City University of New York (CUNY)
CUNY Academic Works

Dissertations, Theses, and Capstone Projects

CUNY Graduate Center

10-2014

The Art of the Commonplace: Found Sounds in Compositional Practice

Jennifer Stock
Graduate Center, City University of New York

How does access to this work benefit you? Let us know!

More information about this work at: https://academicworks.cuny.edu/gc_etds/390

Discover additional works at: https://academicworks.cuny.edu

This work is made publicly available by the City University of New York (CUNY).
Contact: AcademicWorks@cuny.edu

THE ART OF THE COMMONPLACE: FOUND SOUNDS IN COMPOSITIONAL PRACTICE

by

JENNIFER STOCK

A dissertation submitted to the Graduate Faculty in Music in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

2014

©2014

JENNIFER STOCK

All Rights Reserved

This manuscript has been read and accepted for the
Graduate Faculty in Music in satisfaction of the
dissertation requirement for the degree of Doctor of Philosophy.

August 28, 2014
Date

Shaugn O'Donnell

Chair of the Examining Committee

August 28, 2014
Date

Norman Carey

Executive Officer

David Olan

David Joselit

Douglas Geers
Supervisory Committee

THE CITY UNIVERSITY OF NEW YORK

Abstract

THE ART OF THE COMMONPLACE: FOUND SOUNDS IN COMPOSITIONAL PRACTICE

By

Jennifer Stock

Adviser: Professor David Olan

This dissertation contains a historical analysis of the emergence of found sounds or everyday noises as a compositional strategy in Western art music through the first half of the 20th century. Pioneering works are examined to determine the motives and aesthetic goals that first led composers to bring noise to the musical surface, including the avant-garde collaboration *Parade*, Futurist noise experiments, and Pierre Schaeffer's early work with *musique concrète*. These early works are used to create two analytical spectra with which to analyze contemporary pieces that incorporate founds sounds with instrumental music: one spectrum that considers the level of integration of a noise with the instrumental or pitched material, and another that measures the degree to which the everyday noises have been defamiliarized from their original context. This mechanism for analysis is employed in four case studies: Steve Reich's *Different Trains*, Ingram Marshall's *Fog Tropes II*, DJ Spooky's *Zeta Reticulli/If I Told Him a Complete Portrait of Picasso*, and The Books' *The Lemon of Pink* I.

Preface

Throughout the 20th century many pioneering composers opened musical space to a wider array of timbres through the inclusion of everyday sounds. These so-called “found sounds” radically increased available musical expression and provided a new sonic dialectic that allowed for interaction between referential sounds (urban noise, wind, spoken words, machinery, etc.) and abstract instrumental sound. Perhaps recognizing a tradition overly-saturated with pitch-based organization, composers such as Varèse and Cage imagined music where sound itself could be shaped and sculpted in its own right, freed from the mechanisms of the tonal system. As Cage put it in his *Credo* of 1937, he imagined the future of music being a collision of “noise vs. so-called musical sounds” rather than the old interplay of “consonance and dissonance.” These imaginings were soon made a reality by the development of technologies for recording and processing sound. By mid-century, composers had the ability to add to the relatively narrow gamut of instrumental sound the infinite spectrum of frequency content, from pure noise to the most subtle utterances of daily life.

Today the inclusion of found sounds in music veers towards the commonplace, with DJs frequently sequencing found sounds into their mixes and composers using a full sonic palette as a matter of course; this more general acceptance of sounds as musical is one important byproduct of the overall trend towards sonic expansion in the 20th century. How did found sounds first find their way into the musical surface? What were the early aesthetic ideas that made the inclusion of everyday sound in music desirable? What kinds of compositional practices and procedures were developed to accommodate this new sonic content, much of it non-pitched? What is the aesthetic contribution of found sounds to 20th and 21st-century music, both classical and non-classical?

Beginning with an examination of the earliest works of Western art music to incorporate everyday noise, this dissertation seeks to chart the embrace of found sounds, from their position as an unorthodox and even unwieldy aspect of musical expression, to their more integrated usage after a century of technological improvement and aesthetic consideration. The pioneering composers chronicled in the first three chapters offer ideas and opinions about working with noises that serve as analytical lenses through which to chart the dialectical motions of later works. Above all, examining the use of everyday noise in compositional space provides an important strand in the history of sonic expansion, which has contributed to the loosened syntax and the dizzying plurality of choices available to the composer today.

Table of Contents

Chapter 1: Enriching the Surface: *Parade*, Papier Collé, and the Origins of Found Sound…….1

Chapter 2: Sounds of the City: the Futurists and *Amériques*……………………………………12

Chapter 3: Theories of Found Noises: Schaeffer and Cage…………………………………….27

Chapter 4: Compositional Procedures: Found Sounds in Four Case Studies…………………..48

Conclusion……………………………………………………………………………………….72

List of Illustrations

Figure 1: Picasso, *Guitar, Sheet Music, and Glass* (after November 18, 1912)…………..2

Figure 2: Figure 2: “Warsaw Ghetto boy,” Photographer unknown………………………54

Chapter I: Enriching the Surface:
Parade, Papier Collé, and the Origins of Found Sound

"The more scarred the work of art is by the battles waged on the borders between art and life, the more interesting it becomes."

-Anselm Kiefer

I.

An invocation of the everyday: a guitar, intimated by geometry, the daily newspaper, a Cubist drawing of a glass, and a snippet of sheet music, all superimposed on a conventional slab of wallpaper. In *Guitar, Sheet Music, and Glass (fig 1),* Picasso flattens and foreshortens elements of a bourgeois parlor, juxtaposing the abstracting and abstruse tendencies of Cubism with quotidian found objects in a radically non-illusionistic arrangement. Plastering the canvas with cheap and disposable ephemera such as imitation wood grain and newsprint, Picasso has wittily invaded the canvas with textures associated with the world of craft. It's an evocative still life; one sees the everyday anew, just as one might with a grouping of Cézanne apples or the glowing contours of one of Heda's goblets. While it shares many attributes of a conventional still life, the nature of the representation in Picasso's collage has fundamentally shifted—the gap between the object and its representation has simultaneously widened and collapsed. On one hand, the non-illusionistic arrangement of the everyday objects and the abstraction of the glass and guitar create a provocative distance between art and object. On the other hand, the inclusion of actual wallpaper and sheet music instead of painterly representations of them eliminates this distance entirely. What is the viewer to make of such a work? The artist gives us a hint: “Le Journal” (the newspaper) has been shortened to “Le Jou,” (the game), inviting us to approach the collage with the spirit of play, as in the presence of a witty paradox.

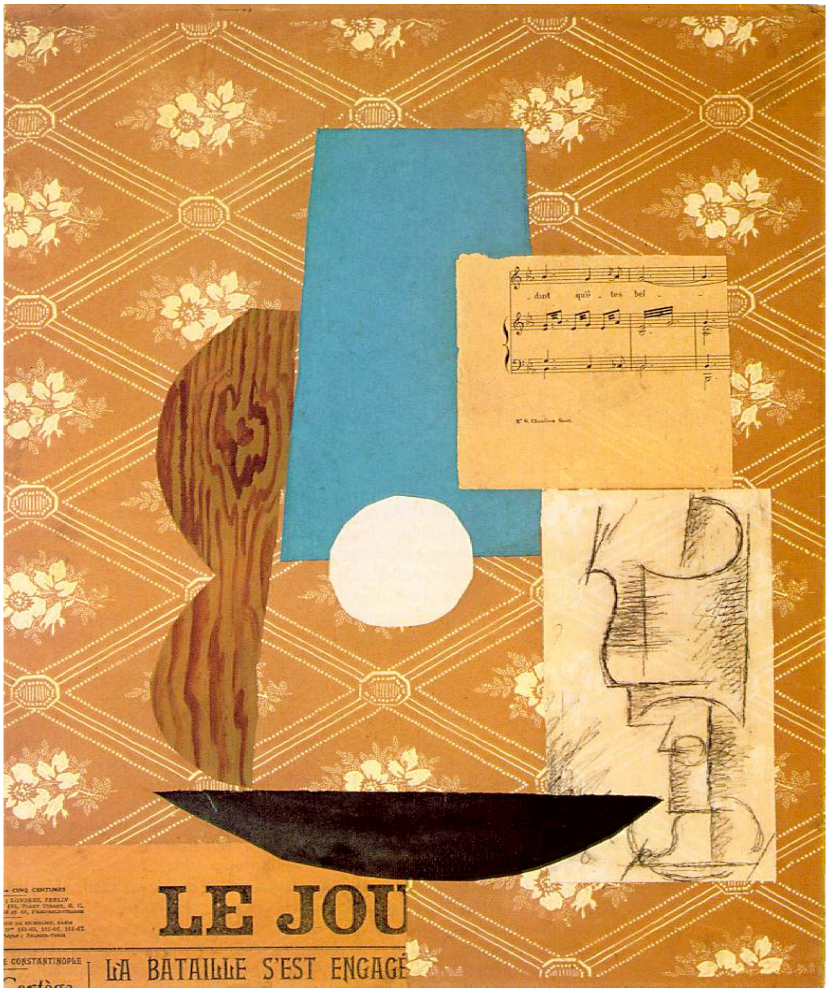

Figure 1: Picasso, *Guitar, Sheet Music, and Glass* (after November 18, 1912)

Guitar, Sheet Music, and Glass, 1912, marks the first appearance of newsprint on the surface of a painting in western art. It marks the third in a sequence of five collages, the so-called “Sonnet” collages, which incorporate fragments of sheet music— snippets of revue and cafe-concert hits.[1] And it marks almost a year of collage-making on the part of Picasso, who along with Braque, is credited with the creation of the first fine art collages in Western history in a pivotal transition period in Cubism. It's a moment of art history that will have a profound influence on the rest of the 20th century, from Duchamp to Warhol to Rauschenberg, and a move that will eventually create a radical re-definition of art: if literal everyday objects can be art, then what exactly is art?

---

[1] Weiss, Jeffrey S. *The Popular Culture of Modern Art: Picasso, Duchamp, and Avant-Gardism*. New Haven: Yale University Press, 1994. Print. 8.

Five years after Picasso created the collage pictured above, he is at work on costumes and scenery for the latest Diaghilev confection, the ballet *Parade*, a gleefully heterogeneous vision of modernity created via the combined strengths of Picasso, Massine, Satie, and Cocteau, the latter working strenuously to accommodate Diaghilev's infamous edict "Surprise me." The ballet's action centers around two sideshow managers trying unsuccessfully to coax spectators into their tent to see a traveling sideshow; the audience, sensing a ruse, refuses to enter, and so the managers present a *parade*, a series of preview acts designed to entice their audience, including a Chinese fortuneteller, acrobats, and an American girl. With its simultaneous embrace of avant-garde leanings and popular culture, *Parade* riffs continually on the misunderstandings that occur between the artist and the public. Forces of the early modern city infuse the work's images and sounds: music hall, street fair, circus, fairground, the newly emerging cinema, the skyscraper, the typewriter and the airplane. Satie's score intermingles light amusements and the everyday sounds of the city with melancholic punctuations and capricious ostinati. With gentle irony, the composer swirls an eclectic sound world, an unruly cascade of marches, carnival, and ragtime, interlaced with the clamorous sounds of technology: a typewriter, a siren, a revolver, and a lottery wheel. Picasso's inventive stage design included a Cubist backdrop and Cubist costumes for the two Managers and the horse. This collaborative work, which choreographer Robert Joffrey identified as the 20th century's first multimedia piece, forms a large-scale collage based on its artists' deep engagement with Parisian popular entertainment in all of its forms, and more broadly speaking with the ebullience and excitement of city culture itself.

As one could gather from seeing the Picasso's *Guitar, Sheet Music, and Glass* (and it's far from the only example), *Parade* is not the first combination of music-hall and Cubism, of high art and low art, of artistic "*jeu d'esprit*" and avant-garde leanings. As Jeffrey Weiss points out in his comprehensive work on the connection between *Parade's* visual content, popular culture, and Cubism, Cocteau's choice of subject—the hoax of the avant-garde—had been a commonplace in the French press for a number of years, with Cubism standing as the butt of many a joke, emblematic of the abstruse leanings of the avant-garde.

Spanning five years, we have two sample works that recycle similar elements, and that, most crucially to this investigation, both embrace visual and sonic "noise." *Parade* marks the first piece of Western art music to make extended use of everyday sound interwoven with acoustic instruments, and Picasso and Braque's collages were the first pieces of Western art to make use of everyday objects fused into the "pure" sphere of painting. Both motions contain a shock value, agitating the borderland between art and life. Arthur C. Danto comments on the Cubist collage artists' appropriation of everyday life:

> Picasso...once pasted a label from a bottle of Suze onto a drawing of a bottle, implying that there was little point in approximating to a reality by arduous academic exercise when we could just coopt fragments of reality and incorporate them in our works...Who needs, and what can be the point and purpose of having, duplicates of a reality we already have before us? "[2]

One can ask the same question of the *Parade* artists: what can be the purpose of presenting an audience with urban sounds from their everyday existence, of creating a surface disruption between the purer frequencies of the instrumental score (which in and of itself has been likened to a collage, found sounds excepted) and the clamor of the everyday? Of course Danto's quote broaches an important and obvious distinction between found object and found sound; whereas art history from Giotto to Picasso is *roughly* a history of the craft of imitation, music's history does not deal explicitly with imitation. Regardless, *Parade* enters the scene at a time when an interest in visual and sonic "noise" brings the histories into a momentary parallel. Painting becomes more of an abstraction both in its handling by the Cubist painters (themselves on the vanguard of abstraction) and by the jolting distance between everyday objects and the normatively illusionistic sphere of painting, just as the typewriter and sirens disrupt and adjust our sense of *Parade's* instrumental music. The dialectics of aesthetic history have countless instances of boundary stretching and counter-reaction, but there is something specific and distinct in both of these cases: music, by including everyday urban sounds, had reached a boundary far beyond what was ordinarily considered musical, and art, in including quotidian objects, had broached the pure sphere of painting with the cheap, the disposable, the ephemeral—in a word, with *stuff*. On the visual side of the revolution, Weiss puts it strongly: "In the history of art, there is simply no precedent for this combination [in collage] of iconography and attitude."[3] On the aural side, it's a revolution that will remain relatively quiet until the 1950s, when technology will catch up with conception and facilitate the widespread use of found sounds via the tape recorder.

---

[2] Danto, Arthur C. *The Transfiguration of the Commonplace: A Philosophy of Art*. Cambridge, Mass: Harvard University Press, 1981. 8.

The decision to include urban found noises in *Parade* was not a straightforward one, as the collaborators faced many disagreements as to the tone and spirit of the work (resulting in what some have identified as a "comedy of errors").[4] In his biography of Satie, Robert Orledge points to Cocteau as the likely originator of the idea to use found sounds in the score, as Cocteau was concerned with making *Parade* an interdisciplinary take on Cubism. Satie and Picasso initially opposed the use of everyday sound, but eventually gave in to what they described as their "lovable maniac."[5] While Satie had to be convinced to use the sounds, once on board he took care to notate their deployment meticulously in the score to *Parade*.

---

[3] Weiss, 12.

[4] Weiss, 253.

Cocteau was the accepted mouthpiece for the collaboration, and he gave his most explicit explanation of the noises in *Parade* in an interview for Vanity Fair in 1917 (the quote is attributed to Satie but widely considered to be Cocteau's wording):

> I only composed a background to throw into relief the noises which the playwright [Cocteau] considers indispensable...imitated noises of waves, typewriters, revolvers, sirens, or aeroplanes, are, in music, of the same character as the bits of newspapers, painted wood-grain, and other everyday objects that the cubist painters employ frequently in their pictures, in order to localize objects and masses in nature.[6]

If Satie was initially reluctant to use the sounds, his understanding of the effect Cocteau wanted is certain. Satie was exceptionally knowledgeable about both Analytical and Synthetic Cubism as well as *papier collé.* Picasso's mistress pronounced that Satie was *the* living person who could best explain Cubist art, obviously including Picasso himself as well as Apollinaire, author of *The Cubist Painters,* in her estimation.[7] While Satie didn't publish writing about Cubism the way Apollinaire did, it's easy to see how his handling of compositional materials could be influenced, directly or indirectly, by an art form that saturated his experience and was a constant fixture of conversation at gatherings of the Parisian avant-garde.

Regardless of how the found sounds made their way into the work, the collaborators of *Parade*, steeped in a wide sphere of mutual popular and avant-garde influences, established a pioneering precedent in 1917, one that would eventually, given the proper developments in technology and the increasing tolerance towards a wider array of timbral choices in both art and popular music, result in the widespread acceptance of found sounds in musical space. And collage itself, as the "all-purpose 20th-century device,"[8] acted as a precipitant for juxtaposing highly differentiated materials both visually and aurally; collage's aesthetic acceptance of surface disruption between materials and textures forms a central thread in the widening of expressive possibilities. Author Donald Barthelme expressed this succinctly: "the principle of collage is the central principle of all art in the 20th century in all media." And indeed the theme of modernism itself as an endless, figurative permutation on collage has been explored at length and examined as a trend within all artistic disciplines.[9]

---

[5] Gillmor, Alan M. *Erik Satie*. Boston: Twayne Publishers, 1988. Print, 200.

[6] Orledge, Robert. *Satie the Composer*. Cambridge: Cambridge University Press, 1990. Print. 224

[7] Orledge, 226.

II.

> You read handbills, catalogues, posters that shout out loud:
> Here's this morning's poetry, and for prose you've
> got the newspapers,
> Sixpenny detective novels full of cop stories,
> Biographies of big shots, a thousand different titles,
> Lettering on billboards and walls,
> Doorplates and posters squawk like parrots.

-Apollinaire, from "Zone"

---

[8] Levin, Kim. *Collage: Critical Views*. ed. Katharine Hoffman. Ann Arbor, Mich: UMI Research Press, 1989.

[9] Watkins, Glenn. *Pyramids at the Louvre: Music, Culture, and Collage from Stravinsky to the Postmodernists*. Cambridge, Mass: Belknap Press of Harvard University Press, 1994. Print.

Why did everyday sounds and everyday objects find their way into the fine arts around the same time? One explanation undoubtedly lies in the visual and aural stimulus of the urban environment. In 1910 Paris was strewn with printed ephemera; the newly industrialized city bombarded the eye with chaotic layers of advertisements and other paper materials, an effusion of artifacts that bore testament to an increasingly consumption-based culture. Apollinaire saw the addition of visual "noise" or everyday objects in early Cubist collages as what he termed *"enumeration"* —a calling of attention to the material nature of the surface.[10] This increased "noise" of early urban culture, a hodgepodge of image and printed materials, led artists to locate a new source of inspiration in the residue of consumption culture, to take "a more anthropological interest in the category of the discarded, the unwanted, the overlooked, as marks of modernity."[11] In addition to the influx of printed materials, the 1910s and 1920s saw the rise of mass technologies, such as the phonograph, radio, jazz, Broadway, and cinema, which further defined a major cultural shift for artists. And the revolution was not simply visual; urbanity is as noisy as it is visually stimulating, and industry and technology brought a host of new environmental sounds: frequency-rich and ranging from the angular and aggressive to the marginal and suggestive. It's not an accident that all of Cocteau and Satie's choices for "noise" in Parade reference the clamor of urban centers—the white noise of a revolver, say, instead of that of a waterfall.

In a world increasingly inundated with material things, collage provided not just an imitation of the urban tendency towards the juxtaposition of aggregate layers, but also a way of preserving cultural ephemera through the sphere of art. Affixing a newspaper or a playbill to a canvas is snatching a bit of material culture from oblivion, and this idea of "preserving" the ephemeral will become central to exploration of later works using recorded found sounds, which take neglected aspects of the sonic environment and heighten and preserve them. In *Parade* the references to the new urban sound environment does not constitute a "rescue" but certainly does act to elevate and embrace ephemeral sounds, an *enumeration* of urban environmental sound.

---

[10] Apollinaire, Guillaume, and Peter Read. *The Cubist Painters*. Berkeley, Calif: University of California Press, 2004. Print.

[11] Taylor, Brandon. *Collage: The Making of Modern Art*. London: Thames & Hudson, 2004. Print, 8.

If the frenetic dynamics of city centers created a logical cultural backdrop for the appearance of collage, found sounds, and found objects, there were also technical considerations more specific to Cubism that contributed to the emergence of Picasso and Braque's papier collé, which can provide aesthetic cross-over for understanding the effect of found sounds when combined with instrumental music. The critic Clement Greenberg wrote extensively about the artistic and technical aspects of the revolutionary new style of collage that Picasso and Braque were practicing. Greenberg concentrated on the problem of depth in Cubism, and looked on the addition of "extraneous" materials to the picture plane as a way of adding depth to the canvas, claiming:

> By its greater corporeal presence and its greater extraneousness, the more vivid idea of depth than simulated printing or simulated textures had ever done....[creating] an oscillation between surface and depth so as to encompass fictive space in front of the surface as well as behind it.[12]

Greenberg argues that the shock of a foreign substance on the picture plane, a bit of newsprint or the slightly raised surface of a wallpaper pattern, immediately sets all of the fragments of the Cubist painting at a distance from the found object, creating the illusion of depth. Prior to the Cubists' use of papier collé, the artists worked with varying results to address the problem of depth, because the non-illusionistic abstractions of Cubism fundamentally flattened the picture plane. Greenberg's purpose here is to pinpoint the motives of Braque and Picasso in placing extraneous bits of material culture onto the canvas; he acknowledges that some writers have attributed this move to a commentary on the nature of "reality," but professes a preference for pinpointing the technical rationale, taking a purist's approach to the development of the movement. And in so doing he provides a helpful analogy for regarding some textures that employ found sounds and instrumental music, where the "greater extraneousness" of the everyday sound, its tendency to stand out against a more uniform background, creates an illusion of depth, a widened sense of the acoustic space. The background/foreground oscillation that he speaks of in Cubist papier collé is also set into motion in *Parade*, where the sonic "distance" between the everyday sounds and the instrumental music creates a new sensation of breadth, a new interplay on the music's surface.

---

[12] Greenberg, Clement. "Collage" in *Art and Culture: Critical Essays*. Boston: Beacon Press, 1961. Print.

Charting the emergence of found sounds in the early 20th century through a seminal work like *Parade* encourages an interdisciplinary approach. Even if the sounds hadn't been developed within the context of an interdisciplinary work, it's still useful to widen one's lens and look for aesthetic cross-over when it might provide a better way of conceptualizing the practice of using everyday sound. As it is, *Parade* acts as a cauldron of conflicting artistic energies; as a foundational work of modernism it does not have the coherent gloss of a work like *The Rite of Spring*, but rather is best seen as a repository of widening impulses, paving the way for many of the 20th century's preoccupations, such as high/low admixtures, rejection of orthodoxy, and the self-conscious interrogation of art's substance and relation to what it represents. If all art can be seen as a "transfiguration of the commonplace,"[13] then acts such as sticking newspaper to a canvas or of superimposing a clacking typewriter on strings (or of listening to a concert of

---

[13] Danto, preface to *The Transfiguration of the Commonplace.*

“silence” or going to a gallery to see a urinal) bring us perceptually closer to the borderland between art and what it imitates, agitating for a philosophical inquiry into the nature of art itself. While the question of representation is considerably shifted in the field of music, it is also important to consider the degree to which everyday sounds agitate the boundaries of musical expression: music that references our everyday sonic environments also brings us to a fruitful borderland between the “real” and the “abstract” and shifts our understanding of music’s patterning. While expanded pitch-based practices push the boundaries of music, perhaps nothing challenges the definition of music itself so thoroughly as the inclusion of everyday sound.

Chapter II: Sounds of the City:
the Futurists and *Amériques*

“We must break at all cost from this restrictive circle of pure sounds and conquer the infinite variety of noise-sounds”

-Luigi Russolo, The Art of Noises

Innovations and broadening aesthetic currents are seldom the result of singular forces, and while the incorporation of everyday sound into Western music might be considered part of the sea change brought about by burgeoning urban culture in the early 20th century, the specific artistic movements that contributed to the normalization of noise were many and not always aesthetically similar. No history of noise in Western art is conceivable without considering the Futurists, who, while arguably not contributing any major works to western music, appropriated noise as part of their riotous vision of an art that would be shockingly, bracingly new. While Cocteau and his crew used noise in *Parade* in conjunction with acoustic music to signify low/high admixtures believed central to their vision of the avant-garde, the Futurist embrace of noise was initially intended as an anti-establishment blow to conventional music. Both the *Parade* crew and the Futurists used noise in celebration of urban culture, though, and compositions from both camps tended to use everyday noise quite literally. The onset of noise as a more nuanced compositional tool can be credited to composer Edgard Varèse, who was at least obliquely influenced by the Futurist movement; Varèse’s works could be considered an evolution in the appropriation of everyday noises in music in the sense that they transcend the use of found sounds as blunt musical objects.

When Marinetti laid the groundwork for the Futurist movement in a manifesto published on the first page of the Parisian newspaper *Le Figaro* on February 20, 1909, he encrypted a wholesale celebration of noise in a series of rallying cries that were more centrally aimed to elevate the tumult of the modern city, the machine, and technology in new poetry, literature, and visual art.[14] In his manifesto on Futurism, Marinetti includes heightened descriptions of the noise of cars, trams, "deep-chested" locomotives and the propellers of airplanes. Many of the technologies he holds up as exemplar make noise. The blows Marinetti describes to older, more traditional art forms are described so that we can "hear" them, delivered with the aggressive energy of a verbal punch and a slap. Museums are the equivalent of graveyards; Marinetti embraces a restless anarchy. With such an assault on tradition, then in musical terms what else is left aside from noise?

The Futurist who would most stridently promote the use of everyday sound in music was the painter Luigi Russolo, who, in common with many other pioneers of sonic expansion, was eager to expand the palette of music in order to fulfill the aesthetic urgencies of Futurism before technological means had developed enough to allow easy placement of the "non-musical" into the musical space. Russolo joined the Futurist movement in 1910 and initially contributed a number of paintings to the movement, predominantly street scenes that overlaid and fractured geometric elements to indicate motion, speed, and blurring lights.

Russolo's contributions to the pioneering art of noise in music can be broken into three main categories: writings, instrument building, and compositions. In terms of writing, the most succinct and strident explanation of the ethos of everyday sound is the artist's "The Art of Noises" a short manifesto written in 1913 and inspired by a concert of Futurist music by Francesco Balilla Pratella that Russolo attended in 1912.[15] The manifesto argues that to ignore the "pounding atmosphere of great cities" is to sell music short of its potential for excitement and satisfaction.[16] Attacking the "somnolent" nature of concert halls, Russolo insists that acoustic music in the western tradition can no longer speak to audiences who have been influenced by the sound environment of the city.[17] He proclaims, "We must break at all cost from this restrictive circle of pure sounds and conquer the infinite variety of noise-sounds," reiterating the idea of a complete "break" with tradition, a revolutionary and complete rejection of tradition acting as a mainstay of the larger Futurist movement. He uses the notion of "breaking away" and "getting out" obsessively in the manifesto:

---

[14] Introduction to "The Futurists," Tate Modern Exhibition, 2009, online.

> Let's get out quickly, for I can't repress much longer the intense desire to create a true musical reality finally by distributing big loud slaps right and left, stepping and pushing over violins and pianos, bassoons and moaning organs! Let's go out![18]

Here the idea of getting out can be imagined on multiple levels: literally, he's encouraging composers and listeners to get out of the established tradition of accepting only acoustic instruments, but also further to "get out" to a wider listening space, an all-inclusive, noise-embracing realm of listening for which we literally need to leave the concert hall.

In his listing of specific sounds to broaden the reader's conception of noise as an artistic medium, Russolo lists first general sounds, such as "thunder, wind, cascades, river, streams, leaves, a horse trotting away, the starts and jumps of a carriage on the pavement, the white solemn breathing of the city at night, all the noises made by domestic and feline animals and all those man's mouth can make without talking or singing." He then invites the reader to enter the Futurist's subject of endless fascination, the industrialized urban space:

---

[15] Thorn, Benjamin. "Luigi Russolo" in Music of the Twentieth Century Avant-garde." in *Sitsky, Larry. Music of the Twentieth-Century Avant-Garde: A Biocritical Sourcebook*. Westport, Conn: Greenwood Press, 2002. Print, 45.

[16] Russolo, Luigi, Robert Filliou, and Francesco B. Pratella. *The Art of Noise: Futurist Manifesto, 1913*. New York: Something Else Press, 1967. Print, 5.

[17] Russolo, 6.

[18] Russolo, 7.

> Let's walk together through a great modern capital, with the ear more attentive than the eye, and we will vary the pleasures of our sensibilities by distinguishing among the gurglings 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.[19]

Just as the influx of visual stimulus associated with the early modern city acted as an influence on artists to incorporate the found object into the relatively "pure" sphere of the painting, so the aural influx of modernity provided an impulse for creating a musical space that absorbed and acknowledged the frenetic energy of the everyday into the comparatively more uniform acoustic space of the orchestra or acoustic ensemble. In addition, Russolo's encouragement of the listener to play an active role in seeking out music foreshadows John Cage's later focus on the listener.

Aside from laying a philosophical and theoretical groundwork for the incorporation of noises in musical space, Russolo also devoted many years of his life to creating instruments that could achieve the types of sounds he imagined. After writing "The Art of Noises," Russolo created the "intonarumori," or noise-instruments, in a workshop in Milan, with the assistance of Ugo Piatti. The intonarumori were acoustic noise generators, and each was designed to create a specific type of noise. The instruments were given onomatopœiac names, such as exploder, buzzer, crackler, whistler, crusher, croaker, and gurgler. On the outside each instrument looked the same: a wooden sound box with a metal speaker affixed to the side, a crank to produce the sound, and a level on top of the box to change pitch. The insides had wooden and metal wheels of varying shapes that then vibrated metal string or catgut, and the end of the string was attached to a drumhead to transmit vibrations to the speaker.[20]

---

[19] Russolo, 7.

How was a painter and intellectual able to assemble these early experiments in noise-making, given the more technical nature of his enterprise? Some have pointed to his assistant Ugo Piatti's skills, but Piatti was actually trained as a painter just as Russolo was. Luciano Chessa points to two likely influences on Russolo's engineering abilities. First, Russolo's father Domenico Russolo made and repaired watches and clocks for a living, as well as tuning organs and pianos. Secondly, Russolo was known to be thrilled with Leonardo da Vinci's experiments in building musical instruments and acoustics. Da Vinci was interested in the infinite division of the semitone, as well as the noises of war. Several da Vinci manuscripts were reproduced in publications, illustrating the mechanical principles behind da Vinci's experiments in instrument building, and Chessa argues that Russolo would have certainly been familiar with these.

In 1913 Russolo staged the first concert with these instruments in Modena's Teatro Storchi; subsequent concerts were held the following year in Milan, Genoa, and London, and the reception was far from friendly. At the Milan concert a riot ensued where the Futurists wound up fighting with members of the public. (Just two days later Russolo punched a music critic during an altercation over the noise-makers and was charged with assault.) Subsequent concerts of the intonarumori became less highly charged, and indeed Stravinsky later attended one of Russolo's concerts and was greatly impressed with the instruments. After World War I Russolo returned to work with the instruments and began combining the noise-instruments with acoustic instruments, continuing the history *Parade* established of counterpoising traditional orchestral instruments with noises.

---

[20] Saggini, Valerio. "Intonarumori" on www.thereminvox.com. online. Accessed September 30, 2013.

One could argue that the most significant aspect of the intonarumori, which provoked scorn, indifference, or passing enthusiasm at best, was simply the fact of their existence, the fact that a cultural force such as Russolo devoted a significant chunk of his artistic output to producing new kinds of sounds modeled on everyday noises. Russolo did not publish extensive writings about his philosophy of noises; outside of his manifesto "The Art of Noises*"* he published a few articles in *Lacerba* tackling the problem of notation for the intonarumori. In doing so he was perhaps the earliest western composer to struggle with the challenges of expanding the western notation system to include the sounds "between the staves," and he came up with a rudimentary form of notation using straight lines and slides on the staves instead of individual noteheads, a form of notation that would be taken up much later by other composers of electronic music.[21] The notation itself is preserved in the only remaining traces of a Russolo score, the first seven bars of *The Awakening of the City*. Robert Morgan compares the notation to that of later graphic works, calling it "quite different from the look of traditional music, somewhat resembling Krzysztof Penderecki's scores from the 1960s. Whatever this music may have sounded like, it looked like 'the music of the future.'"[22] In addition to providing insight on notation for noise instruments, Russolo's articles refer to his works for noise instruments alternatively as "rete di rumori" (network of noises) and "spirali di rumori" (spirals of noises). Both the spiral and the network suggest Futurist preoccupations with simultaneity and dynamism, features they worked assiduously to incorporate into their paintings.

---

[21] Chessa, Luciano. *Luigi Russolo, Futurist: Noise, Visual Arts, and the Occult*. Berkeley: University of California Press, 2012. Print. 151.

[22] Morgan, Robert. "A New Musical Reality: Futurism, Modernism, and 'The Art of Noises." in *A Special Issue on Marinetti and the Italian Futurists*. Baltimore, Md: Johns Hopkins University Press, 1994. Print. 141.

To what extent did Russolo influence the future use of everyday sound in music? Certainly, one can argue that his pieces for *intonarumori* had limited influence; only the first seven measures of *The Awakening of the City* exist in reproduction, and none of the original noise instruments have survived. Chiefly then, we see Russolo's contribution as an ideological one. In fostering an extreme set of aesthetic values and objectives, Russolo and the Futurists carved out new aesthetic space that future generations could then inhabit in less extreme ways. In other words, artistic revolutions create room within them for further modifications and developments, not all of which need to be as extreme as the initial movement. And indeed, the Futurist embrace of noise was merely one artistic revolution that occurred in the midst of what Robert Morgan identifies as a widespread "moment of crisis" in music and art at the turn of the 20th century, where multiple -isms responded to the breakdown of "traditional syntax" and offered varying aesthetic propositions, all of which take their own angle on the dissolution of established norms such as tonality in music and representation in visual art.[23] Benjamin Thorn argues that even when future composers were unaware of Russolo's innovations (for example, while John Cage was directly influenced by *The Art of Noise*, Pierre Schaeffer was not), that the Futurist embrace of noise fundamentally shifted the musical climate in a way that enabled composers to focus on noise, from Varèse to Cage to Schaeffer. Morgan also sites Russolo's influence as an unacknowledged yet "important and enduring line in twentieth-century music, " citing him as forerunner to "the 'mechanistically' inspired compositions of the 1920s—e.g., Arthur Honegger's *Pacific 231* and Alexandr Mosolov's *The Iron Foundry*, Edgard Varèse's "sound-liberated" compositions, especially the all percussion *Ionisation* (1931), John Cage's 1940s noise-dominated works for prepared piano, and texturally organized music of the 1960s by

---

[23] Morgan, 131, and 133.

Penderecki and György Ligeti."[24] In the end, Russolo's steady and serious attention to the aesthetic possibilities of noise not only widely increased the available timbral resources for a composer but also opened up the possibilities of new organizational structures. And importantly, the Futurists were the first to focus on the creation of new musical elements instead of the time-honored practice of composition as the art of arranging existing sounds—a departure far beyond the abandonment of tonal harmony and metric rhythms into even more uncharted territory, as music "relinquished the sole basis for limiting itself to a 'specifically musical' kind of material...music could be whatever one wanted it to be."[25]

In assessing Russolo's influence, Morgan hits on an interesting parallel between everyday sound and everyday objects, which adds interesting layering to the observations made in Chapter One concerning the links between everyday sound in *Parade* and everyday objects in early collage. Morgan states:

> Although one cannot claim that Russolo created the first "musical readymade" (that honor, I suppose, would belong to Cage), I believe that his "Art of Noises," which appeared in the same year as Duchamp's *Bicycle Wheel*, can be read as providing the theoretical basis. It seems to advocate something Russolo the composer was never able, or wished, to realize: a vision of music that, inseparable from nonmusic, comes to us "like life itself." Like Duchamp's readymade, Russolo's manifesto responds to a series of abandonments: monotonality in Wagner, the triad in Scriabin, tonal centricity in Schoenberg, metrical rhythm in Stravinsky. Having reached the zero degree of form, the art of music gives way to the art of noise.[26]

Morgan draws on a series of interesting parallels, comparing readymade art object to readymade sound object. He points to the astounding fact that Russolo's abandonment of painting and subsequent turn to experiments with everyday sounds coincides, to the year, with Duchamp's abandonment of painting and turn to readymades, in 1913. Duchamp's readymades, of course, are famous and early instances of collapsing the boundary between art and what it represents; by exhibiting, say a urinal, or a bicycle wheel, which were in every way indistinguishable from an everyday urinal or bicycle wheel, save from the artist's signature and inclusion in a gallery, Duchamp challenges one's conception of what constitutes art. Correspondingly, Russolo's noise experiments can be seen as a way to challenge the boundaries of what's considered musical. When one considers that the Picasso and Braque collages mentioned in Chapter One first date from 1912-1913, it seems plausible to read this time period as one in which artists and a few composers were truly examining what was then the hinterland of artistic experience, one in which absolutely anything could be considered worthy of aesthetic exploration, whether as a problematic, revolutionary, witty, or chaotic inclusion.

---

[24] Morgan, 140.
[25] Morgan, 141.
[26] Morgan, 143.

If one is to take up Morgan's idea of everyday sound and noise as a thread of 20th century music, one logical next step in establishing a network of pieces or writings formative in laying the groundwork for the eventual acceptance of everyday sound into musical space might be to examine the influence of urban sound and noise in early work of Varèse. Edgard Varèse is linked to the history of found sound because of his radical insistence on redefining music; his preference for referring to music as "organized sound" emphasizes sonic expansion and the inclusion of traditionally "non-musical" building blocks. While Varèse spent much of his career writing prior to the advent of the tape recorder, his compositional process, writings, and his insistent use of percussion instruments underscore a man presciently and energetically pushing the boundaries of musical space.

In his earliest work as a composer, Varèse demonstrated an interest in enriched timbral possibilities. When he was a young man still living in Paris, he was inspired by the works of Helmholtz, especially his experiments with sirens. Varèse went to the Marche aux Puces to pick up two sirens, and with these and a few children's whistles was able to complete his "first experiments" in "spatial music," describing how "the beautiful parabolas and hyperbolas of sound the sirens gave me and the haunting quality of the tones made me aware for the first time of the wealth of music outside the narrow limits imposed by keyboard instruments."[27] Varèse would then apply these ideas of enriched chromatic content to all of his mature works, including the use of sirens in both *Amériques* and *Ionisation*.

Varèse was a part of the Parisian avant-garde prior to moving to the United States; he was inspired by and preferred the company of visual artists, befriending Delaunay, Dufy, and Modigliani. Varèse arrived in the United States in 1916, where he became instrumental in forging and furthering the American experimental music scene. He began attending Walter Arensberg's famous salon, which was a hotbed of new ideas about the arts and an early meeting place for members of the Dada movement. Influenced by the Futurists, he befriended artists Marcel Duchamp and Francis Picabia, both of whom embraced the aggressive energy of the city in their art and incorporated everyday objects into their artworks. The American critic Paul Rosenfeld described their work as possessing a "feeling of the unity of life through the forms and expression of industrial civilization, its fierce lights, piercing noises, compact and synthetic textures; a feeling of its immense tension, dynamism, ferocity, and also its fabulous delicacy and precision."[28]

The compositional process for Varèse's first major work after moving to the United Sates, *Amériques*, bears testament to the influence of environmental and found sounds on his conception of music. Written between 1919 and 1922, its varied and lively orchestral textures echo the noise and traffic of the city. Varèse describes hearing the sounds of the city and the river from his apartment on the west side of Manhattan, saying, “I could hear all the river sounds—the lonely foghorns, the shrill peremptory whistles—the whole wonderful river symphony that moved me more than anything had before.”[29] *Amériques* uses sirens, castanets, a whip, sleigh bells, and a rattle, among a battery of other percussion instruments, to recreate honks, clatters, and wails, creating a fast-moving musical surface that is at once abstract and purposefully evocative of urban life. To cite everyday sound as profound influence in *Amériques* helps us understand how Varèse arrived at such pioneering musical textures in his compositions, even in an era of intense experimentation on the part of countless composers. His angular, jagged sound formations, dissolving and coalescing like a series of molecular reactions, came from a desire to let music behave more like sound itself, to exist as organic formations, to act more like real and observable sound environments. Thinking of environmental sounds as musical gave Varèse a template for challenging the norms of compositional space.

---

[27] quoted in Bernard, Jonathan W. *The Music of Edgard Varèse*. New Haven: Yale University Press, 1987. Print. 155.

[28] Ross, Alex. *The Rest Is Noise: Listening to the Twentieth Century*. New York: Farrar, Straus and Giroux, 2007. Print. 149.

The unusual role of noise in his compositions did not escape his contemporaries. While Varèse largely used traditional instruments in his works, he so effectively mimicked the dynamics of everyday sound events that shocked critics in term compared his music, unflatteringly, to every kind of noise they could think of. *Modern Music* mockingly declared that Varèse was quite prepared to “score for a bird-cage, and ash-can or a carpet sweeper, provided any of these can contribute to a sonorous whole.”[30] Ernest Newman of the New York Evening Post ranted in 1925 that *Intégrales*, having just received its premiere at Aeolian Hall conducted by Leopold Stokowski, was “a combination of early morning in the freight yards, feeding time at the zoo and a Sixth Avenue trolley rounding the curve, with an intoxicated woodpecker thrown in for good measure."[31] Sounds of the modern city, indeed. Woodpecker aside, Varèse had hit a nerve; his music embraced the noisiness and complexity of his surroundings, the clamor and upheaval of city life, the broader spectrum of "organized sound."

---

[29] quoted in Rich, Alan. *American Pioneers: Ives to Cage and Beyond*. London: Phaidon, 1995. Print, 91.

[30] Rich, 96.

Varèse spent several decades of his life largely unproductive in terms of compositional output, energetically concocting ideas on the possibility of sound and trying unsuccessfully to get funding for his experiments. It wasn't until 1953 that he received his first tape recorder, which allowed him to start fulfilling a lifetime worth of ambitions by freely juxtaposing a wide array of sounds.[32]

Listening to Varèse's works, it's easy to draw parallels to the aesthetic values that the Futurists embraced, but to what degree was Varèse influenced by the Futurist movement? Russolo was a close friend of the composer, and in 1929 Varèse introduced the Russolophone, one of the i*ntonarumori,* at a concert of his music. That same year Russolo also gave Varèse an inscribed copy of "The Art of Noises," and the inscription mentions how touched Russolo was by *Amériques*, drawing a fairly obvious line of musical kinship.

In addition, there are some fairly marked similarities between the Futurist's aesthetics and Varèse's works. Both embraced a search for new instruments; though Varèse focused more energy on expanding the capabilities of existing instruments rather than creating new ones as Russolo did. Both embraced the noisy energy of the modern urban center; their particular brand of noisiness seems more aligned with industrial noise, and not as much with what we would conventionally think of as nature noises. Varèse uses the imagery of the penetration and repulsion of sound masses to describe his music; the Futurist painter Boccioni describes the objects in his paintings as “innumerable combinations of attraction and innumerable shocks of aversion.”[33]

---

[31] Rich, 94.
[32] Rich, 104.

Whatever the overtures between Russolo and Varèse, and whatever the larger aesthetic comparisons we might make between the Futurists and Varèse, these connections are mitigated by Varèse’s frequent attempts to distance himself from Futurism, as well as his critiques of the movement. As early as 1916, he stated that though new instruments were desirable “Marinetti and his *bruiteurs*” had made a mistake in limiting themselves to reproducing sounds that had already been heard, or typical sounds, instead of creating new sounds, saying “Why, Italian Futurists, have you slavishly reproduced only what is commonplace and boring in the bustle of our daily lives?”[34] Varèse seemed critical of what he perceived as the Futurists’ lack of compositional rigor in their use of noise, stating that “the Futurists believed in reproducing sounds literally; I believe in the metamorphosis of sounds into music.” For him, the timbre of the sounds was part of the compositional process; he didn’t believe in the blunt inclusion of noise just for its own sake. While Varèse may have embraced everyday noises, he did so in a particularly abstract way. He used everyday sounds as a means of accessing a wider range of materials, and with methods that were particularly divorced from common practice nuts and bolts. He declared in a lecture given in 1936:

> When new instruments will allow me to write music as I conceive it… the movement of sound-masses, of shifting planes, will be clearly perceived. When these sound-masses collide the phenomena of penetration or repulsion will seem to occur. Certain transmutations taking place on certain planes will seem to be projected onto other planes, moving at different speeds and at different angles… In the moving masses you will be conscious of their transmutations when they pass over different layers, when they penetrate certain opacities, or are dilated in certain rarefactions.

---

[33] quoted in Stojanović-Novičić, Dragana. "Work of Edgard Varèse and ‘futurist Music’: Affinities (and Differences)." *New Sound*. (2009), 59.
[34] Bernard, 23.

Using language that abstracts principles of science and math to liberate him from conventional compositional ideas about structure and organization, Varèse speaks of methods like crystallization, of variables like speed, direction, and shape that are constantly changing, like matter itself. Here he obviously imagines his music at a cellular level, as a matter of complex and freely shifting shapes that are as wide-ranging as the endless flux of matter.

Varèse became particularly agitated with the numerous critics and commentators who dubbed his early American works as Futurist (and they did so even after the movement itself had ceased to exist). In addition to his aesthetic quibbles with the Futurists, he did not believe himself to be as iconoclastic as them, nor as interested in tearing down the past, though he admitted he liked their strain of anti-sentimentality. Even Henry Cowell claimed in a review as late as 1954 that Varèse was the only important composer to have been associated with the Futurists; Varèse wrote in a strident objection to the review, predominantly stating that he didn't wish to be associated with musical cliques.

Varèse's insistence that everyday noises be transformed through the art of composition may seem to distance him from our dialogue on the aesthetic inclusion of the everyday; while we might fruitfully launch comparisons between *Parade* and a Picasso collage, between a Duchamp readymade and Russolo's intonarumori, Varèse is not including everyday noise in his work in order to encourage a dialogue between the everyday and artistic representation. Instead, his work represents an evolution in the use of everyday sound in his stringent attempts to defamiliarize noise and turn it into abstract and non-referential material (with the exception of *Amériques*, which was admittedly referencing urban everyday sounds). In our history of sound "pioneers," Varèse points the way towards a major strand of academic electronic music from the 1950s onwards, which seeks to shape and sculpt noise that is non-referential.

Chapter III:
Theories of Found Noises: Schaeffer and Cage

“Sound material in itself has inexhaustible potential. This power makes you think of the atom and the reservoir of energy hidden in its particles, ready to burst out as soon as it is split.”

-Pierre Schaeffer

“Between the byzantine interplay of syntaxes and the return to forgotten or dried-up sources, the modern musician can, in Pierre Schaeffer’s words, try to find a breach in the wall of music that surrounds us like a fortress.”

-Serge Moreux, at the first concert of concrete noises

“A piece of string, a sunset: each acts.”

-John Cage, 1961

I. Schaeffer and the “Terrae Incognitae”

On March 18, 1950, at the *Ecole Normale de Musique*, Pierre Schaeffer presented the first concert of *musique concrète*. Only too well aware of the significance of the event, Schaeffer not only presented his audience with a concert replete with outlandish sonic content, but equally importantly he shifted the notion of musical performance itself by eliminating performers. The audience was faced with turntables and loudspeakers instead of seated musicians, with a range of extraordinary noises instead of the more limited and united timbres of an orchestra or ensemble. In his published diary of the time, the first section of *In Search of a Concrete Music*, Schaeffer relates queasy unease in the days and hours before the performance. Perplexed by the array of difficulties arising from the presentation of *musique concrète*, he worries over whether to adjust the levels of the soundscape in advance, or whether to do so during the performance, from the stage, in order to acknowledge the audience and give them a performative act to interpret. He mulls over the audience's possible responses: how will they react to equipment entering the "magic circle" of the stage, where they would normatively expect acoustic music?[35] He claims, "I couldn't get rid of some unease: insolence, usurpation. What harm was I doing to that respectable place in the first violins that my father had occupied for thirty years?"[36]

The ability to construct music out of manipulated noises and sounds, prefigured by the experiments and works chronicled in Chapters One and Two, suddenly becomes a viable, if vexed, reality via Schaeffer's foray into the brave new world of recorded sounds. The apprehensive spirit about the project of *musique concrète*, revealed in Schaeffer's commentary about his first public concert, is characteristic of his mentality in the early years of his endeavor. In his early efforts creating *musique concrète*, well in advance of the first concert, Schaeffer frequently admits that he is blindly groping towards a goal that might not be possible. The goal? To create music with sounds, using the then highly rudimentary technologies available to combine and shape sounds into musical composition. As he chronicles his early experiments, he frankly cites frequent and many failures. The failures occur predominantly because the technology allows for a dizzying array of sonic possibilities; shaping sounds electronically is "a musical undertaking bristling with difficulties and defended by the barbed wire of technique."[37] Schaeffer's approach to these failures can best be described as scientific rather than aesthetic; at one point he states proudly: "At least it is to our credit that we do not claim to produce a work of art straightaway, that our works are constructed in the name of techno-aesthetic experimentation only and not as a true "project."[38] After the first concert of *musique concrète*, Schaeffer holds the various reactions to the music, both positive and negative, at arm's length, stating, "To us it seemed premature to make value judgments about it. Pure experimentation is morally neutral."[39] In introducing music based on a wide range of recorded sounds, Schaeffer believes that his first duty is to explore, via experimentation, the many ways in which such compositions might develop, without the burden of purely aesthetic evaluations (which, presumably, might cut off the infant art form before it had a chance to develop.)

---

[35] Schaeffer, Pierre, Christine North, and John Dack. *In Search of a Concrete Music.* , 2012. Print, 61.

[36] Schaeffer, 62.

[37] Schaeffer, 47.

Of the difficulties themselves, Schaeffer evokes them brilliantly:

> All around me lay piles of records bearing fragments of this raw material, decomposed, compressed, and stretched, de-ossified, inverted, shattered, pulverized. I was like a child who has taken the growl out of his teddy bear, pulled out his dolly's eyes, and smashed his clockwork train. I had to admit that I had invented amazing techniques for destruction but that every attempt at synthesis fell to bits in my hands. Furthermore, at every stage of my activities, pitiless contradictions arose. Sound objects multiplied, but their proliferation brought no enrichment, at least not in the way that musicians mean: the musical idea, of shadow of an idea that persisted throughout these contortions, remained unchanged, and what a lot of misshapen forms, and concrete variations for the same idea!"[40]

Schaeffer is caught in a "no man's land" between art and technology, where the plurality of choices brought about by the ability to manipulate sound itself, rather than a musical instrument, can easily be seen as a curse rather than a blessing. Along with the ability to "destruct" and atomize sounds and then submit those pieces to further alterations comes the burden of assembling such disparate parts into some kind of aesthetic whole. Schaeffer spends several years, the earliest span of his experiments with recorded sounds, creating sound objects which he is then unable to reassemble into anything that (at least for him) resembles a satisfying musical composition. The fact that he does not give up is characteristic of his determined approach; he believes in the *possibilities* of the sounds long before he is able to follow through on any of his ideas.

---

[38] Schaeffer, 114.
[39] Schaeffer, 64.
[40] Schaeffer, 37.

Schaeffer took some comfort in the difficulties he faced by drawing analogies between the advent of abstraction in visual art and the advent of everyday sound in music. He cites the fraught transition to abstract art, noticing that as he worked on developing *musique concrète*, abstract art was already fifty years in the making, and yet artists were still working out the ramifications of the move to abstraction. The transition from representation to abstraction in visual art bore relevance for him because he wanted concrete music to carry the ability to "abstract" sounds by making new contexts for them. In this view, a recorded sound might be "representational" until subjected to manipulations by the composer, at which point it could be recontextualized by its placement in a composition. These comparisons allowed him to take faith in his position as a musical visionary, glimpsing vague outlines and possibilities of a future music looming on the horizon. In his words: "I do not know, and doubtless I will not know for some time yet, if these attics are inhabitable, whether they are a temporary prison cell or will be apartments of the future."[41]

In the beginning, Schaeffer's search for an expanded sonic palette led him to seek out various noise-makers, in an episode that closely mirrors Varèse seeking out whistles and noise makers at a Parisian flea market. Conceiving of a "Symphony of noises," Schaeffer went to the sound effects department of the French radio service and checked out doorbells, rattles, an alarm clock, whirligigs, and a variety of bells. After working with these sound makers for a short period of time, Schaeffer realizes the downside: these noise-making props are all too literal and "explicit" for his intended purposes.[42] From here Schaeffer next launches into a series of experiments with organ pipes, working meticulously to discover how to abstract the sounds. His first breakthrough, as recorded in his diary, is the day he learns to cut off the attacks of the organ sounds, using a potentiometer to make the decay of the sound more audible. He records these sounds onto a variety of disks, and then, with great difficulty, is able to layer and "play" them to create new music. In essence he builds an extremely primitive synthesizer, one too unwieldy to have any true compositional power, but one that he realizes points the way to the idea of a new instrument. Schaeffer's early experiments reveal that though he wants to bring a much larger array of sounds into his compositional arsenal, he does not want the sounds to refer explicitly to their original function.

---

[41] Schaeffer, 115.

Schaeffer next moves to a series of sonic experiments with recordings of trains, which will result in *Étude aux chemins de fer,* part of the *Five Studies of Noises* composed in 1948, and the earliest works of musique concrète.[43] Here he focuses on an essential problem of using everyday sounds in music without creating "drama," a piece with train sounds whose structure and gestures do not seem to point to a real-world scenario with trains. While Schaeffer's approach differs from the Futurists in his avowed desire to abstract the sonic material, Schaeffer does regard the train sounds themselves with an enthusiasm that could have been lifted straight out of a Futurist manifesto, recounting with obvious delight "the noise of the engine with its wheels spinning downhill, its rapid panting echoing back into the distance, the clash of buffers and their delicate ornamentation, the hammer blow."[44]

---

[42] Schaeffer, 4.

[43] Palombini, Carlos. "Machine Songs V: Pierre Schaeffer: from Research into Noises to Experimental Music." *Computer Music Journal*. 17.3 (1993): Print, 15.

Schaeffer's detailed description of working with train recordings also provides further insight into his motivation for composing with sounds, as he marvels at the intricate rhythms buried within the trains sounds, rhythms he comes to recognize and exploit as he manipulates the recordings. Initially, Schaeffer strives to resolve the train's rhythms to 6/8 or another common time signature. Then he realizes that the intricacies within the seeming monotony of a train sound, far from being a problem, are actually a source of compositional subtlety, a way to interact with the ever-present "grid" of common practice composition with unimagined freedom and flexibility. Schaeffer realizes that rhythmic complexity is already a preoccupation of much contemporary music of his time, but composers working with conventional instruments were forced to struggle with the perils of notation. Schaeffer's advantage, then, is the ability to compose with ever-changing rhythmic structures, which he, in his typical recourse to scientific analogy, calls "isotopes." Schaeffer rhapsodizes over his discovery: "What subtle musical pleasure a practiced ear could find learning to listen to, to play this new-style Czerny! You ...only need to be able to discern and savor, in the most mechanistic monotony, the interplay of a few atoms of freedom, the imperceptible improvisations of chance..."[45]

Focusing on train sounds and the manipulation of rhythmic subtleties gives Schaeffer a hint as to how to manipulate his recordings in such a way as to make the listener "forget it's a train."[46] He separates his new process into two steps. First, he distinguishes an element within the recording, choosing for texture or tone color in a way that allows one to hear the sound abstractly, for a sonic attribute instead of recognizable feature. Secondly, he then takes this element and repeats it. The repetition enables the sonic tidbit to lose "context" and become music. Thus Schaeffer's work train sounds gives him a transferable technique, a method for composing without becoming "trapped in the field of drama."[47]

---

[44] Schaeffer, 11.
[45] Schaeffer, 12.
[46] Schaeffer, 13.

As Schaeffer works on the *Five Studies of Noises,* he isolates two compositional problems. First, the aforementioned desire for defamilliarization. His rhythmic looping of train sounds will become just one of many techniques he develops to allow the sounds to come into their own, or "considered for themselves without the necessity of identifying them in relation to an instrument or a meaning."[48] Interestingly he mentions this in his diary in the same breath as mentioning having met John Cage a few weeks earlier. At this period Cage is known predominantly for his experiments with prepared piano and not for his ideas about ambient sound, and yet, retrospectively, one can hardly imagine a more Cage-ian imperative for sound than to let sounds be "considered for themselves."

Secondly, Schaeffer worries over the issue of whether or not to appropriate older musical forms, or musical practices considered mainstream in western music, into *musique concrète*. He sees this as a question of what the music should "borrow" or incorporate. Specifically, he wonders about using common practice concepts such as theme and development, as well as the merits of importing formal structures. In addition, common practice music relies on a score for its translation into sound, and so Schaeffer spends much time considering the degree to which everyday sounds that have been manipulated could take advantage of Western scoring devices. He makes a number of arduous attempts to produce scores for his early pieces. The lack of rhythmic regularity acts as a substantial impediment to scoring, especially before the many efforts at graphic and experimental scores in the latter half of the 20th century.

---

[47] Schaeffer, 13. Palombini, 15.

[48] Schaeffer, 53.

Schaeffer's next big discovery on his path towards the defamiliarization of everyday and found sounds is the concept of a "closed groove." Realizing that repeating certain "loops" brings a wholly new energy to the sound, he sought not only to defamiliarize the sound via the closed groove but also give it a wholly new and unassociated musical character. The closed groove "isolated a 'sound fragment' that has neither beginning nor end, a sliver of sound isolated from any temporal context, a clean-edged time crystal."[49] Schaeffer came up with a variety of affectionate and poetic images for looping sounds, calling them "sound creatures" and declaring: "A statistician could have enjoyed himself counting how many of these children of chance had received some precious gift: rhythm, intonation, expression, surprise."[50] Looping a section of an everyday sound, especially with the attack removed, allows one to focus on sonic attributes of the sound in an abstract way.

Schaeffer then refines this concept of defamiliarization of sound as a matter of time. He comes to the conclusion that 1/10th of a second is the maximum amount of a sound that can be played that prohibits the sound from being recognizable. Arguing that the amount of time that we hear a sound fundamentally alters the sound itself, he declares: "An atom cut into pieces is no longer the same atom. It becomes another material, gives off unexpected energy. Everything, precisely, depends on the level of analysis."[51] He uses calculus as an analogy, the tools of which enable us to visualize a function in multiple ways. Similarly, it's the order of magnitude with which we consider a sound object that lends a sound particular aesthetic qualities.

---

[49] Schaeffer, 42.
[50] Schaeffer, 33.
[51] Schaeffer, 41-42.

And what were some early reactions to Schaeffer's experiments? There was, predictably, a smattering of both positive and highly negative responses. The negative responses were just what one would assume: criticisms of a music that was alien, grating, ugly, and, of course, "un-musical." However many realized that Schaeffer was charting important new territory. One early sympathizer whom Schaeffer quotes extensively is Serge Moreaux, who gave introductory speeches at some of the first concerts of *musique concrète*: "Listening to Pierre Schaeffer's musical scores has nothing to do with musical civility, pure and honest. It is somewhat like discovering a sound continent as virgin as Robinson Crusoe's island. However arduous, these sorts of expeditions afford some pleasure...of the unforeseen at the very least." Moreaux encapsulates the abiding tone among the positive reviews that Schaeffer received: praise for the exploration of a brave new world of music, if not for the specific aesthetic results. The metaphor of Schaeffer as an explorer is an apt one; the sounds he brings into musical space represent an undeveloped wilderness when compared to the well trodden paths of pitch-based musical practices, a new land of possibility for future composers, one that brings them to a much larger conception of musical content as all the vibrations that "preside in the scattered and glittering physical universe."[52]

Schaeffer himself regarded the reactions to his experiments with a bit of bemused distance. He had his own very precise sense of how his experiments with recorded sounds related to the history of music. Although his approach was scientific, he was well-versed in Western music history and took a great deal of interest in how *musique concrète* might be viewed as part of the developments in 20th-century music. He states the radical nature of his own work strongly: "The revolutions called Beethoven, Wagner, Debussy, Stravinsky do not mark a real renewal: they explore a planet whither there were still terrae incognitae."[53] With respect to what at the time were the chief two schools of 20th-century music, the Stravinsky and Schoenberg schools, Schaeffer saw them as less extreme modes of new music. For him, polytonality and atonality were gentle revolutions; only *musique concrète* made a complete revolution as to the movement of music into truly new territory. Further, he sees some contradictions in Schoenberg's approach, believing that the only truly atonal music is music that does not "trigger any association of ideas based on tonality."[54] Clearly, he is referencing *musique concrète*, which is atonal in the sense that it does not operate on the spectrum of organizing twelve tones, whether to embrace or avoid tonal construction. For Schaeffer, Schoenberg is ultimately someone who allowed Western music to "progress," but in a much less radical way than is commonly attributed. He states: "what the critic of Schoenberg can see very clearly is the flaw in the system, its arbitrary limitations, and hence its internal contradictions—and also the beginnings of a renewal and the means of breaking the deadlock, precisely through the rethinking of what is called sound physics."[55]

---

[52] Schaeffer, 61.

Looking at Schaeffer's pioneering efforts, we can see that his contribution of bringing everyday sound into music is the most radical that we've examined so far. In doing so, Schaeffer was not trying to import the meanings of everyday sounds into music, but rather borrow their abstract sound qualities as a way of constructing music from a much wider playing field of available materials. Having done so, though, the door is opened for future composers to use everyday and found sounds in a variety of ways; either by processing and obscuring sounds (as the acousmatic composers will), or by retaining the meanings and recognizable attributes of the everyday sounds and using that as part of musical space. Either way, the floodgates have opened, and as technologies improve from the invention of the tape recorder onwards, the ease of sonic manipulation will enable the colonization of Schaeffer's "terrae incognitae."

---

[53] Schaeffer, 124.
[54] Schaeffer, 121.
[55] Schaeffer, 123.

II. If one hears the sounds of ocean waves in a cave, is it music?

It is interesting that John Cage and Pierre Schaeffer knew of one another throughout their careers and yet made relatively little commentary on one another. At times, sections of Cage's writings sound like they could be Schaeffer, and vice versa. Where the two men are united is in their engagement with what I'd like to call the ontology of music, with an understanding of what fundamentally constitutes a musical sound. And for both men, this turns out to be largely a question of perception.

An anecdote related by Schaeffer in the first journal of *In Search of a Concrete Music* will serve as a suitable segue to a consideration of John Cage's contribution to the inclusion of found sounds in 20th-century music. Schaeffer relates how a Greek philosopher (both Greek in nationality *and* a specialist in ancient Greek thinkers) asked him if concrete music should "rightly" be called music. The philosopher goes on to specify "if...I listen to the sounds of waves while sitting deep within a cave, is that music?"[56] Schaeffer's response is, as we would guess, yes, but much more interesting is his defense of his answer:

> So, for there to be music, all that is needed is that a relationship be establish between subject and object, and the initial act in music is willed hearing, i.e.,

---

[56] Schaeffer, 64.

> selecting from the chaotic hubbub of sounds a sound fragment that one has decided to consider. Here the memory acts as a closed groove: it retains, it records, it repeats....The sound of waves is not chaos: there is rhythm and pulsation, and each wave is a variation on an immutable theme...If the noise of waves has a chance of being musical, it is because, like music, like every message, it is affected by *redundancy*... [57]

Here Schaeffer proposes a definition of music that pushes it into the wilderness of noise. His concept of "willed hearing," (if it strikes the listener as music, it *is* music), means that even sounds that have not been formally organized by a composer can still be music if the listener is aware of their patterning, presumably instead of disregarding the sounds as noise. Of course this definition leads beautifully into a discussion of Cage's seminal 4'33", which in its use of so-called "silence" as bookends for the true diversity and interest of our sonic environments, asks of the listener nothing so much as to perceive every sound as a fruitful possibility for musical space. In this light, 4'33" is yet another answer to the Greek philosopher.

Schaeffer goes further with his definition, though, by suggesting that the reason why one might find musicality in everyday sounds is grounded in a physical reality of our perception. Because we look (and listen) for patterns, we will tend to hear repeating elements within a noisy sound or soundscape, and we will perceive these "redundancies" as connections that add coherence to the pieces to which we listen. Here he has gone beyond his anxiety to impose order and compositional integrity on the sounds with which he works; while not eschewing the skill and necessity of the composer, he suggests that in the end sounds can be musical in and of themselves if we bring the intention of listening to them as music. For a composer, the playing field of acceptable sonic materials cannot get any wider than this.

---

[57] Schaeffer, 66.

III. John Cage

The premiere of John Cage's 4'33" occurred on August 29, 1952, at Maverick Concert Hall in the Catskill Mountains, approximately three years after Schaeffer penned the defense of sound as music above. Kyle Gann, in his comprehensive examination of 4'33" and the milieu in which it was composed, cuts to the chase in summing up the importance of this premiere, stating that "its effect was to drive home the point that the difference between "art" and "non-art" is merely one of perception, and that we can control how we organize our perceptions."[58] In other words, Cage, in forcing his audience to sit in "silence" for a prescribed length of time, has also forced the "willed listening" that Schaeffer suggests is necessary to regard ocean waves as musical. Interestingly, while the crowd of *Parade* collaborators, Varèse, the Futurists, and even Schaeffer himself all focused predominantly on urban everyday sounds in their pieces (typewriters, barges, trains, etc), Cage, in having the premiere in a country setting, opens the door for focusing on natural sound, providing a precursor for sound artists in the late 20th century who will regard the preservation of natural ambient sounds as a crucial step towards preserving rapidly disappearing wilderness. Gann makes the argument that 4'33", given its outdoor premiere in Woodstock, was an explicit invitation to listen to the American natural sound environment, stating "it would be Cage who made the most radical turn toward nature of any composer: nature as associated with chance and environmental sounds."[59]

Of course, defining music as a matter of perception leaves the door equally open to reject everyday sounds as possible musical material. In a famous encounter between John Cage and the abstract expressionist Willem de Kooning, de Kooning framed the bread crumbs remaining on his table with his fingers and declared that just because he had framed the crumbs with his fingers didn't mean that they constituted art. And Cage responded promptly that in his view the crumbs were in fact art.[60]

---

[58] Gann, Kyle. *No Such Thing As Silence: John Cage's 4'33"*. New Haven [Conn.: Yale University Press, 2010. Print, 25.
[59] Gann, 30.

Whether one sides with de Kooning or Cage, it's possible to regard 4'33" as seminal merely in the way it opens the *possibility* of everyday sound to be patterned as worthy of listening. Gann ultimately finds this to be the greatest claim we can make about the piece:

> If you can turn toward the whir of the wind in the oak trees or the pulse of the ceiling fan the same attention you were about to turn to the pianist, you may have a few moments of realizing that the division you habitually maintain between art and life, between beautiful things and commonplace ones, is artificial, and that making it separates you off from life and deadens you to the magic around you. Many people scoff at 4'33". But I once performed it for a class of new freshmen, and a young woman exclaimed afterwards with surprised delight, "I never realized there was so much to listen to!" Perhaps that's exactly the kind of musical satori Cage hoped to bring about.[61]

As discussed in Chapter One, using everyday sounds or materials in artworks narrows or closes the gap between art and life. And Gann suggests that one benefit of narrowing this gap with a work such as 4'33" is to sharpen our perception of the "magic" that's already there. In this view, it's not important whether we regard the sounds encapsulated in a performance of 4'33" as art or life, as artistic bread crumbs, or just bread crumbs. The fact that we may notice what previously would have been *beneath* notice opens a doorway to a more dimensional, fluid, and attentive way of existence, an awakening to the possibilities around us.

In pinpointing 4'33" as an ultimate philosophical acceptance of everyday sounds, it's important to consider the path Cage took that allowed him to reach such a radical position. As could be expected, many of Cage's early musical and intellectual preoccupations laid the foundations for his wholesale embrace of the everyday sound environment and quotidian noises as acceptable musical material. Focusing on percussion in his early years of composition, Cage was already schooled in the art and practice of making music with noises instead of traditional musical instruments from the beginning of his musical training. He graduated to his widely-praised experiments with prepared piano, his alterations to the piano strings (with everyday objects!) turning the piano into a multi-faceted instrument producing sounds ranging widely along the spectrum of noise to pitch. Schaeffer acknowledged Cage's prepared piano works, stating: "John Cage has put screws in his piano. If I say that he did this almost without thinking, it isn't a criticism. He seems to me to be a clever Columbus who, fascinated by the first island, has built himself an exquisite villa on it."[62] One notes a grudging tone in Schaeffer's assessment; of course he's speaking prior to Cage's future experiments with sound, but he can recognize that Cage's sonic explorations are not so far out of keeping with his own. Finally, Cage's study of Zen Buddhism and meditation gave him what we might think of as a distinctly non-Western appreciation for the empty, for the act of emptying out and perceiving whatever remains. Sitting through 4'33" can be an act of meditation, for it invites us to abandon thoughts, if we can, and just allow sounds to be, exactly as they are.

---

[60] Kostelanetz, Richard. *Conversing with Cage*. New York: Limelight Editions, 1988. Print, 211-212.
[61] Gann, 100.

In terms of Cage's specific influences, perhaps none is so central to this study than that of the Futurist Luigi Russolo, whose ideas were considered very powerful by the young Cage. Russolo's *The Art of Noises* of 1916 was one of Cage's favorite books; at Wesleyan in 1960 he listed it as one of the ten books that most influenced him.[63] And indeed, a quick look at Cage's *Credo* of 1937 will immediately bring to mind swathes of *The Art of Noises*, as he opens in manifesto-like fashion with a rapturous invocation of the importance of noise.[64] Correspondingly, in places Russolo's text sounds like it could be speaking directly to Cage:

---

[62] Schaeffer, 169.
[63] Gann, 63.

> A general observation that is useful in studying noises in the city is this: in places where continuous noises are produced (much-used streets, factories, etc.) there is always a low, continuous noise, independent to a certain degree of the various rhythmic noises that are present. The noise is a continuous low sound that forms a pedal to all the other noises... The street is an infinite mine of noises...[65]

In detailing the "low, continuous noises," which are the casual, very marginal ambient noises that one might hear in a performance of 4'33", Russolo prefigures the attentiveness to sound environment that Cage will champion. More generally, Russolo's love and attention to noises, as well as his prominent elevation of noise as not only acceptable aesthetic material but purportedly the best aesthetic material, were clarion calls that Cage could not ignore, though we might consider Cage's mentality considerably less strident than that of the young Russolo.

Just as Chapters One and Two examined parallel developments in the visual arts and the introduction of everyday sounds, an examination of Cage's motivation for embracing everyday sounds must take into account the considerable influence several visual artists had on Cage's thinking. Predominant among these artists is Marcel Duchamp, whose readymades, such as Fountain of 1917, were discussed in Chapter Two. Gann draws a correlation between readymades and 4'33", stating that "in each case an artist presents before the public materials (ceramic, environmental sounds) which he did not create himself, but which become subjects of aesthetic perception merely through the act of presentation in a traditionally artistic setting."[66] Beyond the obvious kinship between a found sound and a found object, there is a further relationship that Cage explored in his commentary on Duchamp:

---

[64] Cage, John, and Kyle Gann. "Credo" in *Silence: Lectures and Writings*. Middletown, Conn: Wesleyan University Press, 2011. Print, 3.
[65] Russolo, quoted in Gann, 64.
[66] Gann, 66.

> He spoke constantly against the retinal aspects of art...whereas I have insisted upon the physicality of sound and the activity of listening...You could say I was saying the opposite of what he was saying, yet I felt so much in accord with everything he was doing that I developed the notion that the reverse is true of music as is true of the visual arts.[67]

Beneath the surface similarity of music made with everyday sounds and artwork made with everyday objects, Cage senses a tension in the way we perceive these separate aesthetic experiences. Morton Feldman summed this tension up as: "Duchamp freed the mind from the eye, while Cage freed one's ears from the mind."[68] And Cage restates the paradox repeatedly in his own writings, with such statements as: "Art's obscured the difference between art and life. Now let life obscure the difference between life and art."[69] One might find these statements dissolve to tautology; nevertheless it points the way towards understanding Cage's preoccupation with sound as part of a larger aesthetic movement towards the blurry borderland between art and that which it represents.

Cage found yet another kindred spirit in the artist Robert Rauschenberg, a young iconoclast who embraced non-traditional materials in his artwork. Cage enthusiastically befriended the younger man and championed his paintings, sensing an obvious kinship between his own musical sensibilities and the aesthetic sensibilities of Rauschenberg: "Almost immediately I had the feeling that it was hardly necessary for us to talk, we had so many points in common. To each of the works he showed me, I responded on the spot. No communication between us—we were born accomplices!"[70] Rauschenberg showed his appreciation for the mundane or overlooked aspects of visual culture in a customarily tongue-in-cheek statement, declaring “I feel very sorry for people who think things like soup cans or mirrors or coke bottles are ugly, because they’re surrounded by things like that all day, and it must make them miserable.”[71] An artist for whom everyday consumer objects were beautiful, and a composer for whom the simplest and most overlooked of sounds was worthwhile: it’s little wonder the two embraced one another so wholeheartedly.

---

[67] Masheck, Joseph. *Marcel Duchamp in Perspective*. Englewood Cliffs, N.J: Prentice-Hall, 1974. Print, 159.
[68] Gann, 66.
[69] Cage, 19.
[70] Gann, 81.

Gann makes the case that the best correlation between Cage and Rauschenberg’s work lies in the comparisons that can be drawn between 4’33” and the White Paintings. Cage encountered Rauschenberg’s White Paintings in 1951. These gleaming paintings with all-white surfaces were created at Black Mountain in the summer of 1951, though Cage may have first seen them at an exhibition in New York City. The White paintings shocked the Black Mountain community, and the scandal spread to New York even before they were exhibited. There is an obvious connection between a blank canvas and a silent piece. In his essay on Rauschenberg, Cage described the White Paintings as “airports for the lights, shadows, and particles.”[72] In the same way, 4’33” might be considered an airport for hums, drones, and incidental noise, or whatever sonic equivalents you might draw for “lights, shadows, and particles,” as the baseline ambience of our perceptions. Far more than just artistically compatible, and beyond the standalone aesthetic similarities between the White Paintings and 4’33”, Cage went so far as to claim that what pushed him into writing 4’33” were the White Paintings. He relates: “When I saw those, I said, ‘Oh yes, I must; otherwise I’m lagging, otherwise music is lagging.”[73] The idea that music’s developments might (or should) parallel those in the visual arts echoes a theme throughout the history of everyday noises in Western music.

---

[71] Gann, 81.
[72] Joseph, Branden W, and Robert Rauschenberg. *Random Order: Robert Rauschenberg and the Neo-Avant-Garde*. Cambridge, Mass: MIT Press, 2003. Print, 33.
[73] Kostelanetz, 71.

Having overviewed both Cage's and Schaeffer's conceptions of composition with sounds, it's important to emphasize a fundamental polarity in their respective approaches. While Schaeffer foreshadowed Cage's ideas in his journals by encouraging a wide-definition of musical sound based on perception and framing, he ultimately did not favor identifiable sounds as a composer. The vast majority of his efforts revolved around developing techniques to defamiliarize recorded sounds. Cage, on the other hand, thought that un-altered, recognizable ambient sounds were interesting tools for compositional space. However, both Cage and Schaeffer eschewed an overtly dramatic role for sounds, whether they were recognizable or not. In a video interview given near the end of his life, Cage remarks that he doesn't expect a sound to "make love" (that is, woo the listener with expressive intent), but rather that he likes the sound just for being exactly as it is. One can argue that it was with similar intention that Schaeffer manipulated his sounds into alien creatures—precisely so they could be taken on their own terms and not given expressive content based on a recognized identity. In other words, Cage thought of sounds as abstract even when they were recognizable, and Schaeffer made them abstract by making them unrecognizable.

So how important is Cage's 4'33" to the future creation of music that embraces everyday sound? One could certainly argue that music with everyday sounds would have occurred without 4'33". Liberated by the invention of electronic tape in 1947, composers would have already been able to follow Schaeffer's lead in manipulating any possible sound material into a musical composition, with or without traditional instruments. Technology and ideology are separate, though, and certainly Cage's ideas about what constituted music had far-reaching impact on generations of future composers. One could say that inspired by the spirit of Cage, and enabled by technological advances, composers in the latter half of the 20th-century had a rich inheritance of the possibilities of everyday sounds. Both Cage and Schaeffer's legacies would splinter into varying musical idioms. Acousmatic music would base its sound on the idea of appreciating sound for its inherent qualities, separating the source of the sound from the sound itself, distancing itself from the delight that Russolo took in identifiable noises. On the opposite track are the soundscape composers, who don't seek to disguise their source materials. The leading practitioner is probably R. Murray Schafer, called the father of acoustic ecology and founder of the World Soundscape Project. There are composers who bridge the gap. And finally there are popular musicians and bands that use everyday sounds as "roughage" in their tracks, diversifying sonic content and references with sampled found sound.

Having completed this partial history of the important pioneers of the use of everyday sounds in music, one might ask if we can give more weight to any specific pioneer in contributing to the latter-day explosion of compositions that freely use sounds. Kyle Gann makes the following assessment:

> While it may be tempting to see all of this concern for listening to or recording ambient environments as having been triggered by 4'33", it is probably more accurate to say that the desire to incorporate industrial and environmental sounds that first surface in the writings and experiments of the Italian Futurists was fed and augmented by the development of recording technology and musique concrete--and that 4'33" served as a rallying cry, a manifesto, a locus classicus that justified and inspired further experimentation in this direction. [74]

I would loosen this analysis further, and submit that the subsequent presence of collage, readymades, *Parade*, the Futurists, Cage, Schaeffer, and Varèse, were all energetic contributions that provided a sharp uptake in available sounds and resources for composers, part and parcel of the dizzying freedoms granted to composers in the 20th century. Although the musical content of the pieces surveyed in Chapters One to Three is highly disparate in nature, and although any one of these works in isolation might not merit a great deal of interest from the standpoint of its aesthetic impact alone, taken collectively the pieces suggest the zeitgeist that liberated sound for the composer of today.

---

[74] Gann, 134.

Chapter IV: Compositional Procedures: Found Sounds in Four Case Studies

I. Introduction

Pierre Schaeffer believed that inclusion of noises and everyday sounds in compositional space allows us to reconsider the dynamism of sound itself:

> Imagine a perfect chord, made up of three notes, each one, apart from a relatively pure basic sound, having weird forms and colors: one of these sounds is a pulsation, one a series of fluctuating attacks, the third an "aeolian" that seems not to come from the movement of any sound body. Moreover, the matter of these notes changes. Not only do they differ, but each of them develops. Finally, they scatter into space, tracing out trajectories there. In this example, in addition to the perfect chord these notes sustain, they cause sound forms and sound colors to appear and develop in time and space. Concrete music is nothing less than the bringing to consciousness of this phenomenon, until now implicit, and which no instrument had yet allowed us to grasp.[75]

Schaeffer points to what he finds the true liberation of sound: the ability to sculpt "sound forms" and "sound colors" within and without the architecture of traditional pitch structures. He suggests the deconstruction of the triad, where each note takes on a complex life of its own, a singular path or "trajectory." Schaeffer was a visionary to imagine such nuanced control at a time when technologies were still limited; he saw a philosophical basis for music using sounds that extended beyond his capabilities for compositional control. And indeed the dizzying possibilities that overwhelmed Schaeffer in his early experiments have not abated; if anything, they've increased due to enhanced processing abilities, not to mention easy access to recording and editing tools.

---

[75] Schaeffer, 183.

In this light it is important to consider contemporary and recent works of music using recorded sounds in order to trace the inheritance that composers have received from the works and ideas examined so far. These newer works, created since the advent of rapid technological advances, reflect the ways in which the earliest ideas of how music could incorporate ambient and everyday sound have altered and evolved.

In looking at pieces by Steve Reich, Ingram Marshall, DJ Spooky, and the band the Books as four "case studies," I wish to show new possibilities of texture and figuration that arise from the incorporation of found sounds with instrumental music. In selecting these four pieces as case studies, I make no attempt to be inclusive, or to hold up a specific aesthetic or stylistic strand of contemporary music. Rather, I have chosen four disparate pieces to use as a basis for showing basic modes of expansion and contrast in relation to the early works described in Chapters One through Three. When isolating these four pieces, I first considered the juxtaposition versus the integration of the found sounds with the instrumental parts—one aesthetic spectrum that has widened considerably in more recent compositions. Secondly, I looked at the recognizability of the found sounds versus the degree to which they have been defamiliarized (or abstracted). These two aesthetic spectra, when combined, represent a diverse web of possibilities for the composer. To use an analogy appropriate to the field of electronic music, each of the spectra could be visualized as a fader on a mixer, each automated and adjusting in real time to demonstrate compositional engagement with degrees of engagement and abstraction as the piece unfolds in time. The following four case studies point to analytical moments within this matrix of aesthetic possibilities, attempting to pinpoint the piece's overall balance within these two spectra. Along the way, it's possible to see how compositional techniques which once might have seemed jarring or intractable have now evolved to a high level of pitch or rhythmic integration with instrumental parts, carving out yet more developed and aesthetically sophisticated territory.

II. Ingram Marshall's *Fog Tropes*

The post-minimalist composer Ingram Marshall bases his compositional practice on electroacoustic music, with a number of pieces incorporating found or environmental sounds. A former student of Morton Subotnick and Vladimir Ussachevsky, Ingram Marshall had his preliminary training in the 1960s and was steeped in early electronic music practices; indeed the familiar manipulations central to early tape music were and remain the core of his practice, even though processing abilities have become much more varied and powerful since his training. When I visited Ingram Marshall at Yale in 2006 to create custom software to facilitate performance of his piece *Hidden Voices*, for soprano and delay, Marshall acknowledged that his practice was rooted in analog processing. He's most interested in the aesthetic force of basic manipulations, effects that go back to Schaeffer's early work with sound recordings. Many of his most performed works use varying delay systems.

Marshall's *Fog Tropes II* (1994) for string quartet and tape is based on a careful blending of instrumental and found sounds. The electronic sounds were originally recorded in 1980 when Marshall was living in San Francisco. He used a low-tech recorder to create ambient recordings of fog horns along the waterfront of San Francisco Bay; in the process of capturing the fog horns he also caught snippets of birds, wind, and buoys. In addition he added vocal keening sounds and recorded pitches from the Balinese gambuh, a bamboo flute that Marshall has played since his musical studies in Indonesia. The first incarnation of the piece was written in 1981 at the request of John Adams, and was scored for brass sextet and tape. In 1994 the Kronos Quartet commissioned and recorded the more popular version, for string quartet and tape, which uses the same tape part as the original but shifts the live instrumental music considerably. The combination of the slow, atmospheric string colorations, reminiscent of Sibelius, and processed versions of the San Francisco Bay environment on a foggy day create a moody, haunting texture.

Fog Tropes II is a ten minute long piece which employs fairly static pitch material based on A phrygian; the effect of the frequent pedal tones and austere, repetitive motives is somewhat akin to Arvo Pärt's tintinnabulation technique, where pedal bell tones ring through predominantly stepwise and modal melodies. Marshall's use of delay on the instrumental parts, however, lends the piece a more intense, less austere quality. If Pärt likes to compare his textures to ringing bells, with similar pitch-material Marshall has achieved more of a swirling eddy, or perhaps the fog suggested by the piece's title.

Using such static pitch materials, Marshall does not achieve a sense of motion and structure through teleological pitch strategies. Rather, the interplay of found sounds and pitched material provides the listener with a sense of shape and musical narrative. The first four minutes of *Fog Tropes II* contain a slow build of the generative sounds of the piece. The acoustic part of the texture, a string quartet, plays a series of very simple motives, predominantly stepwise, chant-like melodies in A-phrygian, which are then subjected to delay and reverberation to build up dense, swirling configurations of predominantly consonant material. Because the strings' melodic material is scalar, climbing, and overlapping, the instrumentals have a sense of spiraling action, and because the strings "spiral" at varying rates, getting faster, a sense of suspense is propagated through the piece's opening four minutes as the texture continually enriches. Because of the section's structure of accumulation, the found sounds function here predominantly as opening ambience; they are heard most audibly at the very beginning, as the fog horns present a solid bass presence in the texture before being covered in the dense later stages of the section.

The first big sectional change occurs at 4'45", where agitated violin tremolos and dissonant first violin keening lead to the lowest and most emphatic fog horn pronouncement in the piece. This gesture serves as a dramatic passageway to the second section. Spanning from 4'45" to 7'36," the second section is characterized by a thinner, more contemplative texture. Whereas the first section builds through delay and accumulation of string motives, the second section gives the sounds in the electronics a more prominent role, with low-end pulses and muffled birds audible as the strings play introspective, dirge-like melodies.

At 7'36" the music starts to move again for a final section, with queasy strings, a high bell pulse that pedals in and out-of-sync with the strings, and keening voices in the electronics. The tremolo gestures used to demarcate the transition from section one to two return and are now given a prominent role in marking out a gentle acceleration in the third section to an ethereal close.

The prominence of the found sounds shifts in each of three sections, but there are several key functions to the sounds that remain constant throughout the piece. From the onset, Marshall uses the sounds in the electronics to expand the register of the string quartet. The strings generally occupying the middle frequencies, while the found sounds provide a mysterious, grounding bass and very high, delicate textural details, with fog horns resonating through the bass layers on the one hand and a variety of vocal cries, flittering bird noises, and flute pulses clearly demarcating the highest register on the other. Marshall also adds extremely low, almost inaudible frequencies to the tape mix, a muttering low-end noise that intensifies the gravel-like tones of the bass. The registers, though acting as separate regions, are not entirely striated, but instead the found sounds of fog horns and birds act as loose boundaries that the string instruments swirl in and out of at various points in the texture. While the sounds can be heard more clearly in the sparer second and third sections, Marshall is always careful to moderate the levels of the sounds so that they seem to emerge *from* the acoustic part; as extremes of register on either side of the string quartet the sounds are not exaggerated, but rather handled very carefully to sound like an organic extension of the acoustic registers.

In addition to expanding and intensifying the available register for the piece, the found sounds simultaneously provide timbral expansion to the ensemble. At the beginning of the piece, the fog horns are pitch shifted to create pedal tones on A and later E, and time shifted so as to alter slightly the length of their attack and decay. With reverb added, the fog horns are treated to sound almost like a processed bass, a distorted extension of the string family. On the high end, Marshall adds keening voices about halfway through the piece in the tape part. The introduction of these recorded sounds is facilitated by a string motive which foreshadows the entrance of the processed vocals. Starting two minutes into the piece a keening string sound of a downward semitone, a central motive of the work, enters and spreads through various registers, acting as punctuation for the churning compound of string voices built up via delay. Part of what gives this very simple musical marker emphasis in the texture is that it descends from C to B-natural, with the B-natural acting as a stark dissonance in the A-Phrygian texture. These dissonant sighs, partnered with increasingly aggressive tremolos, create a pathway where, as the delay sounds gradually thin out and fade away, high, fluttering voices enter in the tape. Because of this sonic preparation in the string quartet, the taped vocal part sounds like an obscure permutation of the string part itself.

Overall, the found sounds in *Fog Tropes II,* which greatly expand upon and extend the sound world of the string quartet, both in terms of register and timbre, function in a similar way to extended technique, which serves to heighten and expand the timbral and expressive possibilities of a given instrument. The fog horns, birds, and keening vocals all enliven the timbre of the string quartet and provide an alteration of sonic content that gives *Fog Tropes* its peculiar expressive force, its mysterious personality. In an interview Ingram Marshall stated that, "Many people are reminded of the San Francisco Bay when they hear this music but for me it is a piece about memory and the feeling of being lost."[76] For the composer, then, using recorded sounds from a specific environment enables a sound world that suggests memories, with the site-specific sounds acting in a similar manner to the narrative or program for a piece of programmatic music. His statement also makes it clear that the overall musical texture, with its complex layers of circulating strings and murmuring noises, is intended to mimic the feeling of being lost within a foggy environment. In this one work, we can see the various uses of found sounds in compositional space: extra-musical narrative, ambience, and sonic expansion, all functioning simultaneously.

Having started this dissertation with an examination of *Parade*, in which found sounds were collaged against acoustic music to form a highly differentiated texture, *Fog Tropes II* might be considered a very strong motion towards integration, where found sounds are still recognizable as such but have a high degree of compatibility and blend with the instrumental parts. One could argue that integration is a trickier, more sophisticated task, but then again as a composer working almost eighty years after *Parade's* premiere, Marshall has the benefit of a considerable technological progress in handling his chosen sounds. In any event, *Fog Tropes II* illustrates noise and instrument integrated into complex textural compounds, rather than using the ambient sounds as backdrop against which the more highly structured pitch materials plays.

---

[76] Marshall, Ingram. Quoted on http://www.laphil.com/philpedia/music/fog-tropes-brass-version-ingram-marshall. Online. Accessed October 30, 2013.

III. Steve Reich's *Different Trains*

To support an argument that there has been evolution in the use of found sounds in musical space, we need look no further than Steve Reich's *Different Trains* (1988). If *Fog Tropes II* illustrated a progression from the differentiated noises of *Parade* towards the integration of sound and instruments, *Different Trains* echoes this development and yet provides another duality for our examination. Whereas *Parade* started with instrumental music on which it "collaged" or superimposed sound, *Different Trains* illustrates the exact opposite: instrumental music composed *for* found sounds, with pitch, rhythmic, and textural details deriving solely from the acoustical attributes of the recorded everyday sounds. Rather than the found sounds being considered as a shocking after-effect or a noisy partnership for the more thoroughly "composed" instrumental material, or considered as compositional material in lieu of instrumental sounds, as they invariably were for many of the historical forerunners examined in early chapters, *Different Trains* demonstrates the feat of deriving a compositional plan and pitch structure from sound recordings and then adding on instrumental music, instead of vice versa.

A deeply personal work about fate, loss, and survival, *Different Trains* was described by Reich as a way of evoking a poignant irony of his childhood:

> You know the story about the man who goes all over the world looking for treasure and it turns out to be under his bed? Well, I began to get introspective and think about my own childhood. When I was one year old my parents separated, and my mother went to California, and my father stayed in New York. I used to go back and forth on these very romantic, very exciting, and somewhat sad train trips of four days and four nights, with Virginia, the woman who took care of me. And the years that I did that were 1939 to 1942. You know the famous photograph of the little kid in the Warsaw ghetto with his hands up in the air? He looks just like me! I thought to myself, there but for the grace of God—I was in America, very sheltered and very fortunate, but had I been across the ocean, I would have been on another train. I would have been taken to Poland and I would be dead.[77]

Different Trains has two overlapping narratives: the first, an autobiographical account of Reich taking train trips across the United States, repeatedly, in the early years of World War II. Superimposed is the narrative of many children in Europe during those same years, being taken to their deaths in Hitler's trains. The photograph Reich mentions, pictured below, shows an anonymous child about the same age as Reich in 1943.

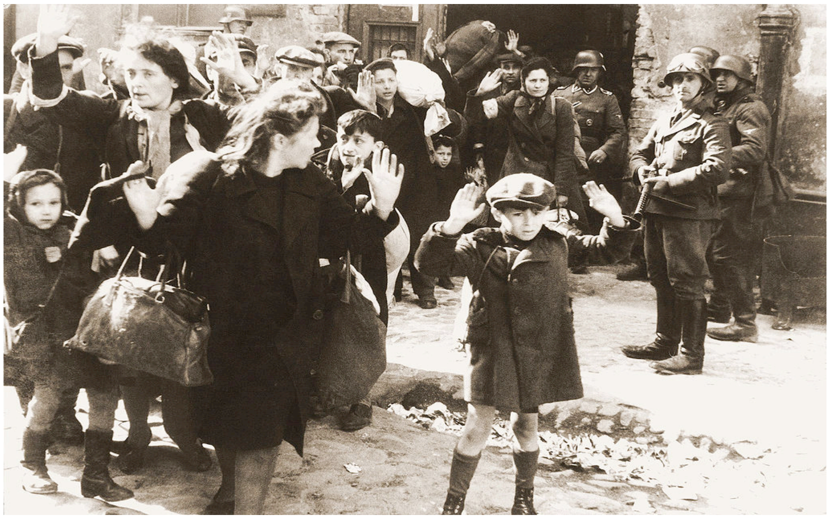

Figure 2: "Warsaw Ghetto boy," Photographer unknown

---

[77] Steve Reich quoted in Schwarz, K R. *Minimalists*. London: Phaidon, 1996. Print. 95.

In order to convey this complex programmatic narrative, Reich decided to use field recordings. He had been commissioned by the Kronos Quartet in 1988, and after deciding on the program above, saw an opportunity to expand on the traditional ensemble of string quartet by implementing recordings of found sounds and speech via the relatively newly-available electronic device, the sampler. The sampler would enable him to use many field recordings and to integrate them with precision in the musical surface.

Reich began with assembling his recordings, some of which he found in archives and others he recorded himself. From archives, he pulled taped recordings of Holocaust survivors giving their recollections of the death trains used during the Holocaust. He also found both American and European train whistles. He sought out his governess, Virginia, who had taken him on all of his trans-continental trips. She was then living in Queens, and Reich recorded her descriptions of the train trips. And then he found a retired Pullman porter Lawrence Davis, who worked on trains that crossed American during the 1940s, and recorded his recollections. From its onset, *Different Trains* had a documentary aspect that only using everyday sounds and field recordings can provide.

In working with train samples, Reich interestingly mirrors the earliest history of music with recorded sound, evoking Schaeffer's *Railroad Study* at the birth of *musique concrète*. But whereas Schaeffer struggled to manipulate his recordings in such a way that they could be perceived for their abstract sound qualities, as train sounds that were not part of a drama with trains, Reich embraces both the musical qualities of the train samples and their narrative possibilities. *Different Trains* is in every sense programmatic, but its use of recorded sounds shifts the means of making the "program." With a traditional instrumental piece, say the *Symphonie Fantastique* or *Don Juan*, the program may be traced via the revelation of the composer's intention. In other words, the listener needs a "key" or a "code" to interpret programmatic intent, except in instances when the instrumental music becomes directly mimetic, such as with bird song. But by using recorded sounds, instead of instruments mimicking sounds or a performer speaking programmatic words, the actual event becomes implicated in the fabric of the piece. Field recordings have the utmost power to place us within a narrative of the past—not by imitation, but by direct exposure. In *Different Trains*, Reich is able to plunge the listener into a painful past by the direct voices of Holocaust survivors, by the sounds of not just any train, but by the very death trains that they survived. Just as the collages studied in Chapter One showed early collapse between art and imitation, so the use of sound recordings in music represents a collapse between an imagined program for music and a direct engagement with one. As we shall see, Reich skillfully integrates each recording into the musical surface, so that the field recordings are part of the music, but also maintain their raw and suggestive power to evoke, instantly, time and place.

Ordinarily the compositional question of using found sounds and recorded materials is one of integration: how to take the "noisier," more diverse sonic content and partner it with the comparatively more unified instrumental sounds? Instead of starting with instrumental music and then "scoring" in the sounds, in *Different Trains* Reich elected to begin with sounds and then generate all of the music based on the sound samples' inherent attributes. In this approach he returns to techniques used in his early tape pieces *It's Gonna Rain* and *Come Out*, which both rely on the inherent melody of spoken word. In *Different Trains*, Reich combed through his spoken word and train recordings and selected those that were the most naturally melodic. Then he notated these melodies to generate the pitch and rhythmic material for the piece. He explained the procedure: "All the melodies in the piece were basically taken just the way you take melodic dictation, only I was taking them from people's voices. As they spoke, so I wrote; they gave me the notes, they gave me timbre, they game me tempo, and they gave me meaning."[78] Interestingly, Reich allows the natural changes in speed in the voice to dictate tempo changes in the piece. This procedure of allowing instrumental music to spring, almost fully formed, from sound samples and found sounds represents a complete shift from our early example *Parade*, where the everyday sound provided surprising color and punctuation, a shocking collage. By treating the recorded sounds in the way that he does, Reich provides a musical surface where the sounds and the instruments do not sound collaged, or like a juxtaposition of disjunct parts, but rather like a seamless whole.

Different Trains possesses a *moto perpetuo* characteristic of Minimalist works and appropriate to its programmatic intent. With his array of sound samples, recordings of overdubbed string quartets, and the live string quartet itself, Reich creates a ceaseless swarm of motion. Programmatically, Reich evokes the motion of a train ride: steady and constant motion which yet has evolving and swirling details. The piece is presented in three movements: "America: Before the War," "Europe: During the War," and "After the War." Each movement can be thought of as a series of brilliant textural changes; short snippets of music are strung together like beads on necklace, with a new tempo, change of texture, and pitch changes creating the sections. Within each section tempo and pitch material are static, but there are continual alterations in rhythm and texture. The complex and shifting motives underline the fundamental irony of the piece, pointing to the obscure workings of fate and chance that separate the very different outcomes of our lives.

---

[78] Reich quoted in Schwartz, 96.

In order to examine in more specific detail the interactions between the everyday sounds and the string quartet, I'm going to provide an outline of the first movement of *Different Trains*, "America: Before the War," a movement which evokes a nostalgia for the epic train rides of Reich's youth. The movement opens with a train and the string quartet locked in imitation, implicating them as part of the same narrative from the first moment. The violins vamp on a simple, repetitive motion, along with overdubbed strings, which crescendo as both live and recorded viola and cello enter, filling out the texture into one large, warm, and frenetic engine. Simultaneously the clanging of a train on its tracks crescendos in, leading to what will become a unifying motive for the varying sections of the movement: the blast of a pitched train whistle, edited into a melodic motive that pierces through the thick texture. Reich uses the train whistle as an extension of the string quartet; it functions as a melodic, solo voice in the register of the first violin, but via its more strident tone color acts as an extension of the first violin's capabilities.

The transition to the second section of the first movement sets the stage for the array of compositional devices Reich will use to create each of the many transitions within the first movement. At :38 in the Kronos Quartet recording, the viola comes in with a new melody foregrounded against the steady-state live and overdubbed strings. Reich then presents the listener with the first spoken word sample, his former governess Virginia stating "From Chicago," and then "From Chicago to New York." Her natural pitch inflections had been prepared by the viola melody, which is an exact match and continues to underlie the spoken word recordings.

This pattern of string instrument "introducing" the melody of the spoken word will pervade the piece. The first movement is broken up into nine main sections (each approximately a minute), and every section is delineated by a new spoken word "melody," as well as the ensuing tempo change insinuated by the speech rhythms of the sample. Reich moves from Virginia's samples of "From Chicago to New York" and "One of the Fastest Trains," to the spoken word recordings of the male Pullman porter Lawrence Davis, "From New York to Los Angeles," and then back and forth between the two. The spoken word sample that lends the piece its poignant name, "Different trains every time," appears in the fifth section, at 4'53." In this section the violins, both live and overdubbed, take on an unearthly brightness, as one considers Reich's intended meaning of how different trains can lead us either to adventure or unspeakable horror.

The final section features a series of dates in the recording; "1939," "1940," and "1941" are given subsequently, building up to the second movement, "Europe: During the War," in which strident train whistles will give way to ghostly and horrific air raid sirens, as Reich rebuilds the horror of the Holocaust via a sad maze of sirens and survivor voices. The hope of "From New York to Los Angeles" turns into "The Germans walked into Holland," as the strings and recordings are handled to create utmost dissonance. Clatters, frequency sweeps, and the shrieks of the strings all evoke genocide and disaster.

Like *Fog Tropes*, *Different Trains* demonstrates that recorded sounds can be at once referential *and* sonically integrated in the musical surface. If we look back to Schaeffer's inclination that sounds needed to be defamiliarized in order to become musical we might consider both Reich and Marshall's pieces as a rebuttal, or at least the flourishing of a style of using noises that Schaeffer understandably could not imagine at the time—a further colonization of his "terrae incognitae."

IV. The Books' *The Lemon of Pink I*

Though the prior two case studies indicate a leaning away from collage and juxtaposition in the use of everyday sounds, some more recent works celebrate a highly differentiated use of sound and yet, crucially, also represent a departure from the type of sound collage manifested in an early work like *Parade*. To address how the aesthetic of collages with noises has developed, I'll now shift to two nearly contemporary pieces, both of which are composed by artists who would probably not be considered classical composers in the same way that Reich and Marshall would.

Nowhere is the explosion in the use of everyday and found sounds as evident as it is in popular music over the past twenty years. Of course, bands have been using sound samples basically since the advent of the recording technology, so there are countless examples from the 1950s onwards, with the Beatles providing some of the most famous examples of "concrete" stylings within the sphere of popular song. However, in what we might call a post-stylistic age of popular music, where genres have splintered beyond recognition and then reconstituted themselves with every variety of hybridity, the routine use of everyday sounds or noises has reached what I would describe as a fair degree of normalcy. To chart the evolution, one might point to the distance traveled between the pistol shots found in *Parade*, considered a shocking avant-garde styling, and the gun shots sequenced into M.I.A.'s hit "Paper Planes," considered so natural to the music that crowds of thousands dance along to it without a thought. In choosing a few examples of popular electronic music, I wish merely to apply a sense of progress and development in the use of everyday sound to a broader sampling of music than classical music affords, as well as to show how some of the same stylistic and compositional concerns that one might apply to works of so-called “art music” carry over to a few “popular” works, though one could easily argue that such a delineation between the pieces is ultimately arbitrary.

The band The Books is a folktronica duo that has enjoyed an unusual cross-over success in the past ten years, playing in venues as diverse as Carnegie Hall and Bowery Ballroom. The music of one of the duo’s members, Nick Zammuto, was recently highlighted in a concert that the Bang on a Can All Stars curated entitled “Field Recordings,” which was first presented at the Barbican in London. The Pulitzer-prize winning composer David Lang said that presenting a concert of pieces that used recorded found sounds “is a kind of ghost story. We asked composers from different parts of the music world to find a recording of something that already exists - a voice, a sound, a faded scrap of melody - and then write a new piece around it.”[79] Nick Zammuto’s inclusion in this concert of predominantly classical composers writing for instruments and recorded found sounds points to a lineage between popular and classical works that make careful use of field recordings or ambient noises. Indeed, David Lang’s description of compositions with field recordings as “ghost stories” makes sense in light of two of the pieces previously analyzed, *Fog Tropes* and *Different Trains,* which both derive their power from the haunting immediacy of recorded sounds of the past. While Nick Zammuto and the Books write in a more popular idiom, their careful integration of recorded found sounds into a song’s texture invites side-by-side analysis.

The Books’ music combines cello and guitar as primary instruments with an encyclopedic array of recorded sounds, many of which the band sources from records and tapes collected at garage sales across the country. The other band member, Paul de Jong, had been collecting sounds for years on minidisc prior to meeting Zammuto. When they met, they had the idea of combining their respective instrumental skills and their shared passion for everyday sound environments. De Jong describes the creation of their first tracks as "record[ing] pretty unassumingly in our apartments with the window open and you hear a crow in the background, and it all becomes part of the music." With an aesthetic inclusiveness that John Cage might appreciate, the duo not only uses everyday sounds but also emphasizes the chance sonic events encapsulated in the recording process itself: string noise, background noise, high or low bands of static, sonic "accidents" like a cell phone noise or a bird call. Over their decade working together, the Books assembled over 35,000 individually named sound recordings, a huge library of compositional material.

---

[79] Bang on a Can website, http://bangonacan.org/staged_productions/field_recordings.

One of the tracks by the Books that shows the most virtuosic and far-ranging incorporation of everyday sound is the title track off of their second album, *The Lemon of Pink*. The work opens with a short piano motive which will become an anchor, a pedal point for an enormous and dynamic range of everyday sounds and spoken word recordings. In just the first twenty seconds, the listener is presented with throat clearing, speaking, humming, static pops, and very short bursts of singing. A snippet of melody is presented in a series of pitched samples so brief that their identity is obscured. A woman declares "The Lemon of Pink" and then shortly afterwards "Flowing velvet." The nonsensical relation between these subsequent phrases sets a Dada-like tone for the piece; potential meanings are continually presented to the listener, but are subverted by the swift and disorienting shifts in syntax. Throughout the hiss of a record player is audible, bathing the track in an ambience reminiscent of an old recording. Early on in the track a voice whispers "subtle details," and indeed this might be seen as an admonition to the listener: the more one listens to the track, the more bottomless the sonic details seem. Because the ear can only depend on the piano gesture, looped at even intervals, the listener is forced into an attitude of attentiveness, catching at snippets of sound as they swirl by. Zammuto has stated that:

> Just by placing two disparate elements next to each other, they immediately start a conversation as your brain tries to wrap itself around their relationship, and I think it's your mind itself that creates that relationship in a lot of ways. And that's what the music is about, is the ability of the mind. ... Given any two things, your brain will fill in the gap, and we're always interested in how big we can make that gap before it falls apart."[80]

As the sampled recordings accumulate throughout the opening of *The Lemon of Pink,* once can see what Zammuto means by the "gap" between the sounds. While the opening has them speeding by fairly quickly, the mind is caught puzzling out the interactions. It's after the more busy opening minute of the piece, though, that the listener can start to get a subtle sense of narrative from these wide ranging sound references.

Around the minute mark, The Books introduce a more continuous layer of instrumental sound to the piece. Ordinarily the instrumental lines (predominantly cello and guitar) have a strong folk or roots basis to their sound. In *The Lemon of Pink* a folksy banjo riff enters first, replete with bends and leisurely turns, but it is what surrounds the riff that is most interesting. The Books envelop the banjo figuration with a cast of obscure sounds. High clatters, which could be telegraph sounds with only a narrow band of high frequencies preserved, add a delicate amount of high energy, a barely-percussive layer of pulses. Vague and quiet swoops of white noise pervade the background, the flitting sound of something moving heavily through the air. The Books bring an unprecedented level of texture and roughage to their pieces via these carefully handled details of ambience; they invoke a land of sonic scribbles and castaways.

The Books then beginning adding sounds that feel a bit more narrative and shift some of the more obscure sounds into focus. As the instrumental line builds with guitar and overdubbed guitar, the listener hears the sound of scrapping tools and footsteps crunching over a gravel path. Men begin to chatter in the background; they are working and calling to one another, singing in an off-handed way. In one particularly clear sample a man calls, “Hey, Hey, Hey, Niggers.” While many of the samples are not clear, the cumulative effect builds a sense of a rural scene, labor in the fields—potentially a commentary on the plight of the rural poor? A plaintive cello line slides up and down, and then everything cuts out. In a moment that seems to be the emotional core of the piece, a woman sings: “We went through hell. All’s well that ends well. Well, well, well, well, well, well.” Because the past few minutes of the piece have been so filled with clutter, clatter, and sonic detailing, the lyrical and unadorned nature of this section stands out. According to the CD liner notes, the vocalist Anne Doerner recorded with the band, so the sections with her voice sound more clean and contemporary compared to the sections layered with found sounds.

---

[80] http://www.npr.org/2010/09/03/129607098/the-books-making-music-through-found-sound

The Books are masters of building up a sense of nostalgia via their intricate layers of field recordings, all of which resist attempts at any straightforward or literal interpretations. Some of their works tend more towards Dada in their nonsensical word combinations, but others seem to be pointing at a feeling of shared humanity despite incomprehensibility, or at least to suggest that there is a wide field of human communication. The incorporation of folk-based instrumental figurations also enhances this sense of attempting to communicate on some universal human level. In *The Lemon of Pink* the found sounds give the listener a sense of hardship and redemption cut loose of specific narrative. This ambiguous handling of the field recordings and found sounds unleashes their power to suggest on many different levels.

As such the Books present another inflection of the modalities explored thus far: a use of found sound that is *loosely* referential and which exists on the spectrum between collage and integration, though closer to collage. Remembering the polarity established by Cage and Schaeffer's respective approaches to the identifiable versus defamiliarized use of sound, the Books pinpoint what I would propose is an "in between" compositional solution, where identifiable sounds are made less familiar by the "gaps" between them. The careful conjuncture of non-associated found sounds creates an echo chamber of possible meanings and interpretations. And unlike Cage, the Books clearly support the dramatic expressive potential of sound. The incorporation of their found sounds with folk music seems to stake out the sounds' dramatic potential, but the surreal and unusual mixture of found sound prevents any literal or overly specific claims from being made about the music.

V. DJ Spooky's and DJ Wally's *Zeta Reticulli/If I Told Him a Complete Portrait of Picasso*

Dualities such as collage vs. integration and identifiability vs. defamiliarization can be expanded into lush spectra that create vast tracts of compositional potential. The three previous case studies have shown varying inhabitations of these spectra; however none of the pieces covered so far has addressed the impact of the explosion of available everyday sounds created by the forces of globalization and digital culture. All of the pioneering works covered in Chapters One through Three, with the arguable exception of Cage's 4'33", could be considered children of the Industrial Revolution, with an interest in noise spurred by the concurrent spike in sound textures, a kind of reverberation of the noisiness of markets and the transference of capital.[81]

---

[81] One might also argue that even composers who eschew the use of urban, industrial, or city sounds and instead use natural environmental sounds do so in part because of their threatened disappearance.

The works of Paul D. Miller, known by the moniker “DJ Spooky, That Subliminal Kid,” revel in the intense variety of digital culture in a globalized world. With an interest in postmodern assemblages of sound, DJ Spooky is a writer, conceptual artist, and composer. He creates music that uses a huge range of sound samples, juxtaposing sundry times and cultures through mash-ups of sound. He holds a degree in philosophy and French literature, and while in college he learned to think of music as a “dynamic expression” of his philosophical inquiries.[82] In his twenties he started a radio show at Columbia that made use of the radio’s overwhelming archive of sounds to create noisy compilations, loosely based on the aesthetics of hip-hop. His projects in the twenty years since have been incredibly wide-ranging. He did a multimedia presentation on climate change at the American Museum of Natural History, for which he traveled to Antarctica to bring home videos and sound samples, later turning this into a traveling production sponsored by the Brooklyn Academy of Music and Dartmouth. His book *Rhythm Science* (with an accompanying CD) details his ideas about the DJ as a an “auteur of postmodern media.”[83] He edited *Sound Unbound*, a collection of essays concerning sound art, digital media, and contemporary composition, including writings from Brian Eno, Jonathan Lethem, Steve Reich, and Pierre Boulez. He has collaborated with musicians as disparate as Yoko Ono and Iannis Xenakis.

Though DJ Spooky integrates a large array of noises, everyday sounds, and instrumental music, he forms a counterpoint to the previous three case studies in his concentration on sampled digital sounds. Like the Books, he straddles the world of art music and popular music. As the name “Sound Unbound” indicates, he’s completely aware of his lineage within 20th and 21st-century music, continuing the long march towards a liberated use of all available sound materials for music-making. On the spectrum of collage vs. integration, DJ Spooky veers towards collage, but he uses these striking and unexpected juxtapositions of sounds and instrumental music in order to create an authentic musical identity that takes in the full variety of contemporary music-making:

---

[82] http://www.egs.edu/faculty/dj-spooky-paul-miller/biography/
[83] http://www.egs.edu/faculty/dj-spooky-paul-miller/biography/

> When I came to DJ-ing, my surroundings - the dense spectrum of media grounded in advanced capitalism - seemed to have already constructed so many of my aspirations and desires for me; I felt like my nerves extended to all of these images, sounds, other people - that all of them were extensions of myself, just as I was an extension of them. . . . By creating an analogical structure of sounds based on collage, with myself as the only common denominator, the sounds come to represent me.[84]

DJ Spooky uses everyday sounds to represent his own life, a life saturated in media that includes a full spectrum of "noise," from popular music to radio blips to random chatter.

The piece *Zeta Reticulli/If I Told Him a Complete Portrait of Picasso,* from the companion CD to the book *Rhythm Science*, will serve as a model for exploring DJ Spooky's aesthetic of found sounds. The companion CD to *Rhythm Science* mixes rare vocal recordings by authors and poets such as Antonin Artaud, e. e. cummings, Gertrude Stein, Marcel Duchamp, and Gilles Deleuze, among others, and sequences these spoken word samples with electronic beats. Here DJ Spooky uses a recording of Gertrude Stein reading one of her characteristically winding, serpentine, and doubling-back sentences, which starts, "If I told him a completed portrait of Picasso. If I told him would he like it, would he like it if I told him, would he like it, would Napoleon, would Napoleon, would he, would he like it..." She reads rhythmically, pausing between phrases. DJ Spooky borrows a beat from another DJ, DJ Wally, and then conjoins the Stein and the Wally in elastic and buoyant patterns. To these borrowed samples, DJ Spooky adds a synthesized string line, arpeggiated bells, background recording "crackle," and various lines of synthesizer counterpoint. At one point Stein announces “Now actively repeat it all, repeat it all,” as the same compound of sounds swirl around. Indeed, the short track is highly repetitive, with all the initial elements, once introduced, remaining for the entire track. However the entrances, as well as the beat’s relationship to the Stein recording, are continually shifting, which gives the track a great deal of interest despite the lack of harmonic progression or extreme textural changes.

---

[84] DJ, Spooky T. S. K. *Rhythm Science*. Cambridge, Mass: Mediawork/MIT Press, 2004. Print. 21-24.

The key compositional act in this piece is the timing between Stein’s vocal inflections and the beat, which is comprised of a processed drum set and a bass line. In order to understand what compositional choices were made, one can listen to the original Stein recording, which is archived on UbuWeb.[85] It’s immediately clear that the recording has been subtlety edited; while none of Stein’s inflections within a syllable have been altered, DJ Spooky has made small shifts between the words and syllables in order to allow some elements to sync with downbeats or offbeats. However, he eschews “lining up” the beginning of phrases with downbeats, preferring to align some words mid-syllable, or else a poignant pause, with the grid of the drums and the bass. This very surgical treatment of the sample, creating neither rigorous sequencing that would destroy the musicality of Stein’s reading, nor allowing the recording to flow without anchoring it to sections of the beat, creates the elastic yet orderly ethos of the track. Here one can trace an outgrowth of Schaeffer’s work with rhythmic loops. Schaeffer pinpointed the shift in energy that a loop brings to a noise. Just as Schaeffer’s loops sought to bring out musical qualities that might otherwise go unnoticed in a sound, DJ Spooky’s looping and trimming of Stein’s voice maximizes our perception of its musical attributes. But whereas Schaeffer used loops to abstract a sound’s source and meaning, DJ Spooky allows for identifiable spoken word. Despite its identifiability, there are yet subtle rhythmic interplays between the arrhythmia of Stein's spoken words and the sequenced sounds.

---

[85] http://media.sas.upenn.edu/pennsound/authors/Stein/1935/Stein-Gertrude_If-I-Told-Him.mp3

In keeping with his postmodern aesthetic, DJ Spooky arranges Stein's somewhat nonsensical but delightful sentences to reach our ears through a sea of contemporary noises: sundry synthesized sounds fully familiar to a generation saturated in digital culture. The soundscape for this piece is a bit unruly; as the name Sound Unbound suggests DJ Spooky unleashes sounds, creating a mash-up that provides a sonic imprint of a world saturated with sound samples. To extend Schaeffer's metaphor of the "terrae incognitae" even further, one might point to a globalization of sound space instead of merely a colonization. Sampling and digital culture allow an even further filling out of the available territory of sound, and in the extreme proliferation of possible noises suggest a new problem for composers: the metaphorical "over-development" of sonic territory, a kind of crowding that results from the inclusion of so many possible sounds.

Conclusion

When I was an undergraduate composition student at Yale, I was struck by the number of guest composers who visited our weekly seminar who had come of age musically during the reign of serial music. Many of these composers expressed an extreme difficulty in moving away from this idiom, with its vigorously systematic approach to compositional material. On one occasion, composer Martin Bresnick attempted to pin down the difference between his generation of composers and ours with the following analogy. He told us to imagine a young person coming upon wreckage on a beach. This person picks up splintered pieces of glass and wood, marveling at the beauty of their weathered textures and forms. For him or her, the shipwreck is a playground, an amazing source of disparate and interesting materials, free of the difficult and tragic associations of the shipwreck itself. For Bresnick, then, the composers of my generation are able to "beachcomb" through the remnants of the last generations' orthodoxies, a recognition that the academic urgency behind a particular system of composition had all but dissolved.

I would propose, then, that my dissertation traces a strand of 20th-century musical development that has been particularly resistant to orthodoxy. Composers like Schaeffer and Cage seem to have the spirit to "beachcomb" in the face of other more predominant strands of musical development, and indeed all of the composers I've mentioned forage on outlying boundaries of musical timbre. Crucially, the compositional approaches to music and sound chronicled in this dissertation stretch radial and rhizomatic instead of hierarchical.

While the four case studies above in no way seek to be comprehensive as to the deployment of found sounds in a compositional texture (if, indeed, one could claim to be comprehensive even when describing a much larger number of works), they do provide useful vantage points from which to ascertain the distance that has been traveled in from the points of origin proposed in Chapters One through Three. Each illustrate this suggested radial movement from early work, and all are connected with the earlier pieces via their expanded engagement with the same aesthetic dualities: how recognizable a sound will be, and how integrated it will become in the musical surface.

Whereas Morgan proposes a "crisis of syntax" at the turn of the 20th century, a sense that music *needed* specific organizational principles to keep pace with its sonic expansion, the more recent works that I have analyzed suggest a broader tendency which I believe to be emblematic of 21st-century music: not a crisis of syntax, but rather a relaxed acceptance of the *plurality* of syntax—an approach to music which we might optimistically think provides composers with inviting freedoms. John Updike describes his early visits to MoMA as encounters with "gaiety, diligence, and freedom, a freedom from old constraints of perspective and subject matter, a freedom to embrace and memorialize the world anew, a fearless freedom drenched in light."[86] The exploration of music's expansion to include everyday sounds shows a similar loosening up of sonic constraints, one in which "beachcombing" composers can choose from limitless sonic materials and articulate these finds with freedom.

---

[86] Updike, John. *Just Looking: Essays on Art*. New York: Knopf, 1989. Print, 14.

Bibliography

Apollinaire, Guillaume, and Peter Read. *The Cubist Painters*. Berkeley, Calif: University of California Press, 2004. Print.

Bernard, Jonathan W. *The Music of Edgard Varèse*. New Haven: Yale University Press, 1987. Print.

Cage, John, and Kyle Gann. *Silence: Lectures and Writings*. Middletown, Conn: Wesleyan University Press, 2011. Print

Calkins, Susan. "Modernism in Music and Erik Satie's Parade." *International Review of the Aesthetics and Sociology of Music*. 41.1 (2010): 3-19. Print.

Chessa, Luciano. *Luigi Russolo, Futurist: Noise, Visual Arts, and the Occult*. Berkeley: University of California Press, 2012. Print.

Chou, Wen-Chung. "Varese: A Sketch of the Man and His Music." *The Musical Quarterly*. 52.2 (1966): 151-170. Print.

Copeland, Roger. "Merce Cunningham and the Aesthetic of Collage." Tdr. 46.1 (2002). Print.

Cooper, Douglas. *The Cubist Epoch*. London: Phaidon in association with the Los Angeles County Museum of Art & the Metropolitan Museum of Art [distributed by Praeger, New York, 1971. Print.

Danto, Arthur C. *What Art Is*. , 2013. Print.

Danto, Arthur C. *The Transfiguration of the Commonplace: A Philosophy of Art*. Cambridge, Mass: Harvard University Press, 1981. Print.

DJ, Spooky T. S. K. *Rhythm Science*. Cambridge, Mass: Mediawork/MIT Press, 2004. Print

Ferrari, Giordano. "Le Populaire Comme Matériau Pour L'innovation Musicale : Satie, Milhaud, Ives." *Musurgia*. 9.1 (2002): 61-74. Print.

Gann, Kyle. *No Such Thing As Silence: John Cage's 4'33"*. New Haven [Conn.: Yale University Press, 2010. Print.

Gillmor, Alan M. *Erik Satie*. Boston: Twayne Publishers, 1988. Print.

Greenberg, Clement. *Art and Culture: Critical Essays*. Boston: Beacon Press, 1961. Print.

Joseph, Branden W, and Robert Rauschenberg. *Random Order: Robert Rauschenberg and the Neo-Avant-Garde*. Cambridge, Mass: MIT Press, 2003. Print.

Kachur, Lewis. "Picasso, Popular Music and Collage Cubism (1911-12)." The Burlington Magazine. 135.1081 (1993): 252-260. Print.

Kane, Brian. "L'objet Sonore Maintenant: Pierre Schaeffer, Sound Objects and the Phenomenological Reduction." Organised Sound. 12.1 (2007): 15-24. Print.

Kostelanetz, Richard. *Conversing with Cage*. New York: Limelight Editions, 1988. Print.

Malina, Frank J, and Pierre Schaeffer. "A Conversation on Concrete Music and Kinetic Art." *Leonardo*. 5.3 (1972): 255-260. Print.

Marinetti, F T, and Günter Berghaus. *Critical Writings*. New York: Farrar, Straus, and Giroux, 2006. Print.

Masheck, Joseph. *Marcel Duchamp in Perspective*. Englewood Cliffs, N.J: Prentice-Hall, 1974. Print.

Morgan, Robert. "A New Musical Reality: Futurism, Modernism, and 'The Art of Noises." in *A Special Issue on Marinetti and the Italian Futurists*. Baltimore, Md: Johns Hopkins University Press, 1994. Print.

Morgan, Robert P. *Twentieth-century Music: A History of Musical Style in Modern Europe and America*. New York: Norton, 1991. Print.

Nicholls, David. *John Cage*. Urbana: University of Illinois Press, 2007. Print.

Orledge, Robert. *Satie the Composer*. Cambridge: Cambridge University Press, 1990. Print.

Ottinger, Didier. *Futurism*. Paris: Éditions du Centre Pompidou, 2009. Print.

Palombini, Carlos. "Machine Songs V: Pierre Schaeffer: from Research into Noises to Experimental Music." *Computer Music Journal*. 17.3 (1993): Print.

Peterkin, Norman. "Erik Satie's 'parade'." Musical Times. (1919): 426-427. Print.

Rauschenberg, Robert, and Barbara Rose. *Rauschenberg*. New York: Vintage Books, 1987. Print.

Rewald, Sabine. *Cubism*. 2000. Internet resource.

Ross, Alex. *The Rest Is Noise: Listening to the Twentieth Century*. New York: Farrar, Straus and Giroux, 2007. Print.

Russolo, Luigi. *The Art of Noises*. New York: Pendragon Press, 1986. Print.

Saggini, Valerio. “Intonarumori” on www.thereminvox.com. Online. Accessed September 30, 2013.

Satie, Erik, and Jean Cocteau. *Parade: Ballet Réaliste*. Paris: Salabert, 1917. Musical score.

Satie, Erik. *Paradẽ ballet Realiste Sur Un Theme De Jean Cocteau: Full Score*. New York: Dover Publications Inc, 2000. Print.

Schaeffer, Pierre, Christine North, and John Dack. *In Search of a Concrete Music*. , 2012. Print

Sebestik, Miroslav, “Listen: John Cage.” 1992. Documentary film.

Solomon, Larry, “The Sounds of Silence: John Cage and 4’33”” 1998, rev. 2002. Online at http://solomonsmusic.net/4min33se.htm.

Stojanović-Novičić, Dragana. "Work of Edgard Varèse and "futurist Music": Affinities (and Differences)." *New Sound*. (2009): 50-61. Print.

Taylor, Brandon. *Collage: The Making of Modern Art*. London: Thames & Hudson, 2004. Print.

Thorn, Benjamin. “Luigi Russolo” in Music of the Twentieth Century Avant-garde.” in *Sitsky, Larry. Music of the Twentieth-Century Avant-Garde: A Biocritical Sourcebook*. Westport, Conn: Greenwood Press, 2002. Print.

Varèse, Edgard, Christopher Lyndon-Gee, Thomas Bloch, Maria Grochowska, and Elisabeth Watts. *Varese: Ameriques / Equatorial / Nocturnal / Ionisation*. Hong Kong: Naxos Digital Services Ltd, 2007. Sound recording.

Venn, Edward. "Rethinking Russolo." *Tempo. New Series*. 64.251 (2010): 8-16. Print.

Waldman, Diane. *Collage, Assemblage, and the Found Object*. New York: Harry N. Abrams, 1992. Print.

Watkins, Glenn. *Pyramids at the Louvre: Music, Culture, and Collage from Stravinsky to the Postmodernists.* Cambridge, Mass: Belknap Press of Harvard University Press, 1994. Print.

Weiss, Jeffrey S. *The Popular Culture of Modern Art: Picasso, Duchamp, and Avant-Gardism*. New Haven: Yale University Press, 1994. Print.

Whiting, Steven M. *Satie the Bohemian: From Cabaret to Concert Hall.* Oxford: Oxford University Press, 1999. Print.