretive contributions to the composer's musical work, and so on. As constitutive parts of the sounding music, singing voices and the sounds of playing instruments are the sonic medium by which a listener might perceive the composer's or the performer's agency in the first place. All three of these types of voice are perceived to be products of some form of agency, whether the performer's, the composer's, or some combination. In Seth Monahan's theory of agent-classes in music analytical discourse, the anthropomorphic representations of these voices in writings by music theorists interact in ways consistent with analytical writing and in listening practices. Together, they can help to show the ways in which both voice and agency appear—or disappear—in works of experimental music such as Steve Reich's early tape loop pieces.

In *It's Gonna Rain* and *Come Out*, short loops of speech played on side-by-side tape machines accrue melodic qualities through repetition; these loops are then allowed to gradually fall out of phase with one another, producing echoes, harmonies, beats, and a sort of melodic counterpoint. As

Marcelle Pierson has argued, Reich saw these tape pieces and their technologically derived musical processes as exciting solutions to the problem of composing for speaking/singing voices.[13] In the course of finding a solution to his problem of vocal music in these early tape works, Reich intervened into the sound of the speaking or singing voice through the use of sound recording technology. This technological mediation of their voices, however, had the corollary effect of denying Walter and Hamm any agency over their unwitting participation in experimental music: their roles as performers had been created through Reich's technological interventions. If his performers were denied agency, though, Reich claimed that something similar had happened to him in his role as a composer. In the years following *It's Gonna Rain* and *Come Out*, Reich adapted the processes he had developed on tape machines and began to compose similarly structured works for traditional musical instruments. The central claim of his 1968 essay "Music as a Gradual Process" (discussed in Chapter 1 in connection with the aesthetic standpoints advanced by Cage and LeWitt) was that using these technologically derived musical processes allowed him to relinquish his own composerly agency. In his rhetoric, tape machines and phasing process apparently short-circuited the traditional relationships between the composer, the performer, and the sounding music. In other words, the problems posed by the singing or speaking voice, the performer's voice, and the composer's voice had been solved through new musical technologies. These are, however, Reich's words, and the fields of musicology and music theory have been rightly skeptical of them.

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[13] Pierson, "Voice, Technê, and Jouissance."

To be sure, *It's Gonna Rain* is an atypical case of vocal music. In one fell swoop, Brother Walter and his speech were lifted from the extra-musical world, inscribed into the experimental musical order, and, eventually, woven into the history of electronic experimental music. Walter's sermon, delivered to listeners and pigeons in San Francisco's Union Square in 1964, provided Reich's composition with its melody and its rhythmic drive, all the more so when the speech was cut up, repeated, and phased. Walter's voice is the source of all sound heard over the course of the repetitive work that so resembles Schaeffer's production of sonic objects. This technological mediation and fragmentation along with Reich's "disarmingly technical" rhetoric reduce what was a sonic representation of agency and personhood to an intra-musical agent of the lowest order. In its original context, Walter's voice was capable of carrying the sermon where he wished; in the recording of *It's Gonna Rain*, that voice is recorded, fixed, and fragmented, taken out from under Walter's control. Although the contexts were somewhat different, the process of Reich's subsequent tape work, *Come Out*, is much the same. The sounds for the work were taken from a recorded interview in which Daniel Hamm spoke of the brutality he suffered at the hands of police officers while in custody for crimes he did not commit (Hamm was one of the so-called "Harlem Six," a group of black men who were wrongly detained in connection with a murder case, and who were abused during their time in jail). In Reich's tape composition, Hamm's verbal account of his testimony, in which he proved his abuse by "opening the bruise up and letting some of the bruise blood come out to show them," was cut up, repeated, layered, and phased. In these works, the voice ultimately ceases to signify as repetition induces semantic satiation, and the listener becomes able to hear not Walter or Hamm's

words but "sounds as such."[14] The street preacher is reduced to an individuated musical element; his sermon reduced to sound.

At the same time, a listener is perfectly capable of hearing and remembering the contexts of Walter's original utterance. As the piece and its musical process progress, his voice is further obscured, but I hesitate to be too deterministic about the erasure of Walter's voice here. As Sumanth Gopinath has observed, it is certainly possible to dwell on the text and the sounds at once, to continue to mull over the repeated words and their multiple meanings.[15] Indeed, it is this ambiguity that excited Reich in the first place. As he put it, "the incessant repetition intensified [the words'] meaning and their melody at one and the same time."[16] Reich was explicitly not interested in destroying the voice so much as he was in transforming and developing an alternative function for it in his own music. Still, his musical ideals and compositional processes bent explicitly toward the limitation or even the erasure of subjectivity.

Within its original context, Brother Walter's sermon was a work and performance of its own: he is the sermon's author, its performer, its "composer." But when Reich captured his words on tape and subjected them to fragmentation, isolation, and repetition to compose his own music, Walter's role changed. By technological means, Reich exercised his composerly agency to turn Walter into a performer of his experimental music, and to limit Walter's access to his own voice. These sounds

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[14] Elizabeth Margulis, *On Repeat: How Music Plays the Mind* (New York: Oxford University Press, 2014), 15–18.

[15] Sumanth Gopinath, "The Problem of the Political in Steve Reich's *Come Out*," in *Sound Commitments: Avant-Garde Music and the Sixties*, edited by Robert Adlington (New York: Oxford University Press, 2009), 121–44.

[16] Reich, *Writings on Music*, 19.

were folded into the musical order of an avant-garde with its own values, hierarchies, and project of cultural intervention, including the erasure of subjectivity and the mechanical objectivity of musical process. To the extent that Reich's composerly expression and taste were scrubbed away by impersonal process, so too was Brother Walter's subjectivity, his communicative force and potential for self-expression splintered and preserved in the timeless medium of the recording. Reich's process thus altered Walter's voice in both a positive and negative sense: subject to repetition and phasing, speech became musical, became more than it was, and took on new meaning; at the same time, his words shed their original meaning by semantic satiation, his sermon became mere found sound, and the historical Brother Walter capitulated to musico-technical forces. Still, the audibility in *It's Gonna Rain* of speech and voice on the one hand and sheer sound on the other is vertiginous, determined as much by shifts in attention as by repetition and process. Noticing different details and entraining to different combinatorial rhythms and melodies is part of the experience and from one listening to the next, from one listener to the next.[17] For all that repetition should facilitate reduced listening and afford the "hearing of sounds as such," Walter's voice seems inextinguishable. The sound is layered, looped, and phased, but it is not cut up any further, not broken into syllables or destroyed as in Luciano Berio's *Omaggio a Joyce*.

If sounds can turn into what Schaeffer calls sonic objects, then it stands to reason that Brother Walter's voice, technologically mediated and re-used as source material for *It's Gonna Rain*,

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[17] Luis-Manuel Garcia, "On and On: Repetition as Process and Pleasure in Electronic Dance Music," *Music Theory Online* 11, no. 4 (October 2005).

might turn to some kind of object. But, given that these sounds constitute or at least connote a voice, its reduction seems only to go so far, approaching but never quite reaching what Mladen Dolar calls the "object voice."[18] That Reich's music might conjure the object voice is, for Dolar, impossible: for him, voice is something that exists in a domain akin to the Real—inaccessible and impossible to experience as itself, evident only through mediated traces and indirect evidence. That is, the voice may be located in the body and/or language, but it ultimately resides somewhere else.

> The voice stands at a paradoxical and ambiguous topological spot, at the intersection of language and the body, but this intersection belongs to neither. What language and the body have in common is the voice, but the voice is part neither of language nor of the body.[19]

This voice, neither sound nor sign, is inextricably tied to the subject, and yet it can never be pinned down. As Dolar sees it, from the moment it is recognized by another, the voice can never really be attached again to its true source, because that source always remains unknown and out of reach. Acousmatic sounds are those whose source is unseen, and the sounds of Dolar's voice are always construed in this way. Even when one discovers the speaker, the voice cannot be disacousmatized because, for Dolar, emphatically, "there is no such thing as disacousmatization." The always-acousmatized voice is necessary to the subject's understanding of self and, as such, is capable of a kind of presence in experience. The "object voice," on the other hand, is elusive:

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[18] Mladen Dolar, *A Voice and Nothing More* (Cambridge: The MIT Press, 2006), 4.
[19] Dolar, *A Voice and Nothing More*, 73.

> It is the part which can never be simply present, but is not simply absent either: the object voice is the pivotal point precisely at the intersection of presence and absence. It discloses the presence and gives ground to its imaginary recognition—recognizing oneself as the addressee of the voice of the Other—but at the same time it is what inherently lacks and disrupts any notion of a full presence, it makes it a truncated presence built around a lack—the lack epitomized by the surplus of the voice.[20]

Presence/absence, lack/surplus, subject/object—the voice and object voice are constituted by apparent dichotomies, seeming not to truly *exist* even as they operate and appear vertiginously. And, indeed, the voice serves a pervasive and crucial function in communication, in one's relationship to others, and in subjectivity. Whether voice proper or Dolar's elusive object voice, what persists is a confounding situation of, simultaneously, "both/and" and "neither/nor." This dual, vertiginous, split existence betrays similarities to the state of sound, speech, and music in Reich's *It's Gonna Rain*.

Does *It's Gonna Rain* succeed in turning voice into an object? If it does, what role do technologies—whether mechanical or metaphorical—play in this transformation? And does this voice–object or object voice seem to come from the musicians or the machines? These two experiences of the individuated musical elements of Reich's tape loops as sound and voice exist in two different registers that are, in listening experience, not at all mutually exclusive. One can certainly mull over the religious and political associative meanings available within the words Reich has captured; at the same time, the repetition of the sounds of these words affords the perception of musical parameters like rhythm, meter, melody, and harmony. The listener may, then, wander

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[20] Dolar, *A Voice and Nothing More*, 55.

between the registers of words and music, focusing in on certain sonic details *and* considering the amplified, reiterated meaning of the repeated words. This alternation of register is an affordance of repetition, of Reich's musical process, and of *It's Gonna Rain* as a musical technology that analyzes the apparent distinctions between speech and musical sound.

In one sense, Reich's tape work is no different than any other piece of music: the sounds of *It's Gonna Rain* are eminently available for all to hear. Its analytical function is not in making certain sounds more or less *present*, but in drawing out certain sounds and foregrounding relationships between them—calling up networks of contextualized meaning, political signification, and cultural connotations. Music analysis is the differentiation of audible musical elements. The sounds of *It's Gonna Rain* are there to be heard, but their historical, contextual, and political meaning become eminently more available via analyses such as Scherzinger's, Gopinath's, Biareishyk's, and Pierson's. But in addition to these kinds of musical/cultural analysis offered by scholars of music, *It's Gonna Rain* is implicated in other forms of analysis as well. These apparent binaries of voice/"object voice," sound/speech, object/subject, human/machine are all held up for interrogation in the listening situation brought about by Reich's tape loops.

From Dolar's vantage point, the object voice resides at the intersection of presence and absence, and one would be hard pressed to argue that Reich managed to conjure it up as a fully present object on a couple of tape machines. That said, if he *were* trying to conjure up this object voice and render it audible, his use of fragmentation, isolation, and repetition would be in keeping with a history of psychoanalysis and hypnosis. As Dolar notes,

> At the origin of psychoanalysis, there was the problem of the hypnotic voice which demanded submission, and its mechanism—the repetition of some formula which

> lost all meaning by being repeated—was based precisely on the attempt to isolate the object voice from meaning. If psychoanalysis was to establish itself by sharply opposing hypnosis and its suggestive powers, it had to take into account and analyze the ominous authority of that strange object.[21]

In this light, repetition is a potentially dangerous and powerful technique capable of strong effects on the human mind. In the context of a chapter on an experimental composer who used the speaking voice as source material for repetitive musical processes, the cognitive effects of this dangerous and powerful repetition on the listening subject are of central importance. Elizabeth Margulis neatly summarizes the way that music in particular can act upon the senses in the title to her 2014 book, *On Repeat: How Music Plays the Mind*. In her study of the different forms repetition takes in musical practice, she draws upon empirical studies by herself and others to show many complex relationships that obtain between repetition, semantic satiation, and other psychological phenomena, arguing that our human psychological disposition dictates our experience of music and each other. Among other things, she suggests that repetition lends its auditors access to a shared subjectivity.

> Repetition can at once erect perceived syntactic structures and invite a kind of participatory, shared subjectivity. These twin functions underscore that part of music's distinct phenomenology consists of its merging of the objective and subjective stance.[22]

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21 Dolar, *A Voice and Nothing More*, 40.
22 Margulis, *On Repeat*, 12.

As has been noted, techniques focused on repetition figure prominently in minimalist music. If minimalist composers were using their music as technologies of cultural definition, then the twin functions that Margulis mentions would seem to facilitate this intended effect quite nicely.

Steve Reich was no hypnotist—or was he? While he may not have been interested in *controlling* minds, per se, he was certainly interested in altering consciousness, in alternative modes of listening and attention, and in changing one's state of mind through music. He was thus interested in creating a situation in which music shapes experience in profound ways; in Margulis's words,

> Music, in these cases, can seem to play the person. Since music comes from other people—composers, performers, collaborators—and is often experienced in a social setting, with other people jointly moving to the beat or listening together, this sense of being played from outside can feel intensely bonding and communal, and serve to construct a sense of shared subjectivity.[23]

As Reich sought to limit the influence of his own subjectivity on the sounding music of his compositions, he also sought to induce in his audience a way of listening that was altogether different than the usual concert experience.

> While performing and listening to gradual musical processes one can participate in a particular liberating and impersonal kind of ritual. Focusing in on the musical process makes possible that shift of attention away from he and she and you and me outwards towards it.[24]

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[23] Margulis, *On Repeat*, 74.
[24] Reich, "Music as a Gradual Process," 36.

"It" here connotes the impersonal, the apolitical, and the objective. Although Reich's precise intent might have been different, within the context of his essay and musical output this "it" summons a sense of the mystical or spiritual, the transcendental. If "it" can be heard in his music, it takes the form of some musico-technical, processual sublime. This realm seems as impossible as Dolar's voice, and perhaps Reich would agree that it is. He does not claim to be able to reach "it"; rather, he says that the processes with which he composes his music make it possible to move *toward* "it." One's approach toward "it" would thus appear to be limited to an asymptotic aspiration, the experience of "it" perhaps only fleeting. Indeed, this aspirational drive toward the objective encapsulates a cultural ideal of mid-century avant-garde art and music. By focusing on process and on "it," Reich articulates the ideal of objectivity that was and would remain a trope in modern composition well through the twentieth century, especially in the United States.

As we puzzle over what exactly IT might mean—and what it might sound like—it is important to note that this essay came as Reich shifted his compositional practice toward instrumental and vocal music performed in real time, leaving machines out of his musical performances entirely and emphatically. Nonetheless, the mimetic musical processes he derived from machines and the accompanying ways of listening to them remained. Less technological and more technomorphic, the minimalism and post-minimalism of Reich and others continued to sound a technological objectivity, long after the machines themselves had gone silent.

Over the next few years of his career, Reich would continue to experiment with tape and musical process. After *It's Gonna Rain* and *Come Out*, Reich incorporated traditional musical instruments and live performers alongside tape machines in works such *Piano Phase* and *Violin Phase* (1967), and, eventually, with *Four Organs* (1970), *Phase Patterns* (1970), and *Drumming* (1971), he

abandoned tape altogether. But as he pivoted from the last phasing pieces with tape to the first entirely instrumental phasing pieces, Reich sought to associate himself further with contemporaneous movements in the visual arts in New York City. In his rhetoric (which betrays marked similarities to Sol LeWitt's language in my side-by-side comparison in Chapter 1), Reich attributed both agency and mechanical objectivity to musical process—the same sort of process that subjected Brother Walter's voice to looping and phasing. His machinic metaphor suggests, however, that even after Reich stopped using tape machines as instruments he continued to conceive of his composed musical processes as technologies which could be set up, loaded, and which could run by themselves. This attribution of agency and objectivity is a conspicuous example of a prevalent tendency in mid-century modern music toward *technomorphism*, an inversion of the more familiar anthropomorphism. To attribute human characteristics to the non-human is to anthropomorphize; to attribute technological characteristics to humans—or to things that are of the human—is to technomorphize. Anthropomorphic attributions are inevitably accompanied to some degree by the projection of subjectivity onto the given non-human object; technomorphic attributions are thus accompanied to some degree by the projection of objectivity onto the given human subject. Reich and LeWitt technomorphize their works of art and music, referring to them as generative processes and machines, capable of running on their own and making art, perhaps the most human of cultural products.

In these terms, Reich and LeWitt are as much composers or artists as they are engineers of technologies that produce art and music. Of course, the mechanical objectivity of their works is not total; at the very least, they retain indirect control over what it is that their works produce by designing the process and by crafting the idea for the work in the first place. And their performers and assistants make a number of decisions of their own, intervening in the production of the art or

music with plenty of room for taste, expression, and their own human subjectivity. Nevertheless, this double technomorphic situation is a prime example of the idealization of technological objectivity and its place in avant-garde art and music. Is there room in this technomorphic rhetoric for the human, the person, and the subject? If so, where? For Reich, his stated intent in adopting musical processes—indeed, in adopting music *as* a process—was to make his music impersonal.

Impersonal processes could determine much of the sounding music without the interference of taste or expression—and, perhaps, without the interference of politics. While Reich was happy to discuss how his early work grew into and out of the contemporaneous political climate—how it spoke to anxieties in American public life and in his own private life at the time—his focus moving forward was decidedly dry, objective, "disarmingly technical." What is clear is that Reich moved from association with composers and artists at places like the SFTMC toward an avant-garde that was more centrally concerned with de-materialization, objects, and non-representational media. His 1968 essay came on the heels of his outgrowing San Francisco and moving back to New York, which also moved him away from the happenings and the SFTMC, and toward a downtown New York scene characterized by Cage's aleatory and silence, Morton Feldman's graphic notation, and the minimalist sculpture of LeWitt, Frank Stella, and Ricahrd Serra. This coincided with a cultural disaffiliation of Jewish Americans with the Civil Rights Movement as it took on a black nationalist tinge—discussed by Sumanth Gopinath in his 2011 article on *Oh Dem Watermelons*. Reich's move was from West coast to East coast, but a left-to-right move does not map so neatly onto this transposition. Rather, his performance of anything to do with politics receded, leaving in its place an objective minimal music.

The apparent absence of subjectivity was something to be attained and maintained through careful technical design and process, and something that resulted in a different sort of listening. Technology and technomorphic qualities fulfilled this dual responsibility nicely. On the one hand, mechanical objectivity necessarily precludes the possibility for a familiar kind of music-compositional expressivity by filtering and processing typical musical objects; on the other hand, these different processes also transformed and organized sounds in ways that afforded different responses by the listening subject.

If Reich succeeded in removing his own subjectivity as composer from pieces like *It's Gonna Rain*, he did so via these mechanical, technological, and supposedly impersonal processes. The relationship of self to other is the site of myriad dynamics of power and agency, "sporting, or sexual, or political." No matter their nature, these relationships give rise to order, form, and hierarchy. In other words, subjects are always *subject to* each other. In the case of *It's Gonna Rain*, there are two subjects at and, and these two subjects exist in a clear hierarchy. In this confluence of power, technology, and process, Brother Walter's recorded voice is a vehicle for his subjectivity, but his speaking voice is subject to Reich and his "impersonal" process. In what follows, I consider the various forms of agency which Reich attempted to abnegate or erase along with forms of voice in his compositional process.

Agency and Objectivity

That a composer would exercise agency over the musical elements of her composition makes perfect sense—especially in the light shed by the tradition of Western classical music. This type of music has long consisted of sounds carefully arranged, notated, and performed. To compose in this tradition is to impose a particular order upon musical sounds and upon the musical bodies of instruments and performers. The agency of the composer in classical music is a self-evident matter of fact, and the patients of this agency are numerous. Within this composed/imposed musical order, myriad subjects and objects—both sonic and non-sonic—exist in relationships of power over one another. These relationships are codified in rituals of concert and performance etiquette, as rhythmically regular as the music they were formed around.[25] Indeed, musical culture echoes many of the formal hierarchies immanent in the very music around which the culture revolves.[26] Among the most prominent of the formal hierarchies that govern the organization of musical objects is diatonic tonality.

In tonal music, basic musical things such as keys, scales, notes, and chords take on status and function relative to one another. The relationships between the things of tonal music is inherently hierarchical and, indeed, the relationships between them are most often cast in terms of spatial metaphors: pitches are mapped onto continuums from low to high; key areas exist nearby or far from

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[25] Caroline Levine's discussion of the rhythms of tradition and ritual begins promptly at the start of her third chapter in *Forms*, 49.

[26] Lisa McCormick, *Performing Civility: International Competitions in Classical Music* (Cambridge: Cambridge University Press, 2015); Barry Shank, *The Political Force of Musical Beauty* (Durham: Duke University Press, 2014); Fink, *Repeating Ourselves*.

present pitch-centers. As music passes in time, motives and melodies can seem to pass through this imagined tonal space, and it is in this sense that metaphor creates a link between dimensions of experience. Nonetheless, the motives and melodies that make up tonal music can also seem to move in other ways. Some motives appear to pass through time and space with ease while others appear to encounter resistance. Some melodies move with utter predictability, others with volatility; some with delight, others with apprehension. It goes without saying that non-sentient musical objects don't actually experience any of these things; rather, it is the human listener who projects these experiences sympathetically onto the perceived movement of musical objects through a metaphorically supported tonal space. That said, there has been a long-standing tendency to speak and to write about musical things as though they were in fact capable of such experiences, as though there were musical agents who exist within their own musical world and experience other things internal to that world. Compared to the composer's agency over the elements of her music, of course, the agency of musical things makes less earthly sense. Melodies don't *actually* experience delight or apprehension, even as they might actually move through time and (metaphorical) space, giving rise to various causes and effects. Discourses of musical analysis and interpretation thus prove to be germane to greater questions about the relationship between experience and agency.

The debate over non-human action and agency has been rehearsed most recently and prominently by Michael Gallope and Richard Taruskin in a set of exchanges around Gallope's article,

"Why Was this Music Desirable? On a Critical Explanation of the Avant-Garde."[27] Among other things, they take different approaches to the historiographical implications of philosopher/sociologist Bruno Latour's theory of how human and non-human "actors" associate with one another within massively complex social networks. As Latour sees it, these associations leave ephemeral traces for sociologists—traces now taken up by a host of humanistic researchers—to recover and reassemble such that some picture of the social life of humans and things might come into focus. In Latour's "actor-network theory," something need only "modify a state of affairs by making a difference" to be considered an actor. For Taruskin, by contrast, historical agents must be held accountable for their causes and effects and, therefore, must be sentient.[28] As Taruskin sees it, Latour's actors encompass nearly all things, rendering the notion uselessly broad and undifferentiated; in Taruskin's view, only humans can be properly called agents. Gallope counters this by aligning his own view with a tradition of psychoanalysis that takes desire as something not entirely reconcilable with statements and actions, and that therefore renders humans as historical subjects whose motivations cannot simply be inferred through invocations of consciousness and accountability. To say that the capacity for agency is contested theoretical ground would be an understatement. Yet while it may at first glance seem odd

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[27] Michael Gallope, "Why Was This Music Desirable?: On a Critical Explanation of the Avant-Garde," *The Journal of Musicology* 31, no. 2 (Spring 2014): 199–230; Richard Taruskin, "Agents and Causes and Ends, Oh My," *The Journal of Musicology* 31, no. 2 (Spring 2014): 272–93; and, finally, Michael Gallope, "Michael Gallope responds," *The Journal of Musicology* 31, no. 2 (Spring 2014): 297–98.

[28] Relatedly, they argue the terms and conditions of historiographical causality, by which Gallope critiques Taruskin's notion of "true history" and by which Taruskin upholds his non-causal yet optimistic stance on the pursuit of new historical knowledge and understanding. Also contributing to 2014's conversation on this topic is Benjamin Piekut, "Actor-Networks in Music History: Clarifications and Critiques," *Twentieth-Century Music* 11, no. 2 (2014): 191–215.

that such battles would be waged over the esoteric musical repertories of the Cold War avant-garde (which is indeed the ground over which Gallope's and Taruskin's exchange plays out), this protracted historical moment—one defined by the threat of nuclear annihilation—shares a principal concern with philosophical debates over the nature of agency. Albeit in very different senses, what was at stake in the Cold War is what remains at stake in theories of agency: the physical and theoretical delimitation of humanity. While philosophical quarrels like Taruskin's and Gallope's pose no physical violence, it is entirely reasonable that anxiety and even some combativeness would attend the contemplation of what does or doesn't distinguish humans from animals and non-living things. As academic concerns go, these stakes are high. Agency is fundamental to human experience, regardless of the extent to which it is shared with non-humans, and it is not so solipsistic to see this human agency as somehow apart from the shared capacity to "make a difference." What is curious, and perhaps telling of our social nature, is that humans would also tend to project fundamentally human traits—including, but not limited, to agency—onto a wide variety of non-human things.

Anthropomorphism appears to be an innate human psychological phenomenon.[29] From seeing faces in clouds or wood grain to humanizing the facial expressions of our pets, people parse the objects of the world into an order that makes human sense. While further theorization of these more general phenomena is well outside the scope of the present chapter, the historically and culturally

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[29] Stewart Elliott Guthrie, *Faces in the Clouds: A New Theory of Religion* (New York: Oxford University Press, 1993); and, for a more recent perspective on the social cognition of anthropomorphic associations between humans and animals, see Esmerelda G. Urquiza-Haas and Kurt Kotrschal, "The Mind Behind Anthropomorphic Thinking: Attribution of Mental States to Other Species," *Animal Behaviour* 109, no. 1 (2015): 167–76.

predominant discourses of musical analysis and interpretation in the Western tradition have been especially rich sites of anthropomorphism and the project of agency onto non-human things. In particular, the persistence with which agency has been projected onto musical objects in Western musical hermeneutics admits a cultural propensity for empathizing with and through anthropomorphized musical sound.[30]

For many European and American composers throughout the twentieth century, dissonance represented the possibility of freeing music from the strictures of the inherently hierarchical and predominant organizing principle of tonality. In 1926 in Berlin, Arnold Schoenberg analogized the atonal principles of dodecaphonic music to an "emancipation" of dissonance.[31] In New York City in 1946, composer Lou Harrison described the dissonant counterpoint of his former teacher Carl Ruggles as "a community of singing lines, [each] living a life of its own."[32] Composer and bandleader Duke Ellington likened the role of dissonance within tonal music to the African American experience: "Dissonance is our way of life in America. We are something apart, yet an integral part."[33] For his part, John Cage sought to overturn sonic inequality *tout court*—his "anarchic societies of sound" were populated by sounds, noises, and silences that lay supposedly equal claims to beauty.[34] While each of these musicians took different stances on how to navigate and (re)compose

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30 Seth Monahan, "Action and Agency Revisited," *Journal of Music Theory* 57, no. 2 (Fall 2013): 321–71.

31 The phrase "Emanzipation der dissonanz" first appears in Schoenberg 1926, "Opinion or Insight?" and a robust discussion of the phrase and its implications can be found in Stephen Hinton, "The Emancipation of Dissonance: Schoenberg's Two Practices of Composition," *Music & Letters* 91, no. 4 (November 2010).

32 Lou Harrison, "About Carl Ruggles" [1946], reprinted in *The Score and I.M.A. Magazine* 12, no. 15 (1955).

33 Mark Tucker, ed., *The Duke Ellington Reader* (New York: Oxford University Press, 1995), 150.

34 Rob Haskins, *Anarchic Societies of Sounds: The Number Pieces of John Cage* (Saarbrücken: VDM, 2005).

the hierarchical structures of music, each agreed that dissonance was to be embraced rather than avoided, and that the disparity between consonance and dissonance under the law of tonality reflected a real-world social diversity, inequality, or even injustice.

Indeed, listening through the Western classical canon from which these tonal laws were inherited can leave one with the impression that there had been in eighteenth- and nineteenth-century Europe an almost fascistic policing of musical harmony. Many of the words composed during this time can sound quite similar to each other, an impression captured by the idea that this was a period governed by a "common practice." For many casual listeners, classical music presents itself as an undifferentiated wash, a genre of pleasant-sounding orchestras and choirs, useful insofar as it can help to make homework or housecleaning a little more bearable. And yet, to the connoisseur, there are rich and innumerable differences to be found between works of classical music and, for that matter, between pieces written by the same composer in the same year, in the same genre, and for the same instrument(s). It is this refined listener who, in the course of their often florid accounts of musical drama, tends to ascribe agency to musical objects, who hears the rules of tonality such that intra-musical subjects sound like agents working within or against the constraints of classical style, and who, depending on their tastes, might sympathize with the emancipation of dissonance (even if this listener doesn't exactly *enjoy* the sound of late Schoenberg). Recognizing the effects of a law—tonality included—generates perceived subjects of that law. Recognition of a consonance–dissonance hierarchy must precede the perceived toppling of that hierarchy via subversive acts of musical composition. In the analysis and interpretation of music, theories and hermeneutic models exist to articulate law and hierarchy. Insofar as this is the case, these theories and models can then illuminate where and how these laws and hierarchies are variously challenged and/or maintained by their

constituent subjects. To new listeners, the difference between a standard sonata form and a sonata-rondo may take effort to understand and to hear; for them, much of James Hepokoski and Warren Darcy's meticulous *Elements of Sonata Theory* may, at least for a time, be unintelligible. It speaks to the depths of these scholars' analyses that even the most seasoned classical aficionados may need to listen through the same Mozart concerto a number of times before they apprehend the analytical truth of a "rotationally participatory module."[35] Whether conspicuous or fine-grained, there are always more differences to hear—always more element- and product-objects to differentiate with analytical ears.

Formal analysis both results from and asks for close listening. Both its writers and its readers are tasked with being detailed, diligent, and discerning. Musical objects that are differentiated and dislodged by theoretical methods are inscribed by way of analysis into new formal relationships, including hierarchies with constituent subjects. Analysis thus enacts an ontological shift of differentiated musical object to musical sound as subject of hierarchical form. And it is in this shift from object to subject that anthropomorphism adheres. For instance, the basic classification of classical-style cadences is a means of identifying certain musical objects so that an analyst may articulate both their relative sameness (as cadences) and their relative difference (with regard to harmonic content). However, this analytical classification also assigns different harmonic *functions* to different cadence-types based upon their harmonic *content*, and these functions are then cast in

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[35] James Hepokoski and Warren Darcy, *Elements of Sonata Theory: Norms, Types, and Deformations in the Late-Eighteenth-Century Sonata* (New York: Oxford University Press, 2006), 552.

analytical discourse as the greater or lesser capacities of each cadence-type to structure a musical work. For example, an imperfect authentic cadence is capable of establishing a key area in a way that an inauthentic cadence is not. A perfect authentic cadence can *also* establish a key area, but in a way that an imperfect authentic cadence cannot. Because key areas are so important to formal organization in the classical style, this capacity of cadences with respect to the establishment of keys is a significant one with much influence over analysis of its repertory. I expect that the reader may now be thinking, "It's not so much that imperfect authentic cadences *can't* necessarily establish keys as well as perfect authentic cadences; it's that they weren't historically used to establish keys in the same way: this is a matter of convention, not some innate capacity!" And such a response is precisely the point: Humans tend to project what is human—desire, stress, emotion, skill, capacity, and agency—onto non-human things as a means of explaining things and their actions.[36] This explanatory anthropomorphism, however, would appear to say more about how people perceive the actions of things than it does about how and why things act the way they do. In the case of music theory, imperfect authentic cadences turn out to be able to establish secondary key areas just as well as perfect authentic cadences can—and, I should add, for casual listeners, they very well might. What holds these differentiated cadence types in hierarchical relationships with regard to harmonic and formal function is not some innate music of the spheres but rather a set of analytical and interpretive conventions that are themselves derived from the compositional and stylistic conventions that established tonality's hierarchies of musical objects in the first place. Attesting to all of this is the

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[36] Arnie Cox, *Music and Embodied Cognition* (Bloomington: Indiana University Press, 2017).

ubiquity of anthropomorphism and the projection of agency onto musical objects-turned-subjects in analytical and interpretive discourse. The omnipresence of agential descriptions in analytical discourse led Seth Monahan to revisit the respective agential theories of Edward T. Cone and Fred Maus to construct a clarified classification and hierarchical model of the anthropomorphized musical agents that appear most prominently in analytical writing on music.[37] His model is a keen diagnosis of the predominant hermeneutics of Western classical music, which, as I will argue further in this chapter, was also an implicit object of critique for experimental repertories.

In the following sub-sections on agency and agent-classes in music analysis, I use *It's Gonna Rain* and Reich's 1968 essay "Music as a Gradual Process" as prime examples of the mid-century trope of self-abnegation on the part of the composer or artist. As I have already noted, the repetitive processes described in his essay were the primary technical means by which Reich attempted to remove himself from his compositions. This repetition and purported removal of self, however, implicated his process-based in music in political concerns, as thoroughly discussed by others in their analyses of *It's Gonna Rain* and *Come Out*. Beyond the sheer repetition and technological mediation that distinguish these works for magnetic tape from traditionally composed music, the political problematics of this music can also be expressed through the terms of music analytical discourse. By appropriating the sound of their voices and deploying them within contained musical compositions, Reich subjected the voices of Walter and Hamm to the perceived agential constraints of a culturally

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[37] His description of the four "agent classes" begin on pages 327–33 in Monahan, "Action and Agency Revisited"; diagrams and charts begin on page 334.

prevalent hermeneutics derived from Western art music. The melodies and rhythms of the classical canon do not think or speak *for themselves*; rather, they are subject to the agency of the composer who expresses something through them. Although Reich's rhetoric casts his technologically mediated repetitive processes as impersonal and somewhat autonomous, the voices of Walter and Hamm become melodies and rhythms, subject to the composer's whims. What's more, the repetition of their voices reduced spoken word to semantically satiated sound, and this apparent de-vocalization is representative of more wide-ranging implications for the perception of agency, voice, and performance in the predominant hermeneutics of experimental music. Through modifications to Seth Monahan's model of agent-classes in music analysis, I analyze Steve Reich's *It's Gonna Rain* for magnetic tape as a site of intervention into the conventional relationships between composer, performer, work, and audience. Reich makes his technologically mediated intervention both compositionally and rhetorically, with implications for the voice of the performer, the politics of experimentalism, and perceptions of agency in the hermeneutics of musical minimalism.

Agent-Classes and Steve Reich's Tape Works

Seth Monahan's theory takes diagrammatic form as a ladder of musical agent-classes (Fig. 5). From the top down, the hierarchy runs from analyst to the analyst's "fictional" representation of the composer, then down through the "work-persona," and finally to the individuated elements of the music at hand. Each of these four agent-classes represents a discrete category of discursively salient agential attributions that writers of all ilks have deployed for centuries in Western music analysis.

These agent-classes appear with consistency and, what's more, they tend to interact with one another in consistent ways.[38] The upper two agent-classes—analyst and fictional composer—belong to and can act within both the intra- and extra-musical worlds; the work-persona and the individuated musical elements, however, constitute a fundamentally musical world and can only act within that world.

On the one hand, the literature Monahan takes as the object of his meta-analysis is rarified: the musings of theorists and musicologists represent a literary niche at best. On the other hand, analytical writing often enough takes the form of a studied and condensed style of the language that circulates among classical music enthusiasts, academic or otherwise, such that this way of characterizing music has a purchase in texts and discourse outside of the academy. Although the prose that meta-analysts such as Monahan, Cone, and Maus scrutinize is esoteric, it would be a mistake to think that it is entirely cut off from other, more culturally prevalent discourses of music. Academic music analysis can instead be understood to be a highly specialized form of writing about music that exploits features common to musical hermeneutics of genres both popular and elite. From this point of view, Monahan's theory can be seen to describe tendencies in music analytical writing as well as the culturally prevalent anthropomorphic-interpretive paradigm that underpins and, in fact, precedes this writing. Insofar as academic analytical discourse maintains some fidelity to a broader musical hermeneutics based in anthropomorphic agential attributions, Monahan's theory of

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[38] Fred E Maus, "Music as Narrative," *Indiana Theory Review* 12, no. 1 (Spring and Fall, 1991): 6; Rebecca Leydon, "Narrative Strategies in Debussy's Late Style" (PhD diss., McGill University, 1996), 34.

analytical discourse is also a theory of the kind of musical hermeneutics that circulate in less thoroughly theorized listening practices and creative norms.

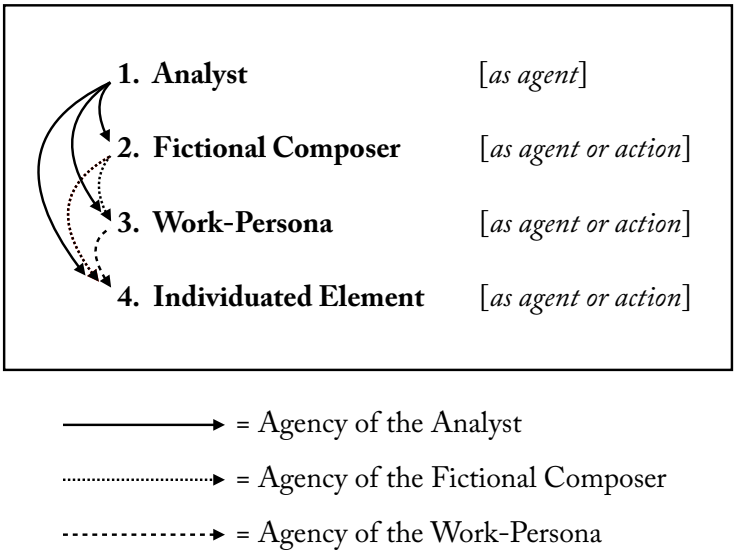

Fig. 5: Seth Monahan's Diagram of Music-Analytical Agent-Classes

Experimental composers were paradigmatically concerned with the breaking and recasting of these practices and norms. The many ways in which they tested relationships between themselves, their performers, and their viewing, listening, and thinking subjects offer revisions to the ordinary interactions of musical agents. I suggest that these revised relationships of experimentalism can be diagrammed as modifications to Monahan's analytical model. His theory thus becomes a diagnostic tool for analyzing the breaking and recasting with which experimentalism concerned itself, as well as for determining whether this breaking and recasting was successful or not. In particular, the two sections that follow center on the main interventions by Reich's process-based American minimalism

into music-analytical and hermeneutic norms: the twentieth-century trope of composerly self-abnegation, and the technological mediation of individuated elements of music. Both involve new and different agential attributions and abnegations, which disrupt the otherwise orderly downward flow of agency in Monahan's ladder of agent-classes. To the extent that these disruptions complicate some of the core principles of music-theoretical analysis, sustained theoretical attention to the perception of composer, performer, and listener agency in experimental musics can help to sort out some of the longstanding conflicts between experimental repertories and the disciplinary practice of music analysis.

Agential Attributions

Experimental music did not diverge entirely from the interpretive norms as laid out by Monahan's theory of agent-classes. As I have already noted, try as he might, Cage could not expunge his personality from his music. Far from disappearing into a mist of self-abnegation, Cage has become one of the most recognizable figures of modern American musical composition. In fact, experimental musics by and large did not retreat from anthropomorphism as a guiding interpretive paradigm; rather, they embraced it as a means of reimagining the capacities and the bounds of musical sound and organization (something evident in the social/political metaphors invoked by Schoenberg, Ellington, Cage, and others). This sonic-social reimagining begins at the bottom rung of the agent-class ladder with what Monahan calls the "individuated elements" of music. These individuated elements include the sort of melodies or rhythmic motives that constitute the basic material of a

musical work: melodies may be said to wander aimlessly or to move with purpose, for example; rhythms may seem either hesitant or insistent. Such agential attributions, though, also tend to adhere to some general discursive constraints in the literature of music analysis. As Monahan notes,

> Typically, individuated elements can be understood to live and act in a fundamentally musical world. Though they are often realized [in analysis] through extravagant anthropomorphic metaphors, their actual tasks, encounters, and desires are ultimately musical ones with no direct real-world analog.[39]

Though often extravagant, anthropomorphism with regard to musical elements is generally limited to feelings or behaviors germane to their fundamentally music worlds. Analysts don't tend to say, for example, that a melody sounds hungry or thirsty because, generally speaking, real-world objects of need such as food and drink tend not to play any part in fundamentally musical worlds. Rather, musical agents tend to desire and to pursue things that satisfy strictly musical concerns, such as structural closure, harmonic stability, or motivic coherence. These concerns may be positively or negatively valenced in the mind of listener, but they ultimately lack real currency outside of the musical drama as represented by the "work-persona."

Immediately above these intra-musical, individuated elements is what Monahan calls the work-persona, or the "unitary and continuous" character or quality of a single piece or movement. The work-persona is most often cast in analysis as a determined and single-minded psyche that, over the course of the music, is variously confirmed or complicated by the individuated elements which

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[39] Monahan, "Action and Agency Revisited," 327.

constitute it. Despite its elevated agential status, its anthropomorphic desires are also conventionally confined to its fundamentally musical world. Although the work-persona enjoys some further self-consciousness and knowledge of its own qualities and characteristics, its volition is limited to the intra-musical: it seldom appears to be aware of things outside of the work. The relationship between the work-persona and its individuated elements can be understood as one of the most apparent examples of the relationship between product-object and element-object: these two agent-classes are part and whole as conceptualized by the act of analysis. Unlike the bidirectional ontological continuum of products and constituent elements, however, the agential relationship between Monahanian work-personae and individuated elements is a one-way street. Although melodies and rhythms may be important parts of the whole that is the work-persona, they nevertheless do not conventionally appear to be able to exercise their agency upward. That is, individuated elements of music are often said to act upon each other, but not directly or consciously *upon* the work-persona. The work-persona, on the other hand, may appear to act as an independent entity or, in some cases, it may be said to bend its constituent elements to its will. Thus the lowest dotted arrow representing the "agency of the work-persona" extends downward to the individuated elements. Indeed, *all* of the arrows of agency in Monahan's model extend downward as they trace the path of agential influence.

That the analyst would occupy the highest rung on the agent-class ladder emerges naturally from the terms of production of analytical discourse. To conduct analysis upon a composer's music is to exercise a form of interpretive agency over all the parties of a work. The uneasy relationship of analyst to composer is an effect of this agential disparity, as well as the inevitably fictional version of the composer invoked in analytical writing. This fictional version is akin to most journalistic writing on a well-known figure, whether the individual be a politician, athlete, or artist. Thus the "fictional

composer" (as a creation of the analyst) occupies the second rung on the agent-class ladder, followed by their composed work-persona(e) and individuated musical elements. These lower two agent-classes of music analysis—numbers three and four on the ladder—are separated from the upper two by their confinement to the "fundamentally musical world." Whereas the analyst and composer—albeit a fictional one—exist in the "real world," the lower two agent-classes are, within Monahan's model, utterly cut off from the real world. That they would be so readily anthropomorphized in analytical discourse may be attributable to the fact that they are so conspicuously non-human in this sense. These agent-classes are hierarchized and nested in alignment with the sort of human exceptionalism espoused by Taruskinian historiography. In the rhetoric of "Music as a Gradual Process," however, the anthropomorphic tendencies of individuated musical elements and the work-persona are thrown into a decidedly technomorphic light, and these two intra-musical agent-classes are complicated.

The particular interactions of human and machine in his early tape works has led analysts and critics to raise questions about the interrelationships of music, sound, speech, language, and noise in these pieces, and to raise concerns about a white composer's appropriation of a black man's voice for the purposes of musical experimentalism. As noted above, both *It's Gonna Rain* and *Come Out* are situated now more than ever in a problematic politics of the musical avant-garde. Their critique of Reich's music runs counter to the composer's hearing of his own works, which he said were meant to "keep the original emotional power that speech has while intensifying its melody *and* meaning through repetition and rhythm."[40] As I observe, for Scherzinger this description is a case in point:

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[40] Reich, *Writings on Music*, 20.

Reich's rhetoric regarding these tape works is "disarmingly technical," not least because his emphasis on the potential of the phasing process as modern compositional technique distracts from the political implications of reducing voice to unintelligible sound.

Agential Abnegations

Reich's pieces for tape make easy targets for critique with regard to limitations of performer agency. Listening to a recorded voice and its subsequent sonic deconstruction makes abundantly clear how a composer's pursuit of technical, musical innovation had overshadowed the problems of using Walter's and Hamm's voices as a part of this pursuit. Less obvious, however, is that Reich's rhetorical intervention into the agential relationships at play in his compositional process also constituted an attempted intervention into how the agential relationships in his music would be heard and interpreted. In other words, Reich's self-abnegation of composerly agency partakes of a kind of music-analytical discourse in order to circumvent the problematics identified by Scherzinger and others. Below, I take a first pass at using Monahan's diagram of anthropomorphic agent-classes in music-analytical discourse as a tool to illustrate the agential interventions Reich attempted in his analysis of his own music.

In Figure 6, the fourth and lowest agent-class (the "individuated elements" of the sounding music) remains unchanged. Immediately above, however, the third agent-class (previously the "work-persona") is now renamed for Reich's musical processes and the "material that runs through them," which combine in order to produce the sounding music (the individuated elements). Despite the fact

that Reich gives idiosyncratic names to these lower two agent-classes, his rhetoric only reinscribes the normative agency of the work-persona / processes and material over the sounding music. The deeper intervention into conventional anthropomorphic musical hermeneutics takes place higher up on the ladder of agent-classes.

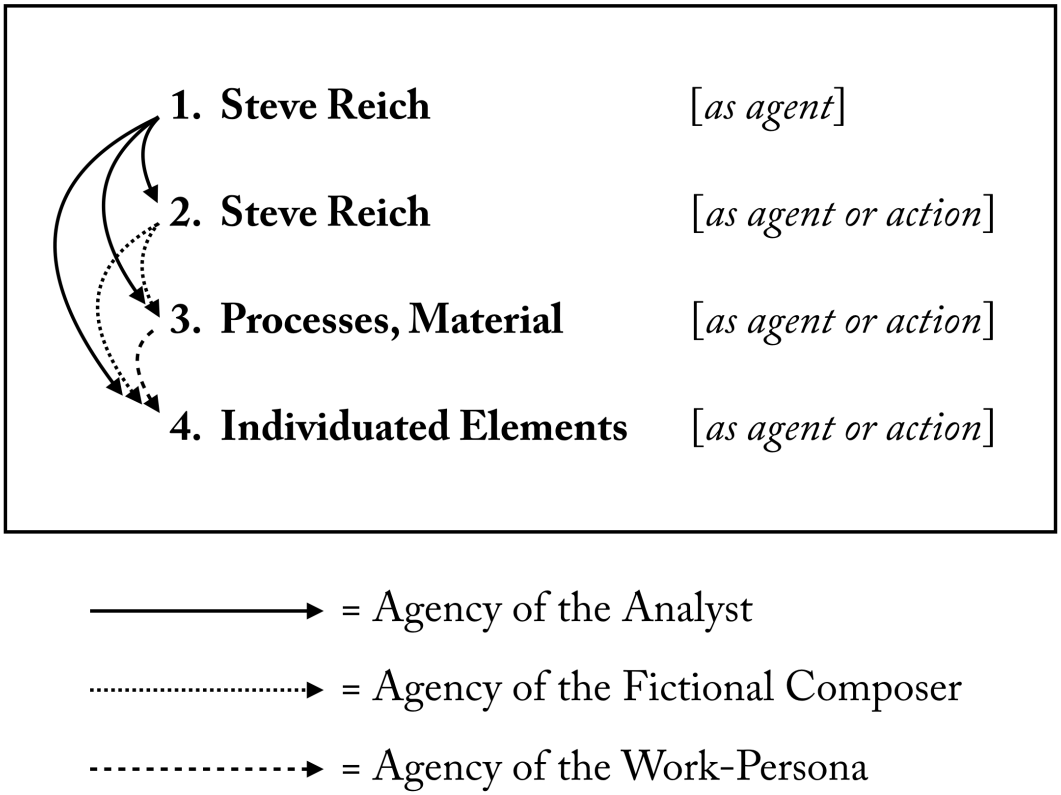

Fig. 6: Monahanian Diagram of Steve Reich's Analysis

First, note that in Figure 6 the name Steve Reich appears in both of the upper rungs of the agent-class ladder (usually reserved for the "fictional composer" in the second rung and the analyst at the top rung). In the original application of Monahan's model, this would not normally be the case.

Because this theory describes music-analytical discourse—almost always written by someone other than the composer—these two rungs of the ladder ordinarily belong to two separate figures (one of whom is often an eighteenth- or nineteenth-century composer, long since deceased). To diagram Reich's 1968 essay as a form of analytical discourse using this model thus diverges from the original application of Monahan's theory, and yet its adaptation in this context can help to illuminate Reich's rhetorical strategy as self-analyst and the forms of agency that this strategy ignores.

Reich's essay took the form of many artist statements that appeared around the same time: a manifesto that articulated deviations from ordinary creative process, and that forged an ideal image of the working artist/composer. In writing and publishing "Music as a Gradual Process," Reich performed as self-analyst of his music, using this power to cast himself in his own writing as the "fictional composer" he wanted to become. Of central concern to Reich as both analyst and fictional composer, both of whom wanted to remove subjectivity from creative process, was that his musical process run by themselves as they turned composed material into a musical work. To establish the agency of his musical processes, he denied his own; he rhetorically relinquished composerly control over the sounding music, displacing his agency and projecting it onto a combination of musical material and musical process. This proclamation of semi-autonomy on the part of musical processes is an abnegation of normative composerly responsibility, and this self-abnegation is represented in Figure 7 by an agential barrier (in red) that bars the fictional composer (Steve Reich) from any direct control over the individuated elements of his music (the arrow representing the agency of the fictional composer between agent-classes 2 and 4 is colored red to reflect this barring). As self-analyst, Reich maintained agency over each party in his compositional process, and used this agency to fabricate a self-abnegation of agency as composer of his own music. Whether or not these agential

abnegations were successful, they constituted Reich's cultural intervention into the predominant hermeneutics of classical music.

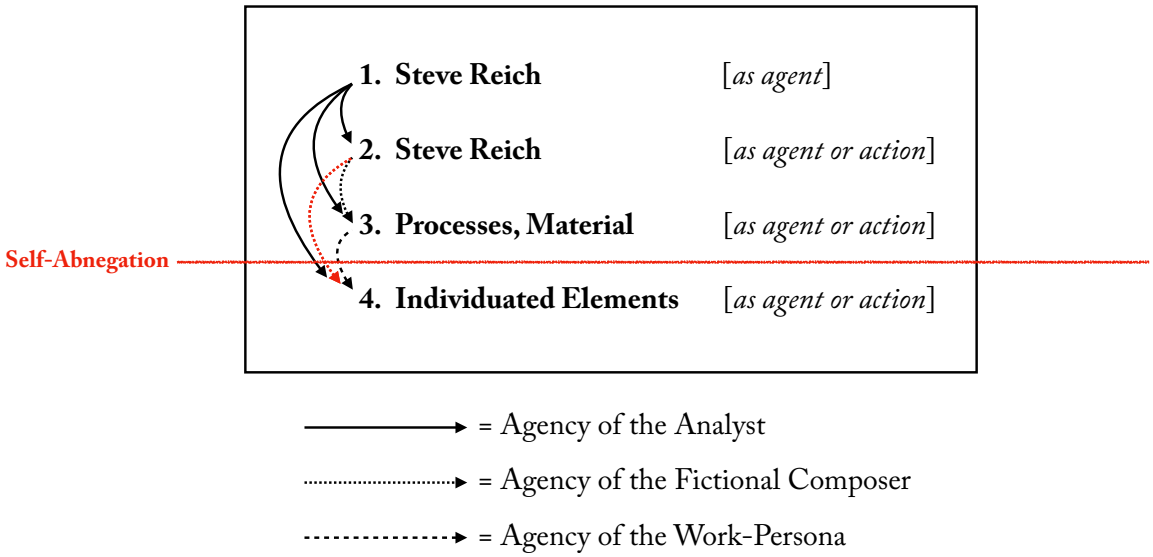

Fig. 7: Monahanian Diagram with Self-Abnegation

Reich's rhetoric of composerly self-abnegation instantiates a prevalent trope that unites a number of twentieth-century avant-garde artists and composers: the aspirational removal of subjectivity from art and music. A number of artists and composers attempted this removal of themselves from their creative work, most often accompanied by statements of how the artists or composers went about removing themselves from their work and why this erasure of subjectivity was such a good idea in the first place. Implicit or explicit in these statements of intent is the notion that the removal of *subjectivity* from the creative process would leave, in its place, an *objectivity* that rendered their works of art and music non-representational, non-referential, unmarked by its artist or composer, not expressive in any traditional sense. An analytical perspective skeptical of Reich's

rhetoric, however, would maintain that the conventional relationships between agent-classes as shown in Monahan's ladder continue to hold in Reich's process-based music. A point of clarification: the ladder of agent-classes is a meta-analytical tool in the first place—it is a means of diagramming the anthropomorphic metaphors perpetuated in discourses of music analysis, not a theory of what's *really going on* in some transcendental sense. At the same time, the analytical discourse reflected in the ladder of agent-classes also derives from a centuries-long, culturally ingrained hermeneutics of music in the Western tradition. Reich's interventions into—or perhaps divergences from—traditional hermeneutics are explicit and may even be aesthetically salient. They can be diagrammed neatly in Monahan's model precisely because they react to the established music-analytical perspective his model is designed to show. And yet, reasserting a conventional configuration of agent-classes in Reich's music represents one way of critiquing his purported removal of subjectivity from his compositional process.

Everything that transpires between agent-classes does so according to the composer's design—how could it be otherwise? There is something rather dictatorial about this situation, and yet the monocracy of the composer is an assumed fact in both standard compositional practice and in standard analytical discourse. This monocracy is an innocent one insofar as its subjects are anthropomorphized and not actually human—so long as they are only characters in a drama, and their real-life performers and actors suffer no ill effects of this dictatorship. But the contractual agreements between composer and performer—whether social, dramatic, or legal—have been unsettled in a number of ways by experimental musical repertories. The politics of musical performance in the music of John Cage, for example, is the subject of intense study and scrutiny, in part because Cage drew so much attention to the removal of his *own* subjectivity and expression from

his compositions. The political nature of the composer's monocracy, however, raises questions as to how much Cage's self-abnegation also restricted the agency of his performers. What does it mean when the composer's technical experimentation with compositional process imposes a self-abnegation of subjectivity, expression, and agency by his performers?

In Reich's process-based phasing pieces for magnetic tape, Brother Walter and Daniel Hamm retroactively became performers in an experimental music wherein their voices are ossified, repeated, layered, phased, and reduced to unintelligible yet distinctly musical sound. In *It's Gonna Rain* (1965) voice and performer threaten to upend both Reich's rhetoric and the conventional relationships between agent-classes in musical hermeneutics. As shown in Figure 8, Walter's voice can appear as fictional composer—the author of his own excerpted sermon—as the musical material which combines with the phasing process, and as the sounding music which results from combination of material and process.

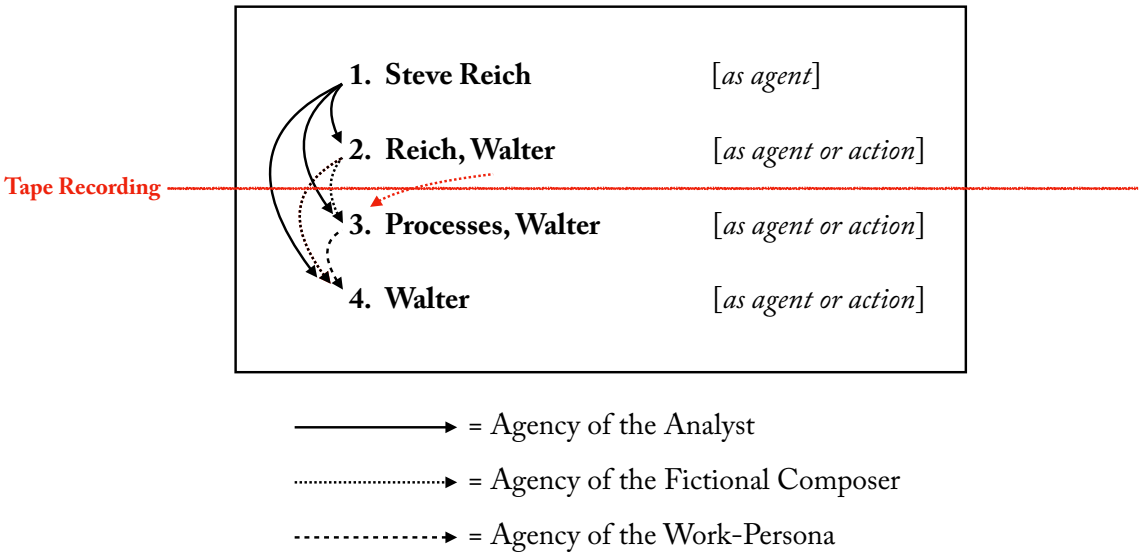

Fig. 8: Monahanian Diagram with Tape Recording

Despite his triple appearance in agent-classes 2–4, Walter's voice is immediately wrested from the terms of its production by Reich's tape recording (represented by the red bar in Figure 8). As a preacher, Brother Walter was at one time in full control of his sermon. But once the recording was made, Walter had no part in the experiments Reich performed on his voice. Thus, technological mediation rendered Walter powerless over any further vocal inflection or communication. In *It's Gonna Rain*, Walter the fictional composer of his sermon is denied agency over his representation in Reich's musical material which runs through his musical process or in the individuated elements which result. (This denial of agency via technological mediation is shown by the red arrow in Figure 8.) The barrier imposed by Reich's use of tape recording strips Walter of his agency as performer and, from this critical perspective, this denial of Walter's agency would seem to reaffirm Reich's own agency as composer. After all, he made the tapes, cut the loops, and conducted his process-based experiments on the sounds of Walter's voice. And yet, the technological mediation of Walter's voice which strips him of his agency as composer bears a striking resemblance to the technological mediation which allowed Reich to self-abnegate his own composerly agency. Reich's processes which, "once set up and loaded, run by themselves" may well be technomorphic, but their automatism in his rhetoric renders them as neutral and alienating as the tape recorder.

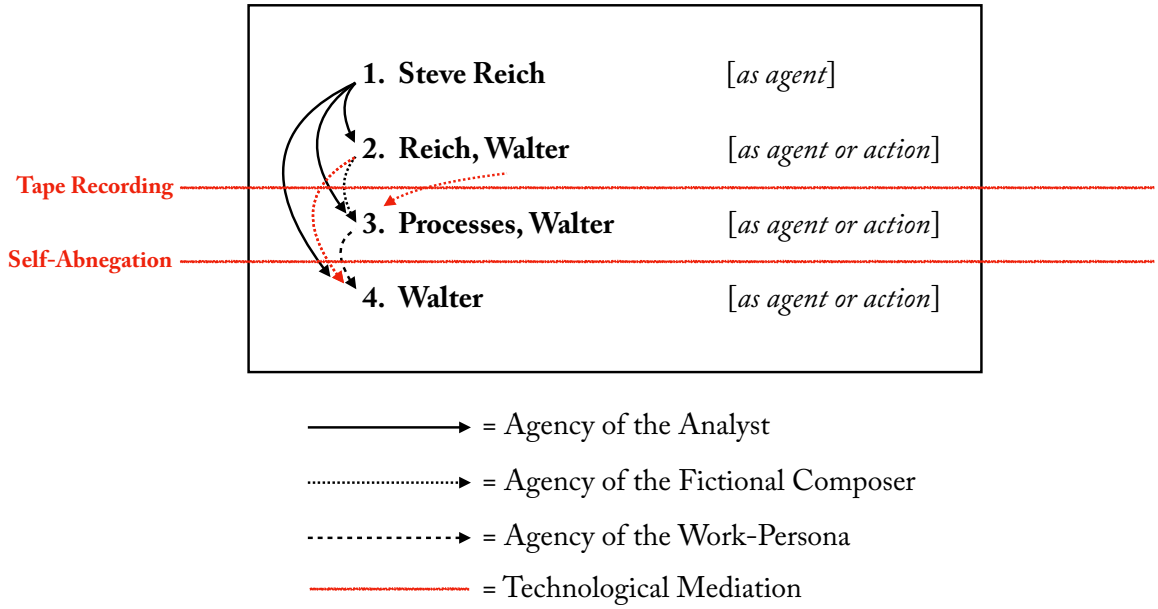

Fig. 9: Monahanian Diagram with Self-Abnegation and Tape Recording

Figure 9 shows a cumulative diagram wherein the effects of technology—whether mechanical or metaphorical—are incorporated into the agent-classes of music-analytical discourse and the culturally predominant anthropomorphic musical hermeneutics which Reich breaks from. In this reconfiguration of Monahan's diagram, the ability of conventional analytical discourse to account for the multiple layers of mediation and technomorphism already begins to show. This double mediation introduces new conceptualizations of agent-classes which may variously perforate a purported membrane between the musical and real worlds—the question is how that membrane seems to work, and for whom it appears to work. The intra-musical world of agent-classes 3 and 4 has a form and structure audible to the real world, but exists apart from it. And it is this intra-musical world—available via *ouïr* and *entendre*—that Schaeffer sought to isolate from the representational and historically contextualized instrumental sounds of classical music. But the individuated elements of

Schaeffer's *musique concrète*—and, later, Reich's tape pieces—were technologically mediated rather than instrumentally reproduced, with the result that their musical sonic objects are not so easily (re)anthropomorphized. *It's Gonna Rain* thus raises a number of interpretive and analytical questions with ramifications for the politics and power of musical composition. What's more, technology is shown to be a conceptual and material catalyst for an experimental music with a number of stylistic manifestations—American minimalism included.

The musical objects of experimentalism may seem to defy analysis—the agency of the theorist and interpreter—thus exercising some form of resistance to becoming subject to analysis. In befuddling the received tradition of formalism for which Hanslick was the foremost historical avatar, works of conceptual music may be discursively anthropomorphized similarly to Monahan's intra-musical agents, though this anthropomorphism and technomorphism take place in a way that upsets his top-down flowchart. What's more, the capacities of recording technologies to capture the voice—"musical" or otherwise—and reproduce it as an individuated element of music poses challenges to the classes of intra-musical agents typical of music analysis. Both of these wrinkles in the conventions of music analysis can be found in *It's Gonna Rain*. Here, the voice—a marker of agency and the human if ever there were one—is objectified as musical material and, at the same time, is made subject to Reich's phasing process. The political and ethical implications of representation and expression of objectivity here raise questions for the practice of formal analysis and for the expression of objectivity by 1960s American minimalism.

While Reich's attributions of mechanical autonomy might not hold up under much scrutiny, they nevertheless speak to his desire for his listeners to hear the music as coming not from him, but from these metaphorical machines. And hearing musical processes as autonomous machines is key to

musical minimalism's lasting associations with technology, mathematics, rationality, and objectivity. Reich's interest in composerly self-abnegation instantiates the prevalent trope self-removal in art and music, a trope that equated the removal of subjectivity from creative process with the attainment of objectivity with regard to form and content. For Reich, composing with musical processes was meant to allow audiences to listen to sound or music rather than composer, to listen to technology or machine rather than to the human, to listen to form and process rather than emotion, to listen to object rather than to subject. As flimsy as this formulation may seem with binaries laid out plainly, this aspirational objectivity is central to American minimalism's normative aurality.

Agency and Listening

By attributing mechanical autonomy and objectivity to his musical processes, Reich claimed to have outsourced to impersonal technologies and techniques some of his agency as a composer—the sort of agency made audible as the "composer's voice." To accomplish this outsourcing, Reich's analysis of his own music needed to depart sharply from the anthropomorphic allegory of traditional music analysis as shown in Monahan's diagram. The actions of musical processes on the sonic materials that run through them are mechanical and impersonal—more like automation than human action or agency. Reich claims not to *compose* his music directly; rather, he *discovers* processes and then sets them up with musical material to execute; and, of course, nowhere in this 1968 essay on musical process does Reich make his agency as analyst of his own music explicit.

The tendency of analysis and criticism of classical music to anthropomorphize musical sound led Fred Maus to refer to "music as drama."[41] In analytical prose, melodies don't simply unfold through time as they are sung or played; rather, themes confront one another, entire movements seek tonal resolution—the musical compositions themselves are said to act of their own accord and in their own interests. In their descriptions of musical works, analysts tend to project human-like feelings, desires, actions, and agency onto musical sound, creating anthropomorphized musical agents which engage in dramatic narrative. Monahan takes up this anthropomorphic allegory endemic to music-analytical writing and proposes his hierarchical taxonomy of four distinct music-analytical agent-classes.

Monahan's meta-analytical taxonomy of agent-classes is far less deterministic than Cone's notion of a "composer's voice" because while Cone was theorizing what can be heard in music, Monahan was theorizing what others say they've heard in music. Nevertheless, his network of agent-classes is built to diagram some of the same assumptions of top-down agential hierarchy and the sort of dramatic anthropomorphic hermeneutics that narrativizes musical sound in music-analytical discourse.

There is, however, someone—I should say some *body*—who is conspicuously absent from this hierarchical model: and that some *body* is the performer. Monahan discusses the performer at some length as a possible avatar for musical agent-classes—as an alternate guise for a soloistic theme, for example, through which the performer becomes the direct action of the composer as musical agent.

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[41] Fred E Maus, "Music as Drama," *Music Theory Spectrum* 10, no. 1 (Spring, 1988): 56–73.

Monahan also entertains the idea of swapping the analyst with the performer as the topmost agent-class; after all, the performer holds no small degree of influence over the musical representation of the lower three agent-classes—the composer, the work, and its constituent parts. Instead of swapping the analyst out for the performer, however, I would like for now to keep the performer underneath the network—not as a fifth, lowermost agent-class; but, rather, as a musical figure who can support this top-down agential network and who can exercise their own form of agency upon each of the four agent-classes in this model. This is to say that performance can help to shape the particular dramatic, anthropomorphic narrative the analyst projects onto a work's musical sounds—and that music analysts would do well to account for the performer's agency in this regard. But it also seems that—in addition to the sounds they might make—the performer's human, corporeal presence (or absence) in live performance can either amplify or suppress the anthropomorphic tendencies of the analyst and the listener.

In his *Music Theory Online* essay, "Motor Constraints Shaping Musical Experience," Rolf Inge Godøy claims that listeners identify with musical sound via perceived or imagined body motion trajectories.[42] His claim is similar to the underlying premise of Arnie Cox's mimetic hypothesis of embodied musical listening,[43] but with the added through a sort of vicarious experience of what somebody would have to do to produce a given sound—or, at least what the listener *imagines*

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42 Rolf Inge Godøy, "Motor Constraints Shaping Musical Experience," *Music Theory Online* 24, no. 3 (September 2018).

43 Arnie Cox, "Embodying Music: Principles of the Mimetic Hypothesis," *Music Theory Online* 17, no. 2 (July 2011).

somebody would have to do. To make this claim, Godøy aligns himself with a branch of research in linguistics called motor theory, which he says "can be expressed as the tendency to covertly (but sometimes overtly) simulate the body motion that we believe is at the source of whatever it is that we are hearing. . . In the case of music, [this] means mentally simulating instrumental or vocal sound-producing motion." While he notes that motor theory in the 1980s was met with various degrees of skepticism, recent research has corroborated at least its underlying premise: that sound can co-activate motor areas of the brain. Listeners' mental simulation of body motion is, however, not always accurate—I don't know how to play the clarinet, for example, so my mental simulation of clarinet playing will be woefully vague. Finally, there is an added stipulation that the physical and physiological range of imaginable body motion in a given listener constrains their mimetic listening responses—that is, a listener's response to musical sound is shaped by the abilities of their body, the instruments they have played (or that they can imagine playing), and by their singing/speaking voice.

To bring this theoretical framework together: if Godøy's deployment of motor theory in music listening holds, then it is the bodily motion of the performer which provides the listener with a mimetic link between the form of musical sound and the interpretive projection of human action and agency onto that sound. And it is this projection of agency that underwrites the anthropomorphic hermeneutics in which both the "composer's voice" and Monahan's music-analytical agent-classes are active and audible. The anthropomorphism of music analysis might thus derive—at least in part—from the physiological constraints on mimetic simulation of body motion in response to musical sound. In this light, Reich's rhetorical dismantling of the anthropomorphic agent-classes of classical music analysis warrants a rephrasing of my own guiding question. Asking whether the sounds of musical minimalism seem to come more from the musicians involved, or more from the machines

might only be as useful as asking, "if listening to music involves imitation, then does minimalism's listener imitate the musicians or the machines?"

Surely, a listener would partly imitate Brother Walter or Daniel Hamm—imagining and/or embodying what it feels like to produce their vocal sound. But with the degree of repetition and the precise mechanical punctuation of each loop of *It's Gonna Rain* and its gradual musical process, the listener would have to imitate not only the human performers, but the technology that generates these musical works for magnetic tape.

The consequences of this sort of mimetic listening that Cox and Godøy describe are major for musical minimalism. *If* the mimetic simulation of body motion informs the *anthropomorphic* hermeneutics of traditional musical performance and the projection of human-like agency onto musical sound, then the mimetic simulation of mechanical motion informs a *technomorphic* hermeneutics of Reich's experimental music and the projection of machine-like objectivity onto both human speech and musical sound. In this technomorphic hermeneutics, the agency of the composer and the agency of the performer dissipate—voices dissolve into a blur of pitch and rhythm—leaving only semi-autonomous, impersonal musical processes in their place. This seems to be the way that Reich would like others to listen to his music—and it's one that sounds an awful lot like the sort impersonal, apolitical listening that Reich says musical processes can create—but, as critiques of Reich and his tape works make clear, this is only one possible way of listening.

As Scherzinger and others have argued, the sounds of technological process at work in *It's Gonna Rain* and *Come Out* threaten to overshadow and obscure the speaking voices of Brother Walter and Daniel Hamm, foregrounding Reich's musical process at the expense of his "performing" subjects. Considering their role as "performers" of these pieces makes clear how Walter and Hamm

can be allowed some form of retroactive agency in critiquing and rewriting the analysis of Reich's process-based, minimal experimental music. And, indeed, as case studies they can help to illuminate the forms of voice and agency which experimental music's preferred ways of listening would otherwise obscure. In continued research into the agency of the musical performer, repertories of experimental music and their technological problems may prove important in fully considering the role of the performer in musical analysis.

Analyzing Musical Minimalism

The technomorphic hermeneutics engendered by Reich's tape loop pieces are at once politically fraught and, at the same time, they continue to flourish in the cultural association of repetitive minimalist music with machines, technology, mathematics, and Western rationality that runs counter to human irrationality, emotion, and subjectivity.[44] The efficacy of this technomorphism—or of the critique leveled by Scherzinger et al—seems to hinge upon the presence or absence of the human performers technomorphized by repetition and technological mediation. In the case of *It's Gonna Rain* and *Come Out*, the implications are numerous and relatively clear; in later minimalist music for traditional instruments, however, the post-human inflections of minimalism's predominant aurality take some more teasing out. Beyond repetition, minimalism and post-minimalism are tied

[44] Eaton, "Marking Minimalism."

back to the genre's technological origins by history and by the sustained cultural associations of the music's aesthetic markers with objectivity. Of the many composers who followed in the wake of Reichian minimalism with their own technical or stylistic contributions, Julius Eastman and his music are perhaps the most directly and vehemently opposed to its neutralizing effects.

To conclude this chapter, I want to revisit Eastman's 1980 concert at Northwestern University as an important example of the potential for minimalist music's use as a technology for cultural and conceptual re-definition. His performance functions as an important site for both a critique of minimalism's established ways of listening and an argument for a formal analysis that extends outward toward an ecological view of the intra- and extra-musical.

Julius Eastman grew up in Ithaca, New York, where he received his early musical training. A talented pianist and singer, Eastman was perhaps best known for his recording of Peter Maxwell Davies's *Eight Songs for a Mad King* (1969), a role that demands a five-octave range and a plethora of extended vocal techniques—in addition to a dramatic flair—from its performer.[45] He also took to composition and in the early 1970s, he was a part of the community of musicians around the Center for the Creative and Performing Arts at SUNY Buffalo. This group of experimental innovators included Maryanne Amacher, Morton Feldman, George Crumb, David Tudor, and Terry Riley, among many others. Although Eastman was notoriously enigmatic and showed reclusive tendencies, he was nevertheless steeped in the New York musical avant-garde. During the academic year 1979–

[45] For more on Eastman's life, see Renee Levine Packer, "Julius Eastman, a Biography" in *Gay Guerilla*, edited by Renée Levine Packer and Mary Jane Leach (Rochester, NY: University of Rochester Press, 2015), 9–74.

1980, he took up a composer-in-residence position at Northwestern University, and, as part of his residency, in January of 1980 he held a concert of his works.

The pieces he selected for the concert are more or less representative of his compositional style at the time—not at all like the *Mad King* role he was known for, his works for pianos are in a prototypical post-minimalist vein. At 55 minutes, *Crazy Nigger* (1978) was the last and longest work on the program. As Andrew Hanson-Dvoracek has described in great detail, this harmonically driven piece was divided into sections reminiscent of other lengthy minimalist compositions from the 1970s.[46] While *Crazy Nigger* was more harmonically driven, the rapid repeated piano notes and the motivic melodic emphasis of *Evil Nigger* (1979) was a distinct stylistic departure. The relatively slow and somber *Gay Guerilla* (1979) provided further contrast, and included the prominent quotation of the Lutheran chorale "Ein feste Burg ist unser Gott" ("A Mighty Fortress is Our God"). In all three of these compositions, Eastman makes use of a gradually expanding process whereby harmonic sonorities grow in density and melodic phrases lengthen. These processes were the result of detailed schematic charts that preceded the written score (if and when there was any final written score). In performance Eastman used these charts as condensed roadmaps from which he would conduct his fellow musicians.

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[46] Andrew Hanson-Dvoracek, "Julius Eastman's 1980 Residency at Northwestern University" (Master's thesis, University of Iowa, 2011); and Andrew Hanson-Dvoracek, "A Post-Minimalist Analysis of Julius Eastman's *Crazy Nigger*," in *Gay Guerilla*, edited by Renée Levine Packer and Mary Jane Leach (Rochester, NY: University of Rochester Press, 2015), 140–50.

As Hanson-Dvoracek notes, the compositional milieu in which Eastman composed his *Nigger* series was one in which other figureheads of musical minimalism had strayed from strict compositional processes and embraced for traditional modes of expressive composition (Steve Reich included). On the whole, melodic phrases are fluid, rhythms are driving and repetitive, and pitch material is mostly diatonic. While it is not nearly as sonically severe as earlier minimal music, Eastman's repetition and familiar harmonies have led to his categorization as a minimalist composer. Compared to Reich's tape works, these pieces sound far less overtly *technological*; at least in their aesthetic, at least on their surface, Eastman's compositions are rather plainly minimalistic. The titles for these works, on the other hand, were anything but plain.

They refer to Eastman's race and sexuality via what musicologist Ryan Dohoney calls the "*repurposing* of hate speech."[47] The titles for his pieces had proven controversial, to say the least, on the Evanston campus, where black student groups had already that year been confronted by racism both institutional and interpersonal. These student groups objected to the explicit titles and, as a compromise with the composer, posted advertisements for the concert reduced the titles to only the first letter of each word.[48] So, when his January 1980 concert at the Pick-Staiger Concert Hall began, Eastman stood on stage before his audience, spoke his full titles aloud, and, eventually, he talked about how he viewed these words not as harmful, but as strong, protective, and even glorifying. His

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[47] George Lewis voices some apprehension about a too-narrow conception of Eastman's use of "hate speech" in his foreword to *Gay Guerilla*, edited by Renée Levine Packer and Mary Jane Leach (Rochester, NY: University of Rochester Press, 2015), xiv.

[48] Ryan Dohoney, "A Flexible Musical Identity: Julius Eastman in New York City, 1976–90," in *Gay Guerilla*, edited by Renée Levine Packer and Mary Jane Leach (Rochester, NY: University of Rochester Press, 2015), 116–30.

explanation of this repurposing of hate speech does not come right away. First, he speaks his titles aloud; and then, almost as an explanation of his choice of words, Eastman launches directly into a few minutes of description of instrumentation, compositional process, and the design of what he called "organic form."

> I want to say a few words about the music. Number one is, there are three pieces on the program. The first is called *Evil Nigger*, and the second is called *Gay Guerilla*, and the third is called *Crazy Nigger*. Now these are three pieces that can be played by any number of instruments; we have pianos here because for practical reasons, one can therefore play these pieces with four people with four pianos. But if melody instruments were playing probably a good number would be somewhere in the area of maybe ten instruments, ten to eighteen instruments, usually of the same family, so therefore another version could be for let's say eighteen stringed instruments. These particular pieces formally are an attempt to what I call make "organic music"—that is to say the third part of any part, so the third measure or the third section, the third part, has to contain all of the information of the first two parts and go on from there. So therefore, unlike Romantic music or Classical music where you have actually different sections and you have these sections which, for instance, are in great contrast to the first section or to some other section in the piece, these pieces, they're not exactly perfect, but there is an attempt to make every section contain all of the information of the previous sections or else taking out information at a gradual and logical rate.[49]

I will not try to speak to Eastman's meaning or his intentions in making this direct leap from titles to form—after all, there were many types of pressure and power intersecting and exerting themselves upon him in that moment. I will, however, suggest that one apparent link between the titles for his works and his technical description of formal design can be found in critique of the objective,

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[49] Hanson-Dvoracek transcribes the entire passage in the appendix to his thesis, "Julius Eastman's 1980 Residency at Northwestern University," 96–98.

technomorphic aurality of American minimalism, and in conceiving of Eastman's musical compositions as technologies for rethinking the analysis of musical minimalism.

To make clear how Eastman's musical technology works, I want to return briefly to the minimalism of Peter Osborne, Sol LeWitt, and Michael Fried as precedents for how composers might use their music as technologies of cultural definition. In the same 1967 issue of *Artforum* where LeWitt published his "Paragraphs on Conceptual Art," Fried made the claim that literalism (minimalism) was the negation of art. For Osborne, however, this perceived negation of the medium was precisely where and how minimalism was a conceptual art. For him, conceptual art—"art about the cultural act of definition"—hinges entirely upon negation. More specifically, a work of conceptual art is about the definition of the very thing that the work negates. Musical minimalism was conceptual art about the medium of art precisely because it negated its medium. To take a canonical example from music: John Cage's *4′33″*—four-and-a-half minutes wherein the performer makes no sound—negates musical sound; in its place, the piece offers silence. Cage's intention was for the listener to realize that silence is, in fact, always full of ordinary sounds, and that these ordinary sounds are, in fact, *music*. Therefore, "silence" is music, and *4′33″* is about the definition of musical sound by way of its apparent negation.

As in conceptual art, the technology of conceptual music works by negating something and, in its place, offering up a new definition of that thing. Crucially, these technologies need an audience, listeners, viewers—people to participate in this definition and re-definition. The products of these conceptual technologies are cultural interventions, they are contributions to language and understanding, they are not objective but subjective, they are always and inherently social.

Eastman's description of what he calls "organic" form is couched in technical language that matches the objective rhetoric surrounding minimalist music of the previous two decades. But his titles could not be further from those typical of so much mid-century art and music: *Music in Twelve Parts*, *Violin Phase*, *4′33″*, *Wall Drawing #83*, or simply *Untitled*. And titles, although they may not themselves be audible parts of the music, nevertheless inform ways of listening to music's meanings. Whereas Steve Reich's titles such as *Drumming*, *Clapping Music*, and *Music for 18 Musicians* continued to express minimalism's dry objectivity, Eastman's titles negated this objectivity and offered, in its place, explicit indices of a subjectivity that could reveal this objective rhetoric to have always depended upon a neutralized form of subjectivity. To put it another way, Eastman's music and titles call attention to the otherwise unmarked subjectivity of American minimalism's composers and audiences, which had made their sonic and musical expressions of objectivity audible in the first place. Eastman's musical technology seems to work through the music's form in conjunction with its title. Eastman's titles negate this ideal of objectivity in minimalism and offer, in its place, indices of a subjectivity that subverts objective rhetoric and shows it always to have carried or contained subjectivity in the first place. Or perhaps it shows the inverse: an unmarked subjectivity which always encompassed and sustained this illusion of objectivity.

While Eastman repurposed hate speech and espoused new and positive meaning for these words, his aspirational re-definition has not taken hold. Marked by history and violence, these words are not *objective* in any common sense. As I delivered versions of this chapter as conference papers and colloquium talks, I wrote in order to avoid saying slurs and hate speech into microphones—in thinking through the problematics of musical minimalism and encountering Eastman's work, intersections of race, gender, sexuality, and the politics and power of music and the academy are

thrown into stark relief. It is in this sense that Eastman's technology continues to function. Media studies scholar Beth Coleman conceptualizes race itself as a technology for a "greater expression of agency" that "indicates presence, will, and movement—the ability to move freely as a being . . . subjected to systems of power, ideology, and other networks."[50] In the case of Eastman's music, his controversial titles provoked resistance to his concert performance, and yet they amplified his presence on stage and his will to compose music within a technomorphic post-minimalism.

In recent years, his music has been revisited and revived by scholars such as Ellie Hisama and Ryan Dohoney, addressing a longstanding dearth of scholarship on Eastman in the secondary literature of musicology and music theory. I want to conclude by suggesting that Eastman's place in the history of American minimalism also speaks to ongoing debate within the "interdiscipline" of sound studies between proponents of speculative realism and object-oriented ontologies on the one hand, and, on the other, scholars who maintain sound's inextricability from auditory culture. In particular, Marie Thompson diagnoses the recent ontological turn in sound studies scholarship as operative only within an unmarked "white aurality":

> [White aurality] amplifies the materiality of "sound itself" while muffling its sociality; it amplifies Eurological sound art and, in the process, muffles other sonic practices; it amplifies dualisms of nature/culture, matter/meaning, real/representation, sound art/music, and muffles boundary work; all the while invizibilizing its own constitutive presence in hearing the ontological conditions of sound-itself.[51]

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50 Beth Coleman, "Race as Technology," *Camera Obscura* 70, no. 24 (2009): 177–78.

51 Marie Thompson, "Whiteness and the Ontological Turn in Sound Studies," *Parallax* 23, no. 3 (2017): 274.

When Reich wrote that he wanted to get away "from he and she and you and me and [focus his listening] outward toward it," he never clarified exactly what "it" was. But I would wager that neither Brother Walter nor Daniel Hamm had "it" in mind when they spoke the words "it's gonna rain after all" or "I had to, like, open the bruise up and let some of the bruise blood come out to show them." To return once again to the guding question of hearing and imitating either machines or musicians, I would contend that IT is audible in *It's Gonna Rain* and *Come Out* only to the extent that one hears the machines over the two men and their voices.

Considering the role of Brother Walter and Daniel Hamm as "performers" of Reich's tape works makes clear how Walter and Hamm might be allowed some form of retroactive agency in critique and analysis of Reich's process-based, minimal experimental music. And, indeed, as case studies they can help to illuminate the forms of voice and agency which experimental music's preferred ways of listening would otherwise obscure. In continued research into the agency of the musical performer, repertories of experimental music and their technological problems may prove important in fully considering the role of the performer in musical analysis.

The juxtaposition of Thompson's work with Julius Eastman's Northwestern concert prompts me to point out that minimalism's normative aurality as I have described it is, perhaps unsurprisingly, a white aurality. Thompson argues that this white aurality enables speculative realism, object-oriented ontology, and new materialism in contemporary scholarship; I argue that Eastman's music illuminates a similar aurality underpinning the attempted replacement of subjectivity with objectivity in minimal art and music, which replacement is supported by similar bifurcations. Listening back to works of American minimalism having identified and marked these forms of

aurality, it becomes clear that this music's expressions of objectivity are not matters of objective reality, but, rather, products of how we listen. As music and sound studies continue to question the many inter-relationships of sound and music, Eastman's work of musical conceptualism can serve as an urgent reminder to think about how we might be listening—and to what, or to whom.

Conclusion

If the works of experimental music throughout this dissertation have made anything clear, I hope it is that they are to be *listened* to. Though they may have a conceptual emphasis, the importance of the perceptual is not to be wrested away as easily as LeWitt claimed in 1967.[1] To listen to this music is to hear its sounds, but it is also to recognize the relationship between both its material and conceptual forms, and to engage this music in empathetic interpretation with respect to its cultural contexts. Further, to listen is to analyze, and, as I have argued, listening closely to works of conceptual music can also allow for another kind of analysis to take place.

The curious and challenging repertories of experimental music have the potential to engage the disciplinary practices and methods of music analysis in reciprocal analysis, but they can only realize this potential if music analysis takes the opportunity to reflect critically on how it listens. The field of conflict between analysis and experimental composition has been written into (or written *out of*) the secondary literature of music theory.[2] The historical exclusion of experimental music from music-analytical discourse—along with this music's listeners, performers, and composers—is due in

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1 Sol LeWitt, "Paragraphs on Conceptual Art," *Artforum* 5, vol. 10 (June 1967): 79–84.

2 For a number of approaches to studying experimental music, see the many diverse chapters and perspectives in Benjamin Piekut, ed., *Tomorrow is the Question: New Directions in Experimental Music Studies* (Ann Arbor: University of Michigan Press, 2014).

part to music theory's prioritization of methodological intervention and to experimental music's apparent incompatibility with the field's prevalent methodologies. Most contributions to music theory's secondary literature center on two things: 1) a new or substantially revised analytical method, and 2) a musical example(s) which makes for an especially compelling demonstration of that method. Of course, some musical works make for more compelling demonstrations of analytical method than others, and so this disciplinary emphasis on methodological intervention places the musical repertories that fit music theory's methods at the center of the field's scholarly discourse. Although music theory and analysis has historically excluded music (and musicians) not analyzable by its methods, a rethinking and an expansion of methodology can open up the discipline to important musical repertories from which it stands to learn a great deal.[3]

The stock analytical methods of music theory were designed for Western music of the eighteenth and nineteenth centuries, and they focus on parsing this repertory's pitches, rhythms, and standard forms. Such methods tend to flounder, however, when confronting music that does not conform to classical conventions, including popular music, minimalism, aleatoric music, pre-tonal repertories, or the host of traditions often gathered under the category of "world music." It is to be expected that an analytical methodology meant to articulate the qualities of European classical music would find little to say about music that does not share all of that repertory's musical values. What emerges are gaps between large portions of the contemporary repertory and the analytical methods

[3] Kofi Agawu spoke directly to this issue in his keynote address at the 2015 meeting of the Society for Music Theory in St. Louis, Missouri, entitled "Rethinking Music Theory, with African Aid."

that North American and European music theory employs. In order to close these gaps, theorists must adapt old methods and innovate new ones; my hope is that the analytical framework developed in this project provides one way into a particularly curious set of musical repertories that make up experimental music. And although such work is underway on many fronts, there are significant historical and cultural problems compounding the methodological ones.[4]

The broad institutionalization of the arts in the American academy over the past half century—including the expansion of graduate degree programs in music theory—has at once introduced more music than ever into the academic domain and, at the same time, it has made the representation of this wider range of music in secondary literature all the more "secondary." The walls of the ivory tower that already insulate those inside from those outside are only reinforced by an ever-increasing cultural and historical distance between scholars and their objects or subjects of study. While some of these gaps are slowly closing, this is the result of collective effort and shared interest, and the more that academic music theory branches out to repertories beyond its core competencies, the more that these historical, cultural, methodological, and professional problems arise.

There are many difficult questions facing music analysis as the discipline gradually expands its scope, whether they are methodological in nature—*how* to analyze new and different music—or

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[4] Michael Tenzer's plenary talk at the 2017 meeting of the Society for Music Theory in Arlington, Virginia, entited "Chasing the Phantom: Features of a Supracultural New Music" spoke to the (im)possibility of studying music beyond cultural boundaries; his colleague and frequent collaborator at the University of British Columbia, John Roeder, took an unabashedly comparative approach to the identification, classification, and analysis of cyclical forms in various musical traditions at the 2018 meeting of the Rocky Mountain Music Scholars with a keynote address entitled "Comparing Musical Cycles Across the World." See, for example, Michael Tenzer and John Roeder, ed., *Analytical and Cross-Cultural Studies in World Music* (New York: Oxford University Press, 2011).

whether they are moral/ethical—*should* we as a field be analyzing this music at all? Indeed, these methodological and moral/ethical questions often give rise to one another. Behind many of these questions is the real or perceived cultural and historical distance that so often exists between the analyst and the music(ians) under analysis, a distance that can pose political problems on top of methodological ones. My focus on experimental music in this project is intended to address some of these questions, but it also points to an irony latent in the quandary of a music that doesn't seem to fit with current practices of music analysis. Of the repertories at odds with the established methods of academic music theory, experimental composition has probably greatest number of historical representatives who themselves worked in and around the academy.

As the events of the Second World War developed, many important European composers emigrated to American urban and cultural centers, and took up teaching posts at various colleges and universities. While experimental composers of the 1950s and 60s on either coast of the United States were of a different generation—and were often of a *very* different mindset with regard to composition—varied forms of support by academic institutions were essential to most of them. Indeed, many composers conceived of musical composition as a form of rigorous scientific inquiry, an academic discipline unto itself which survives in higher education today. From this vantage point, the field of conflict between analysis and experimentalism stretches a relatively small historical and cultural distance, and yet the methodological gaps are often so large as to seem unbridgeable. Composers of experimental music developed new and unfamiliar approaches to melody, harmony, and form, rendering their works illegible to many listeners and critics. In some cases, they rid their compositions of these fundamental musical features altogether, purposely negating the things that make music sound like music for the sake of experimentation. The trouble between analysis and

experimentalism is no coincidence; it is the product of a mutual interest in exploring the bounds of music. Composers and scholars were (and still are) engaged in the project of analyzing the fundamental concepts of musical sound and organization, albeit by very different methods. Methodological discrepancy may have produced a gap between scholarship and composition, but I suggest that this gap is one that can be bridged by the reciprocal form of analysis that works of experimental music can engage.

A number of composers and artists throughout the twentieth century and well into the twenty-first persisted in finding new ways of making art and music.[5] In doing so, they methodically tested the limits of the human sensorium and pushed at the bounds of imagination for themselves and their audiences. Although the project of modernism was well underway by the first decades of the twentieth century, the advent of electrical and electronic technologies—and the new media that these technologies enabled—engendered an ethos of innovation in which large swaths of the modern arts were both inspired by and conducted through emergent machines and devices. New technologies opened up new possibilities of sight and sound for any number of industrial (and often military) applications; in the hands of artists and composers, they facilitated experimental creative endeavors and opened up opportunities to re-conceptualize their material, medium, form, and working process.

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[5] For rich and diverse coverage of contemporary music in its defiance of categories and constraints, see Tim Rutherford-Johnson, *Music after the Fall: Modern Composition and Culture since 1989* (Berkeley: University of California Press, 2017); for a reading of modern European music structured by psychoanalytic discourses, see Seth Brodsky, *From 1989, or European Music and the Modernist Unconscious* (Berkeley: University of California Press, 2017).

For a modernist experimentalism seeking to break and recast its culturally inherited norms and practices, technology was both a conceptual and material catalyst.

Contemporary music analysis continues to inquire into the nature of musical material, medium, and form, and would do well to rethink its own received working process, particularly with regard to methodology. In recent years, music theory has been joined by the burgeoning field of sound studies, which concerns itself with the peculiarities of sound as an object of study—sometimes, though not always, musical sound. Whereas music theory is a discipline wound tightly around its methods, sound studies seeks to construe itself as an "inter-discipline," un-beholden to any one disciplinary method or approach as it seeks to buck entrenched misconceptions about the nature and function of sound. While methodological pluralism rules in sound studies, the question of sonic ontology has been hotly debated from many angles as a significant portion of the field has taken an "ontological turn."[6] On one side, there are those who seek to access a pre-human, pre-social vantage point on the phenomena of sound; on the other, there are those who argue that this is impossible, and that there can be no form of sound studies that does not rely (explicitly or implicitly) upon an all-too-human auditory culture.[7] From a musical perspective, some of the questions asked by sound studies can seem strange and inconsequential; these strange questions are, however, many of the same questions that music analysis faces when it looks beyond its familiar repertories.

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6 For one site of this debate, see Annie Goh, "Sounding Situated Knowledges: Echo in Archaeoacoustics," *Parallax* 23, no. 3 (2017); Marie Thompson, "Whiteness and the Ontological Turn in Sound Studies," *Parallax* 23, no. 3 (2017); and Christoph Cox's response to both Thompson and Goh, "Sonic Realism and Auditory Culture: A Reply to Marie Thompson and Annie Goh," *Parallax* 24, no. 2 (2018).

7 Brian Kane describes the "ontological turn" as a form of "ontography" in "Sound Studies Without Auditory Culture: A Critique of the Ontological Turn," *Sound Studies* 1, no. 1 (2015): 2–21.

Sound is a slippery thing: it might be a subject, an object, or an event; it may have a source, it may have a medium, or it may *be* a medium; it belongs to epistemology, phenomenology, or ontology. Hearing and listening, the processes by which we apprehend sound, are in some ways fundamentally different than seeing; in other ways, they are more similar than they might first appear. In contradistinction to image, sound might seem to be more immersive, less static, more interior, more affective, or more subjective; but it is not necessarily or inherently so.[8] Sound studies is a critical undertaking agnostic with regard to methodology. Its authors aspire to revel in sound's pluralities, to listen closely to sound's conundrums.

Music, meanwhile, has remained a relatively stable quantity, at least insofar as it is isolated from sound. While music certainly can encompass all the same complexities as sound, theories of music and practices of music analysis tend to construe musical sound as formalized musical objects represented in notational systems. A theory of transformations within pitch-class space, for example, is surely based in a very particular experience of very specific sounds with discrete pitch. The very concept of a pitch-class, however, folds different sounds into one category united by octave-equivalence; and the transformation of pitch-class sets folds subsequent sounds of different pitch into an even larger category of equivalence. These transformations are audible in a certain sense, but their audibility depends upon the disregard of sonic difference in the name of musical equivalence. And it

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[8] See Jonathan Sterne's "audiovisual litany" in his introduction to *The Sound Studies Reader*, edited by Jonathan Sterne (New York: Routledge, 2012), 9.

is in this sense that music theory and analysis can diverge from the sonic intricacies of the musical sounds they take as their objects of study.

Notation represents certain facets of musical sound and not others: it's very good at representing discrete pitch, for example, but relatively poor at representing timbre. Notation, then, is good at representing musical equivalence, but relatively poor at representing fine-grained sonic difference. By representing musical equivalence amidst sonic difference, systems of notation produce—and are themselves produced by—musical ontologies of notes, melodies, harmonies, phrases, movements, and so on. These ontologies are essential to the project of music analysis for their capacity to discipline otherwise unruly sonic phenomena and organize them into categories of related musical objects and concepts. Discrete pitches are objectified and transcribed as notes in pitch-class space; sets of pitches are objectified and transcribed as chords or melodies in tonal harmonic space. And these objects of music-notational ontologies are, in turn, subjectified by the rules of tonality, counterpoint, dodecaphonic technique, or whatever stylized organizational logic might govern them.

Music theory and analysis have disciplined musical sound by methods that largely depend upon musical notation. The consequence of this disciplining is that, while music and sound are inextricably linked, the musical sound that music scholars purport to study is quite a bit different—and quite a bit narrower in scope—than the range of sound writ large. Experimental music, however, seeks to extend well past and beyond such a narrow disciplining of musical sound. The disciplinary discrepancy between the two has given rise to the current situation that sound studies finds itself in, where it can better analyze some experimental music than can music analysis. Indeed, the re-emergence of Pierre Schaeffer and *musique concrète* into both the sound studies and music-theoretical

discourse illustrates some of the areas in which both fields overlap in their interests, and where they diverge in their methods. But all hope is not lost for music theory with regard to experimental music and its unruly sounds; my argument is, in fact, to the contrary.

Analysis of new and different musical repertories—especially of popular music—has necessitated new and different music-analytical methods, including adapted notational schemes and spectrographic analysis, among other approaches. These methods and technologies allow music-theoretical discourse to encompass sounds previously outside of its reach. Such expansion of music theory's prevalent methodologies can do much to rehabilitate the field's ability to extend inquiry to repertories beyond the Western classical tradition and to live up to the aims of its overarching intellectual project. Insofar as music theory's disciplinary definition of musical sound limits itself to that which satisfies its methods, experimental music will be excluded and the field of sound studies will be left to pick things up. But this conflict need not continue. The irony can be summed up this way: experimental music's exploration and analysis of musical sound is thus an underlying cause of the conflict between experimentalism and music analysis. My intention is to illuminate some of the bridges which cross the methodological gaps between these two fields. And for these purposes, experimental music makes an especially compelling case.

In this dissertation, I have inquired into some strategic points of music-analytical method in order to further consider and to analyze works of experimental music which exist on the other side of this methodological gap. In particular, I have focused on the music of John Cage, Steve Reich, Pierre Schaeffer, and Julius Eastman, who serve as representatives of a modern experimental music for which various technologies acted as conceptual and material catalysts. While not all of these composers embraced all facets of sound technologies, the influence of technology—whether positive

or negative—informed their thinking, their compositional process, and the sound of their music. These composers were invested in reconceptualizing and expanding musical sound, and in the breaking and recasting of musical norms and practices. They were, in this sense, interested in conducting experiments upon the very same concepts and ideas which music analysts and "sound students" pursue in their scholarship. Indeed, I argue that works of conceptual music and music theory are similarly *analytical* in their respective experimentation on—and inquiry into—fundamental musical concepts. The analytical projects of music theory and musical conceptualism, both creative and scholarly, share the aim of reconceptualizing principles of musical sound and organization.

The aim of this dissertation has been to establish a framework built around the multiple understandings of technology, culture, and analysis in order to motivate the analysis of other works of experimental music moving forward. The engagement with the figures of Cage and Reich—historically prominent figures who have not lacked for attention in scholarly literature—is meant to help open up channels of analytical inquiry to include other figures whose music and ideas may seem even less compatible with music theory's established methods. At the outset of the project, I took up Alvin Lucier's *Silver Streetcar for the Orchestra* as an example of a relatively simple work that nonetheless raises a number of questions central to the kind of analysis at the core of this project. In closing, I want to bookend this dissertation with the music of Maryanne Amacher, yet another important figure in the history of conceptual music whose work has much to offer through a reciprocal analytical approach.

Maryanne Amacher

Like the rest of the composers in this dissertation, Maryanne Amacher used a combination of sound technologies and compositional techniques—her use of each informed by the other—to intervene into the cultural norms and practices of musical composition and performance. Relying as she did upon mixing boards, synthesizers, and loudspeakers, the sounds that make up her music would have been impossible without twentieth-century sound technologies. At the same time, her musical works themselves remain as powerful technologies for the analysis and re-conceptualization of fundamental musical concepts. Amacher's primary area of exploration through experimental composition were the normative notions of space and time which have long been assumed in the listening, performing, and composing cultures of classical music. Through her composition and her performative multi-channel mixing of live, recorded, and synthesized sounds, Amacher pursued a music that could be experienced as "architectural." For her, architectural music did not strictly connote music that was written or performed in particular buildings (although many of her works were indeed carried out this way). In Amacher's view, architecture was a rich and diverse conceptual field encompassing many forms of space and time, and capable of structuring visual, sonic, and musical experience.

The challenges of writing about such composers and their music are multitudinous. As Ben Piekut made clear in his account of the various and disparate institutions of modern music in New

York City in 1964, the repertories of American experimental music are anything but unified.[9] In her recent work, Amy Cimini acknowledges that to write about Amacher's "wild sound" is necessarily to adopt some commensurate wildness with respect to method and scholarly approach.[10] As I have argued throughout this dissertation, however, one useful analytical approach might be found in considering how technology, culture, and analysis interact in such curious and difficult music. Although there are innumerable threads hanging from Amacher's "weft of environmental sounds and their technical traces," my hope is that such an analytical approach will help to pick up a few of these threads and see where they might lead.[11]

To begin, Amacher's position in the culture of American experimental music was an advantageous one. Not only did Amacher offer the keen insight and perspective of a forward-looking composer, she also held expertise and ability as a sound technician. Her modernist lineage is most directly traced through Karlheinz Stockhausen, with whom she studied while pursuing an undergraduate degree in composition at the University of Pennsylvania in the early 1960s. Her teacher's famed use of electronics for musical composition was instrumental in making the technologies and the techniques of electronic sound available to Amacher, who would later study both acoustics and computer science at the University of Illinois Urbana-Champaign. This technical

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9 Benjamin Piekut, *Experimentalism Otherwise* (Berkeley: University of California Press, 2011).

10 Amy Cimini, "Maryanne Amacher's Living Sound," SMT 2018 in San Antonio, TX.

11 Amy Cimini, "Telematic Tape: Notes on Maryanne Amacher's *City-Links* (1967–1980)," *Twentieth-Century Music* 14, no. 1 (2017): 93–108.

expertise would enable her contributions to—and cultural interventions into—American experimentalism.

Amacher became a central figure in the American avant-garde music scene, especially in and around New York City in the 1970s and 80s. Her most widely recognized early work as a composer began in the late 1960s, when she developed and carried out a massive project of geographically expanded musical performance via telecommunication that she called *City-Links (1967–)*. This musical composition-slash-sound installation connected distant cities—and distant musical performances—in real time via telephony, stretching the bounds of musical performance space well beyond the range of human hearing by technological and infrastructural means. The title for the works refers to a series of telephonic connection installations in and between Northeastern, Southeastern, and Midwestern American cities, each of which enabled an audience in one to hear an ongoing musical performance happening far away. An audience in one city could listen in to a performance happening miles away, collapsing geographical distance and pushing at the limits of the stage, the concert hall, and the social environment of musical performance. Not only did the *City-Links* series stretch the bounds of the musical work geographically, it stretched the temporal limits of musical performance as well. Individual works in the series often continued for months, and the series as a whole was conceived as a continuing performance which could halt or resume at any time, from the beginning series in 1967—*City-Links #1* took place between the WBFO studio in Buffalo, NY and eight locations in the surrounding area—through its culmination in 1981—*City Links #18 (Intelligent Life)* connected Amacher's studio at The Kitchen to performances of instrumental sound and spoken text by George Lewis and John Cage.

Amacher's use of technology to bring together far-away musical performance in both space and time was an attempted intervention into established constraints on performance space in multiple dimensions. With her early work, she sought to expand the performance space and extend the time of performance, allowing music to wash over the bounds of both months and miles. Her later work, however, collapsed the difference between outward and inward, between listening and performing, and between musical composition and the technological manipulation of the human body.

Although her *City-Links* project continued indefinitely, Amacher ventured far wider than telecommunication in search of technological means by which she could intervene into the space and time of musical performance. In her later work, she employed sine-tone generators to produce involuntary bodily responses to sound by composing music through distortion-product otoacoustic emissions—or "combination tones"—that cause sympathetic vibrations in most listeners' ear canals, producing the sensation of another pitch emanating from within the listener's head. This was a complex compositional device to take on, not least because it meant coordinating Cimini calls "multi-dimensional voice leading space." Amacher had to compose through massively complex calculations in order to determine how her combination tones could work in counterpoint, but she welcomed this complication as a necessary technical means of architecting the expanded musical space she was after.

Listening is already an embodied practice, but Amacher's combination tones brought the workings of body and mind to the fore via the technological manipulation of both. Listening to works based around combination tones such as "Head Rhythm & Plaything" on *Sound Characters: Making the Third Ear* (1999), one is subjected to an involuntary interaction of human anatomy and

musical technology. As sine tones join in meticulously composed sonority, the musical work splits the source of its sound among Amacher as performer and composer, loudspeaker as an initial physical cause of vibration, and the listener's inner ear as a resultant vibrating and sound-producing medium. The human, the social, the mechanical, and the musical—all are objects of experimentation and analysis as Amacher instrumentalizes the ordinarily silent inner ear.[12] These combination tones are reproducible on most stereo sound systems (although they don't work with headphones), and are best reproduced under ideal technological conditions with loudspeakers and sufficient amplification. Their reproducibility and (limited) marketability make Amacher's work with combination tones some of the only of her compositions available on commercial recording.[13] The tragic irony of Amacher as a historical figure in American experimental music is that the technologies and techniques which made her work so important were also a large part of why her music was so difficult to record and distribute via normal commercial channels. In expanding the space and time of musical composition and performance, her music inevitably spilled over the sides of recording media.

It is no coincidence that the same aspects of her music that have prevented commercial recording have also had a hand in the relative dearth of analytical attention paid to her music. Amacher's practical incompatibility with conventional musical media mirrors of the sort of

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[12] Indeed, much of Amacher's work concerned anatomy and what we now call biopolitics. In particular her installation "Living Sound" came during an ongoing Supreme Court case, for which it was decided shortly after that organic life-forms could be patented. This was the emphasis of Amy Cimini's paper, "Maryanne Amacher's Living Sound," SMT 2018 in San Antonio, TX.

[13] Blank Forms records claims that their 2019 release of *Petra* (1991) is the first and only time that any of Amacher's music has been pressed and released on vinyl: https://soundcloud.com/blankforms/maryanne-amacher-petra-1accessed July 11, 2019.

methodological incompatibility that has kept so much experimental music out of music-analytical literature. Amacher wanted to make music that was not constrained to single points in space and time, but that could happen anywhere at any time. If Cage attempted to compose his ideal listener, Reich attempted to compose his performers, and Eastman attempted to compose his own role as composer of musical minimalism, then Maryanne Amacher attempted to compose anew the very dimensions in which musical composition and performance take place. But her attention was not only directed outward toward time and space; she also looked inward to the imagination as an important resource for musical composition.

In reflecting on the influence of John Cage in the culture of American experimental music, Maryanne Amacher postulated a sort of prehistorical origin of music without songs, tunes, or musical instruments. In this time before music, she imagined that the "mind became the instrument they played."[14] My argument in this dissertation is that composers of conceptual music did something quite similar. Through technological means, experimental musicians made cultural interventions that now offer opportunities to rethink the disciplinary practices of music analysis. In the music of Cage, Reich, Schaeffer, Eastman, and others, the fundamental musical concepts of form, voice, agency, space, time, and sound are re-conceptualized and expanded beyond what had seemed possible. My hope is that listening to these and other musical repertories will help to do the same for music analysis.

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[14] Gordon Mumma, Allan Kaprow, James Tenney, Christian Wolff, Alvin Curran, and Maryanne Amacher "Cage's Influence: A Panel Discussion," in *Writings Through John Cage's Music, Poetry, and Art*, edited by Christopher Hatch and David W. Bernstein (Chicago: University of Chicago Press, 2001), 180.

Bibliography

Abbate, Carolyn. *Unsung Voices: Opera and Musical Narrative in the Nineteenth Century*. Princeton, New Jersey: Princeton University Press, 1991.

Agawu, Kofi. "How We Got Out of Analysis, and How to Get Back in Again." *Music Analysis* 23, no. 2/3 (July–October, 2004): 267–286.

Art & Language. "Voices Off: Reflections on Conceptual Art." *Critical Inquiry* 33, no. 1 (Autumn 2006): 113–135.

Auner, Joseph. "Reich on Tape: The Performance of *Violin Phase*." *Twentieth-Century Music* 14, no. 1 (2017): 77–92.

Bernard, Jonathan W. "The Minimalist Aesthetic in the Plastic Arts and in Music." *Perspectives of New Music* 31, no. 1 (Winter 1993): 86–132.

Bernstein, David W. "John Cage's Cartridge Music (1960): 'A Galaxy Reconfigured.'" *Contemporary Music Review* 33, no. 5–6 (2014): 556–569.

Bernstein, David W. *The San Francisco Tape Music Center: 1960s Counterculture and the Avant-Garde*. Berkeley: University of California Press, 2008.

Biareishyk, Siarhei. "Come Out to Show the Split Subject: Steve Reich, Whiteness, and the Avant-Garde." *Current Musicology* 93, no. 2 (Spring 2012): 73–93.

Born, Georgina. "For a Relational Musicology: Music and Interdisciplinarity, Beyond the Practice Turn." *Journal of the Royal Musical Association* 135, no. 2 (2010): 205–243.

Born, Georgina. "On Musical Mediation: Ontology, Technology, and Creativity." *Twentieth-Century Music* 2, no. 1 (March 2005): 7–36.

Boulez, Pierre. "Alea." *Perspectives of New Music* 3, no. 1 (Autumn–Winter 1964): 42–53.

Breton, André and Paul Éluard, ed. *Dictionnaire abrègè du surrèalisme*. Paris: Galerie des Beaux-Arts, 1938.

Brodsky, Seth. *From 1989, or European Music and the Modernist Unconscious*. Berkeley: University of California Press, 2017.

Cage, John. "An Autobiographical Statement." *Southwest Review* 76, no. 1 (1991): 59–76.

Cage, John. *For the Birds*, ed. Tom Gorat and John Cage. Salem, NH: Marion Boyars Publishers, 1981.

Cage, John. *Silence*. Middletown: Wesleyan University Press, 1961.

Chanan, Michael. *Repeated Takes: A Short History of Recording and its Effects on Music*. New York: Verso, 1995.

Chion, Michel. *Sound: An Acoulogical Treatise*, translated by James A. Steintrager. Durham: Duke University Press, 2016.

Cimini, Amy. "Telematic Tape: Notes on Maryanne Amacher's *City-Links* (1967–1980)." *Twentieth-Century Music* 14, no. 1 (2017): 93–108.

Clark, Andy. *Surfing Uncertainty: Prediction, Action, and the Embodied Mind*. New York: Oxford University Press, 2016.

Clarke, Eric. *Ways of Listening: An Ecological Approach to Musical Meaning*. New York: Oxford University Press, 2005.

Cohn, Richard. "Transpositional Combinations of Beat-Class Sets in Steve Reich's Phase-Shifting Music." *Perspectives of New Music* 30, no. 2 (Summer 1992): 146–77.

Coleman, Beth. "Race as Technology." *Camera Obscura* 70, no. 24 (2009): 176–207.

Cone, Edward T. *The Composer's Voice*. Berkeley: University of California Press, 1974.

Connerton, Paul. *How Societies Remember*. Cambridge: Cambridge University Press, 1989.

Cook, Nicholas. "Theorizing Musical Meaning." *Music Theory Spectrum* 23, no. 2 (Fall 2001): 170–195.

Cox, Arnie. *Music and Embodied Cognition*. Bloomington: Indiana University Press, 2017.

Cox, Arnie. "Embodying Music: Principles of the Mimetic Hypothesis." *Music Theory Online* 17, no. 2 (July 2011).

Cox, Christoph. "Sonic Realism and Auditory Culture: A Reply to Marie Thompson and Annie Goh." *Parallax* 24, no. 2 (2018): 234–242.

Crooks, Edward James. "John Cage's Entanglement with the Ideas of Coomaraswamy." PhD diss., University of York, 2011.

DeNora, Tia. "Music as a Technology of the Self." *Poetics* 27, no. 2 (1999): 31–56.

Derrida, Jacques, translated by Leonard Lawlor. *Voice and Phenomenon: Introduction to the Problem of the Sign in Husserl's Phenomenology*. Chicago: Northwestern University Press, 2010.

De Souza, Jonathan. *Music at Hand: Instruments, Bodies, and Cognition*. New York: Oxford University Press, 2017.

Dohoney, Ryan. "A Flexible Musical Identity: Julius Eastman in New York City, 1976–90." In *Gay Guerilla*, edited by Renée Levine Packer and Mary Jane Leach, 116–30. Rochester, NY: University of Rochester Press, 2015.

Dolar, Mladen. *A Voice and Nothing More*. Cambridge: The MIT Press, 2006.

Drott, Eric. "Music as a Technology of Surveillance." *Journal of the Society for American Music* 12, no. 3 (2018): 233–267.

Drott, Eric. "The End(s) of Genre." *Journal of Music Theory* 57, no. 1 (2013): 1–45.

Doran Eaton, Rebecca M. "Marking Minimalism: Minimal Music as a Sign of Machines and Mathematics in Multimedia." *Music and the Moving Image* 7, no. 1 (Spring 2014): 3–23.

Eppley, Charles. "Beyond Cage: On Sonic Art History & Historiography." *Parallax* 23, no. 3 (2017): 342–360.

Feldman, Martha and Judith T. Zeitlin, ed. *The Voice as Something More: Essays Toward Materiality*. Chicago: University of Chicago Press, 2019.

Fetterman, William. *John Cage's Theatre Pieces: Notations and Performances.* Amsterdam: Harwood Academic Publishers, 1996.

Fink, Robert. *Repeating Ourselves: American Minimal Music as Cultural Practice*. Berkeley: University of California Press, 2005.

Foster, Hal, Rosalind Krauss, Yve-Alain Bois, and Benjamin Buchloh. *Art Since 1900: Modernism, Antimodernism, Postmodernism*. New York: Thames & Hudson, 2004.

Fried, Michael. "Art and Objecthood." *Artforum* 5, vol. 10 (Summer 1967): 12–23.

Friedman, B.H., ed. *Give My Regards to Eighth Street: Selected Writings of Morton Feldman*. Cambridge: Exact Change, 2000.

Gallope, Michael. "Why Was This Music Desirable?: On a Critical Explanation of the Avant-Garde." *The Journal of Musicology* 31, no. 2 (Spring 2014): 199–230.

Gallope, Michael. "Michael Gallope responds." *The Journal of Musicology* 31, no. 2 (Spring 2014): 297–298.

Gann, Kyle. *No Such Thing as Silence: John Cage's 4'33"*. New York: Yale University Press, 2010.

Garcia, Luis-Manuel. "On and On: Repetition as Process and Pleasure in Electronic Dance Music." *Music Theory Online* 11, no. 4 (October 2005).

Geertz, Clifford. *The Interpretation of Cultures: Selected Essays by Clifford Geertz*. New York: Basic Books, 1973.

Gibson, James. *The Ecological Approach to Visual Perception*. Ann Arbor: University of Michigan Press, 1979.

Godøy, Rolf Inge. "Motor Constraints Shaping Musical Experience." *Music Theory Online* 24, no. 3 (September 2018).

Godøy, Rolf Inge. "Images of Sonic Objects." *Organised Sound* 15, no. 1 (2010): 54–62.

Goehr, Lydia. *The Imaginary Museum of Musical Works: An Essay in the Philosophy of Music*. New York: Oxford University Press, 1992.

Goh, Annie. "Sounding Situated Knowledges: Echo in Archaeoacoustics." *Parallax* 23, no. 3 (2017): 283–304.

Gopinath, Sumanth. "Reich in Blackface: *Oh Dem Watermelons* and Radical Minstrelsy in the 1960s." *Journal of the Society for American Music* 5, no. 2 (2011): 139–193.

Gopinath, Sumanth. "The Problem of the Political in Steve Reich's *Come Out*." In *Sound Commitments: Avant-Garde Music and the Sixties*, edited by Robert Adlington. New York: Oxford University Press, 2009: 121–44.

Gopinath, Sumanth. "Contraband Children: The Politics of Race and Liberation in the Music of Steve Reich, 1965–1966." PhD diss., Yale University, 2005.

Gordon, Theodore Barker. "Bay Area Experimentalism: Music and Technology in the Long 1960s." PhD diss., University of Chicago, 2018.

Gottschalk, Jennie. *Experimental Music Since 1970*. New York: Bloomsbury, 2016.

Gough, Maria. "Frank Stella is a Constructivist." *October* 119 (Winter 2007): 94–120.

Grubbs, David. *Records Ruin the Landscape: John Cage, the Sixties, and Sound Recording*. Durham: Duke University Press, 2014.

Guthrie, Stewart Elliott. *Faces in the Clouds: A New Theory of Religion*. New York: Oxford University Press, 1993.

Hanslick, Eduard. *On the Musically Beautiful: A Contribution Towards the Revision of the Aesthetics of Music*. Translated by Geoffrey Payzant. Indianapolis: Hackett, 1986.

Hanslick, Eduard. *Eduard Hanslick's One the Musically Beautiful: A New Translation*. Edited and translated by Lee Rothfarb and Christoph Landerer. New York: Oxford University Press, 2018.

Hanson-Dvoracek, Andrew. "A Post-Minimalist Analysis of Julius Eastman's *Crazy Nigger*." In *Gay Guerilla*, edited by Renée Levine Packer and Mary Jane Leach, 140–50. Rochester, NY: University of Rochester Press, 2015.

Hanson-Dvoracek, Andrew. "Julius Eastman's 1980 Residency at Northwestern University." Master's thesis, University of Iowa, 2011.

Haskins, Rob. *John Cage*. London: Reaktion Books, 2012.

Haskins, Rob. "On John Cage's Late Music, Analysis, and the Model of Renga in *Two*^{2}." *American Music* 27, no. 3 (Fall 2009): 327–355.

Haskins, Rob. *Anarchic Societies of Sounds: The Number Pieces of John Cage*. Saarbrücken: VDM, 2005.

Hepokoski, James and Warren Darcy. *Elements of Sonata Theory: Norms, Types, and Deformations in the Late-Eighteenth-Century Sonata*. New York: Oxford University Press, 2006.

Hicks, Michael. "John Cage's Studies with Schoenberg." *American Music* 8, no. 2 (Summer 1990): 125–40.

Hinton, Stephen. "The Emancipation of Dissonance: Schoenberg's Two Practices of Composition." *Music & Letters* 91, no. 4 (November 2010): 568–579.

Iverson, Jennifer. *Electronic Inspirations: Technologies of the Cold War Musical Avant-Garde.* New York: Oxford University Press, 2019.

Iverson, Jennifer. "Invisible Collaborations: The Dawn and Evolution of *elektronische Musik*." *Music Theory Spectrum* 39, no. 2 (Fall 2017): 200–222.

Johnson, Timothy A. "Minimalism: Aesthetic, Style, or Technique?" *The Musical Quarterly* 78, no. 4 (Winter 1994): 742–773.

Joseph, Branden W. *Beyond the Dream Syndicate: Tony Conrad and the Arts after Cage*. New York: Zone Books, 2008.

Joseph, Branden W. *Random Order: Robert Rauschenberg and the Neo-Avant-Garde*. Cambridge: The MIT Press, 2003.

Kassabian, Anahid. *Ubiquitous Listening: Affect, Attention, and Distributed Subjectivity*. Berkeley: University of California Press, 2013.

Kane, Brian. "Sound Studies Without Auditory Culture: A Critique of the Ontological Turn." *Sound Studies* 1, no. 1 (2015): 2–21.

Kane, Brian. *Sound Unseen*. New York: Oxford University Press, 2014.

Kane, Brian. "*L'Objet Sonore Maintenant*: Pierre Schaeffer, Sound Objects, and the Phenomenological Reduction." *Organised Sound* 12, no. 1 (April 2007): 15–24.

Katz, Mark. *Capturing Sound: How Technology Has Changed Music*. Berkeley: University of California Press, 2010.

Kim-Cohen, Seth. *In the Blink of an Ear: Toward a Non-Cochlear Sonic Art*. New York: Continuum, 2009.

Korsyn, Kevin. "The Death of Musical Analysis? The Concept of Unity Revisited." *Music Analysis* 23, no. 2/3 (July, October 2004): 337–351.

Kostelanetz, Richard, ed. *Conversing with Cage*. New York: Routledge, 2003.

Kotz, Liz. *Words to be Looked At: Language in 1960s Art*. Cambridge: MIT Press, 2010.

Krauss, Rosalind. "Two Moments from the Post-Medium Condition." *October* 116, no. 1 (Spring 2006): 55–62.

Krauss, Rosalind. "Sense and Sensibility: Reflection on Post 1960s Sculpture." *Artforum* 12, no. 3 (November 1973): 42–53.

Kuh, Katharine. *The Artist's Voice: Talks with Seventeen Artists*. Evanston: Harper & Row, 1962.

Levine, Caroline. *Forms: Whole, Rhythm, Hierarchy, Network*. Princeton: Princeton University Press, 2015.

Lewis, George. "Improvised Music After 1950: Afrological and Eurological Perspectives." *Black Music Research Journal* 16, no 1 (Spring 1996): 91–122.

Lewis, Michael. *Derrida and Lacan: Another Writing*. Edinburgh: Edinburgh University Press, 2008.

LeWitt, Sol. "Paragraphs on Conceptual Art." *Artforum* 5, vol. 10 (Summer 1967): 79–84.

Leydon, Rebecca. "Toward a Typology of Minimalist Tropes." *Music Theory Online* 8, no. 4 (2002).

Leydon, Rebecca. "Narrative Strategies in Debussy's Late Style." PhD diss., McGill University, 1996.

Lippard, Lucy and John Chandler. "The Dematerialization of Art." *Art International* 12, no. 2 (1968): 31–37.

Margulis, Elizabeth. *On Repeat: How Music Plays the Mind*. New York: Oxford University Press, 2014.

Maus, Fred E. "Music as Narrative." *Indiana Theory Review* 12, no. 1 (Spring and Fall, 1991): 1–34.

Maus, Fred E. "Music as Drama." *Music Theory Spectrum* 10, no. 1 (Spring, 1988): 56–73.

McCormick, Lisa. *Performing Civility: International Competitions in Classical Music*. Cambridge: Cambridge University Press, 2015.

Mertens, Wim. *American Minimal Music*. London: Kahn & Averill, 1988.

Monahan, Seth. "Action and Agency Revisited." *Journal of Music Theory* 57, no. 2 (Fall 2013): 321–371.

Mumma, Gordon, Allan Kaprow, James Tenney, Christian Wolff, Alvin Curran, and Maryanne Amacher. "Cage's Influence: A Panel Discussion." In *Writings Through John Cage's Music, Poetry, and Art*, edited by Christopher Hatch and David W. Bernstein, 167–89. Chicago: University of Chicago Press, 2001.

Morgan, Robert P. "The Concept of Unity and Musical Analysis." *Music Analysis* 22, no. 1/2 (2003): 7–50.

Nakai, You. "How to Imitate Nature in Her Manner of Operation: Between What John Cage Did and What He Said He Did." *Perspectives of New Music* 52, no.3 (Autumn 2014): 141–160.

Neal, Jocelyn. "Popular Music Analysis in American Music Theory." *Zeitschrift der Gesellschaft für Musiktheorie* 2, no. 2–3 (2005): 173–180.

Neff, Severine. "Point/Counterpoint: John Cage Studies with Arnold Schoenberg." *Contemporary Music Review* 33, no. 5–6 (2014): 451–482.

Nicholls, David. *John Cage*. Chicago: University of Illinois Press, 2007.

Osborne, Peter. *Conceptual Art*. London: Phaidon, 2002.

Packer, Renée Levine and Mary Jane Leach, ed. *Gay Guerilla*. Rochester, NY: University of Rochester Press, 2015.

Patterson, David W., ed. *John Cage: Music, Philosophy, and Intention (1933–1950)*. New York: Routledge, 2002.

Piekut, Benjamin. "Actor-Networks in Music History: Clarifications and Critiques." *Twentieth-Century Music* 11, no. 2 (2014): 191–215.

Piekut, Benjamin. "Chance and Certainty: John Cage's Politics of Nature." *Cultural Critique* 84 (Spring 2013): 134–163.

Piekut, Benjamin. *Experimentalism Otherwise*. Berkeley: University of California Press, 2011.

Pierson, Marcelle. "Voice, Technê, and *Jouissance* in *Music for 18 Musicians*." *Twentieth-Century Music* 13, no. 1 (2016): 25–52.

Potter, Keith. *Four Musical Minimalists: La Monte Young, Terry Riley, Steve Reich, Philip Glass*. Cambridge: Cambridge University Press, 2002.

Pritchett, James. *The Music of John Cage*. New York: Cambridge University Press, 1993.

Quinn, Ian. "Fuzzy Extensions to the Theory of Contour." *Music Theory Spectrum* 19, no. 2 (October 1997): 232–263.

Reich, Steve. *Writings on Music, 1965–2000*, edited by Paul Hillier. New York: Oxford University Press, 2004.

Revill, David. *The Roaring Silence: John Cage; A Life*. New York: Arcade, 1993.

Rings, Steven. "Music's Stubborn Enchantments (And Music Theory's)." *Music Theory Online* 24, no. 1 (March 2018).

Roeder, John. "Beat-Class Modulation in Steve Reich's Music." *Music Theory Spectrum* 25, no. 2 (Fall 2003): 275–304.

Rogalsky, Matthew. "'Nature' as an Organizing Principle: Approaches to Chance and the Natural in the Work of John Cage, David Tudor, and Alvin Lucier." *Organised Sound* 15, no. 2 (2010): 133–36 .

Russolo, Luigi, translated by Robert Filliou. *The Art of Noise*. New York: Something Else Press, [1913] 1967.

Rutherford-Johnson, Tim. *Music after the Fall: Modern Composition and Culture since 1989*. Berkeley: University of California Press, 2017.

Schaeffer, Pierre. *Treatise on Musical Objects*, translated by Christine North and John Dack. Berkeley: University of California Press, 2017.

Scherzinger, Martin. "Curious Intersections, Uncommon Magic: Steve Reich's *It's Gonna Rain*." *Current Musicology* 79 & 80 (2005): 207–244.

Shank, Barry. *The Political Force of Musical Beauty*. Durham: Duke University Press, 2014.

Shultis, Christopher. *Silencing the Sounded Self*. Boston: Northeastern University Press, 1998.

Solis, Gabriel. "Thoughts on an Interdiscipline: Music Theory, Analysis, and Social Theory in Ethnomusicology." *Ethnomusicology* 56, no. 3 (Fall 2012): 530–554.

Sterne, Jonathan. *MP3: The Meaning of a Format*. Durham: Duke University Press, 2012.

Sterne, Jonathan, ed. *The Sound Studies Reader*. New York: Routledge, 2012.

Taruskin, Richard. "Agents and Causes and Ends, Oh My." *The Journal of Musicology* 31, no. 2 (Spring 2014): 272–293.

Tenzer, Michael and John Roeder, ed. *Analytical and Cross-Cultural Studies in World Music*. New York: Oxford University Press, 2011.

Thompson, Marie. "Whiteness and the Ontological Turn in Sound Studies." *Parallax* 23, no. 3 (2017): 266–282.

Thomson, Virgil. "Expressive Percussion." In *John Cage*, edited by Richard Kostelanetz, 71–73. London: Allen Lane, 1971.

Tresch, John and Emily I. Dolan. "Toward a New Organology: Instruments of Music and Science." *Osiris* 28, no. 1 (January 2013): 278–298.

Tucker, Mark, ed. *The Duke Ellington Reader*. New York: Oxford University Press, 1995.

Turner, Steve Sweeney and John Cage. "John Cage's Practical Utopias: John Cage in Conversation with Steve Sweeney Turner." *Musical Times* 131, no. 1771 (Sept. 1990): 469–472.

Urquiza-Haas, Esmerelda G. and Kurt Kotrschal. "The Mind Behind Anthropomorphic Thinking: Attribution of Mental States to Other Species." *Animal Behaviour* 109, (2015): 167–76.

Wolff, Christian and David Patterson. "Cage and Beyond: An Annotated Interview with Christian Wolff." *Perspectives of New Music* 32, no. 2 (Summer 1994): 54–87.

Zbikowski, Lawrence M. *Conceptualizing Music*. New York: Oxford University Press, 2002.