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MAX NEUHAUS, R. MURRAY SCHAFER, AND THE CHALLENGES OF NOISE

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MAX NEUHAUS, R. MURRAY SCHAFER, AND THE CHALLENGES OF NOISE

DISSERTATION

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the College of Fine Arts at the University of Kentucky

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2018

ABSTRACT OF DISSERTATION

MAX NEUHAUS, R. MURRAY SCHAFER, AND THE CHALLENGES OF NOISE

In this dissertation, I analyzed Max Neuhaus's (1939-2009) and R. Murray Schafer's (b. 1932) commentary and work regarding noise, its control, and its relationship with the environment from the 1960 to the 1980s. Both Neuhaus and Schafer as well as those more directly involved with noise abatement research and policy were responding to the challenges and possibilities that noise posed in the latter twentieth century. In this project, I delved into these substantial links and argued that responding to and engaging with noise abatement policies was a key impetus to much of their work, which scholarship has yet to critically examine. Inspired by the listening strategies that Neuhaus and Schafer set forth, I also considered ways in which music educators and social activists might approach sound, becoming aural advocates or activists when working in their communities.

The works selected for analysis reflected contemporaneous studies held in the USA and Canada investigating the psychological and physiological impact of noise on humans, animals, and their landscape. Just as these investigations grew into the 1970s, new attention developed towards acoustic ecology and public sound art, both fields dealing with the relationship between sounds, living beings, and the environment. Neuhaus's works analyzed include the *Listen* series (1966-76), his *New York Times* op-ed piece titled "BANG, BOOooom, ThumP, EEEK, tinkle" (1974), and the *Emergency Vehicle Siren Redesign* project (1978-1989). These Neuhaus projects provided an alternative to the movement towards acoustic ecology put forward by his contemporary, Schafer. Analyses of Schafer and the World Soundscape Project's (WSP) publications included *Ear Cleaning* (1967), *The Book of Noise* (1970), and *A Survey of Community Noise Bylaws in Canada* (1972).

Featured were primary sources from the Max Neuhaus Papers (Columbia University Rare Book and Manuscript Library), newspaper reviews, and clippings. Also included were interviews with artists/associates of Neuhaus from his performance career (Phil Orenstein) and his *Sirens* project (Ray Gallon, Owen Greenspan, Herr Lugus, Julia Prospero, and Wolfgang Staehle) as well as Schafer's fellow WSP collaborator, Hildegard Westerkamp.

Keywords: Max Neuhaus, R. Murray Schafer, Noise, Soundwalks, Sound Art, Ecomusicology

Megan Elizabeth Murph_____ _

June 13, 2018_____ ___

MAX NEUHAUS, R. MURRAY SCHAFER, AND THE CHALLENGES OF NOISE

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Over the last few years, I have had the opportunity to present at many international, national, and regional conferences regarding Neuhaus, Schafer, and noise. These conferences include the Society for American Music, American Musicological Society's South-Central Chapter, the Dimensions of Political Ecology, and Sounding Out the Space: An International Conference on the Spatiality of Sound. The conversations that came out of and the feedback I received at these conversations were invaluable. Most importantly, I met incredible scholars and friends. For example, at Sounding Out the Space, I was lucky enough to meet Ella Finer and Jacob Downs, who's research and kindness has made a lasting impression on me.

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CHAPTER ONE: INTRODUCTION

"Noise is never so much a question of the intensity of sound as of the intensity of relationships between deep pasts; past and present, imagined or experienced, between one generation and the next, gods or mortals, between country and city, urb and suburb, between one class and another, between the sexes."
– Hillel Schwartz[1]

Any sound deemed a noise is bound to personal, social, political, economic, and environmental meanings. The definition of noise is ambiguous and can be as frustrating, perhaps, as the feelings associated with noise.[2] But noise is not an audible phenomenon nor is it a negative phenomenon. In Hillel Schwartz's quote above, he asserts that noise exists because of interpersonal and intrapersonal relationships. He sees all sounds as disturbances to any given matter and posits that noise is a disturbance of the mind in relation to another person's perception. The individual's perception is conditioned by their past and/or background. Schwartz's sagacious and comprehensive book, *Making Noise: From Babel to the Big Bang & Beyond*, covers the history and social concepts of noise, and documents how various societies have regulated noise in order to control groups of people and communities. Noise's social, "metaphoric power" (as Schwartz puts it), overarches the acoustic.

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[1] Hillel Schwartz, "Taxonomy of Noise," Lecture, Massachusetts Institute of Technology (MIT), Cambridge, MA, (Fall 2010), http://www.zonebooks.org/sound/schwartz_sound_03.mp3 (Accessed April 21, 2017).
[2] According to the Webster dictionary, "noise" could mean anything loud, confusing, disagreeable, unpleasant, undesirable, random, meaningless, discordant, disruptive, and/or something that interrupts "Noise," https://www.merriam-webster.com/dictionary/noise (Accessed December 2, 2017).

In similar fashion, Mike Goldsmith's book, *Discord: The History of Noise,* discusses the long and complex history of noise, the relationship between society and noise, the control of noise, and the use of noise as a weapon for protest.[3] He describes the power dynamics of noise control dating back to the Greeks and Chinese through various battles and actions.[4] Euro-American history is deeply ingrained with noise; from neighbors chattering, dogs barking, and babies crying, to the craftsman's tool hammering, horses' hooves clomping, carriages weaving over cobbled stones, musicians and vendors in the street howling, and "vagrants" asking for money. Henry II established noise laws in England with the first noise complaint filed in 1378.[5] By the 1400s, physicians claimed that noise could damage the ear.[6]

Since the word "noise" derives from the Latin word "nausea," meaning seasickness and eventually, "unwanted or disturbing sound," there is an etymological sense that "noise" interferes with the quality of (all) human life. The "nausea of sound" is perhaps a little dramatic but I would argue that this etymological meaning could be employed productively into thinking about "noise" as sounds that make the listener feel uncomfortable or "off-kilter." This connects to the central crux of this project, which is to understand how two artists, Neuhaus and Schafer, dealt with the uncomfortable challenges and implications of noise throughout their work. This project will explore how

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[3] Mike Goldsmith, *Discord: The History of Noise* (Oxford University Press, 2014).
[4] Goldsmith, 31. See Chapter 3, "Classical Noise," which discusses the use of noise in battle, noise in science, and noise in action. Aristotle questions noise or "otherworldly" sounds in outer space when he stated planets, or "motions of bodies…must create a noise…"
[5] Ibid, 42. The report involved neighbors complaining about loud trade workers, which and was handled by the London Assize of Nuisance.
[6] See Garret Keizer, "A Time Line of Noise History," *The Unwanted Sound of Everything We Want: A Book About Noise* (PublicAffairs, 2010).

the noise and noise policies of their communities in New York City and the Vancouver area influenced their output. By bringing together these artists' works in conversation with how the people and places of their time engaged with noise, I argue that Schafer and Neuhaus were both activists for sound in their own ways. While this project is not arguing that sounds at heightened decibels do not affect the environment and living things, it does consider how sounds are deemed as noisy and to what extent these sounds are regulated and/or affect the greater social strata.

THESIS

In this dissertation, I analyze Max Neuhaus's (1939-2009) and R. Murray Schafer's (b. 1932) commentary and work regarding noise, its control, and its relationship with the environment from the 1960 to the 1980s. Both Neuhaus and Schafer as well as those more directly involved with noise abatement research and policy were responding to the challenges and possibilities that noise posed in the latter twentieth century. However, very little scholarship has critically examined the concurrent links between noise abatement policies and these two artists during this time. In this project, I delve into these substantial links and argue that responding to and engaging with noise abatement policies was a key impetus to much of their work. Inspired by the listening strategies that Neuhaus and Schafer set forth, I also consider ways in which music educators and social activists might approach sound, becoming aural advocates or activists when working in their communities.

The works selected for analysis reflect contemporaneous studies held in the USA and Canada investigating the psychological and physiological impact of noise on humans, animals, and their landscape. Just as these investigations grew into the 1970s, new attention developed towards acoustic ecology and public sound art, both fields dealing with the relationship between sounds, living beings, and the environment. Neuhaus's works analyzed include the *Listen* series (1966-76), his *New York Times* op-ed piece titled "BANG, BOOooom, ThumP, EEEK, tinkle" (1974), and the *Emergency Vehicle Siren Redesign* project (1978-1989). These Neuhaus projects provide an alternative to the movement towards acoustic ecology put forward by his contemporary, Murray Schafer. Analyses of Schafer and the World Soundscape Project's (WSP) publications include *Ear Cleaning* (1967), *The Book of Noise* (1970), and *A Survey of Community Noise Bylaws in Canada* (1972).

Featured are primary sources from the Max Neuhaus Papers (Columbia University Rare Book and Manuscript Library) newspaper reviews and clippings, as well as interviews with artists/associates of Neuhaus's *Sirens* project (Ray Gallon, Owen Greenspan, Herr Lugus, Julia Prospero, and Wolfgang Staehle), and Schafer's fellow World Soundscape Project collaborator, Hildegard Westerkamp.

METHODOLOGY

In order to establish the significance of noise and its role in society and politics, I rely heavily on primary and secondary resources that pertain to definitions of noise throughout western history, the control of noise, and how noise connects to society. I will provide a narrative explaining how noise control and abatement developed in North

America during the late 1960s and 1970s in parallel with the activities and writings of Neuhaus and Schafer.[7] I drew heavily from the primary source documents from the Max Neuhaus Papers at Columbia University especially in regards to Neuhaus's Sirens Redesign project.[8] Items I analyze include four VHS recordings of siren experiments, photographs from the sirens experiment, receipts and papers from the project, an NPR interview from 1981 that includes a sound clip of the Sirens, and the drafts of the Sirens Patent. In addition, I conducted interviews with artists/associates of Neuhaus's Sirens project (Ray Gallon, Owen Greenspan, Herr Lugus, Julia Prospero, and Wolfgang Staehle), and Schafer's fellow World Soundscape Project (WSP) collaborator, Hildegard Westerkamp. Their interview statements guide the chapters and the full interview transcripts appear in the Appendix.

Other sources include those that document federal noise conditions, as well as local or city ordinances where appropriate (mainly New York City and Vancouver). Both Schafer and Neuhaus's writings reference noise abatement policies, which makes it important to understanding this history. In addition to these primary source writings, I also analyze the musical/sonic works of Neuhaus and Schafer in connection to noise.

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[7] The acts and bylaws passed by the USA and Canada include, but are not limited to: *United States Noise Control Act*, http://www.gsa.gov/graphics/pbs/Noise_Control_Act_of_1972.pdf (Accessed January 29, 2016);
United States Clean Air Act, https://www.gpo.gov/fdsys/pkg/USCODE-2008-title42/pdf/USCODE-2008-title42-chap85.pdf (Accessed January 29, 2016);
Canadian Federal Noise Regulations (Environmental and Occupational): https://www.ccohs.ca/oshanswers/phys_agents/exposure_can.html; (Accessed January 29, 2016) http://envirolaw.com/regulation-of-noise/ (Accessed January 29, 2016)

[8] *Max Neuhaus Papers*, Box 9-11 (Series I), Columbia University Rare Book and Manuscript Library. See Finding Aid: http://findingaids.cul.columbia.edu/ead/nnc-rb/ldpd_7459260/summary (Accessed January 29, 2016).

Here, I focus mainly on Neuhaus's performances of *Fontana Mix-Feed*, his *Listen* series, his op-ed protesting NYC noise ordinances, his *Times Square* piece, and the Sirens project.[9] I examine Schafer's *Epitaph for Moonlight*, courses involving noise pollution and listening, the creation and research of the World Soundscape Project, and his books pertaining to noise (*Ear Cleaning*, *The Book of Noise*, and *The Soundscape: The Tuning of the World*).

It is important to note my position as a young woman who grew up in the rural south and has only lived in southern United States. My perceptions of the world, including sounds within rural and urban spaces, is absolutely conditioned by my upbringing. I am also a certified yoga instructor, which ties to my interest of thinking about how we listen to inner and external sounds. While I have never lived in a northern, cosmopolitan area, I strived to remain sensitive when considering the sounds of the Vancouver and New York City areas around Neuhaus and Schafer's time. My sensitivity and awareness of environmental sounds is what led me to experiment with leading soundwalks. The conclusion of this dissertation will include an ethnography of my own public soundwalk and includes discussions I conducted with not only friends and academics in attendance, but also activists and community members. The discussions revolved around the role of sound in our town of Lexington, KY. My inclusion of this ethnography is a direct tie to the legacy of Neuhaus's listening walks and Schafer's soundwalks discussed throughout the dissertation. This unique experience will conclude

[9] Max Neuhaus, "Sirens," http://www.max-neuhaus.info/soundworks/vectors/invention/sirens/Sirens.pdf (Accessed February 19, 2018).

the project, tying into public musicology and aural advocacy, offering thoughts on ways to move forward when teaching or considering noise, sound, and the public.

SIGNIFICANCE OF TOPIC

This dissertation will look closely at how Neuhaus's and Schafer's work engaged with the political, social, and environmental aspects of noise during this time. In recent years, scholars have become much more interested in the topic of noise, but have yet to compare and contrast the works of Neuhaus and Schafer regarding noise. Discussing noise abatement without considering technology and its environmental impacts would be incomprehensible. This has required examining the literature in several different scientific fields. In the humanities, research has incorporated ideas about noise, music, sound, art, politics, and society and has been interdisciplinary by necessity. My dissertation intersects closely with the fields of sound studies and ecomusicology, both of which have drawn attention in both musicology and ethnomusicology. Sound studies pertains to the production and consumption of sounds; the research of how sound has changed throughout social history.[10] Ecomusicology (ecocriticism + musicology) deals with music/sound, culture/society, and nature/environment and for some authors, issues of sustainability and environmental crisis are central concerns.[11] Closely related to ecomusicology is the subfield of acoustic ecology, which is the study of human beings'

[10] Jonathan Sterne, ed. *Sound Studies Reader* (Routledge, 2012); Michael Bull, ed. *Sound Studies: Critical Concepts in Media and Cultural Studies* (Routledge, 2013).
[11] Aaron Allen and Kevin Dawe, eds. *Current Directions in Ecomusicology: Music, Culture, and Nature* (Routledge, 2015).

relationship to their environment as mediated through sound.[12] This also connects to the concept of the *soundscape*, the acoustic environment as perceived by human listeners but also human-made sounds modified by the environment. Both soundscape research and the field of acoustic ecology are heavily indebted to Schafer and his concepts of high fidelity and low fidelity sounds, which I address more thoroughly in Chapter Three. This project will not only contribute to the scholarship on Neuhaus and Schafer, but will also continue the growing dialogue between the two overlapping fields of ecomusicology and sound studies. The significance of this dissertation lies in the way it explores noise as the nexus of so many different impulses – from public policy, soundscapes, to innovative art.

DELIMITATION

The project will narrow its location to the city areas Neuhaus and Schafer were working in primarily during the 1960s and 1970s, which are New York City (Neuhaus) and Vancouver/Burnaby (Schafer). Both Neuhaus and Schafer traveled extensively and created works from the 1960s through the 2000s. Where appropriate, other works or projects appear in addition to the topics from the 1970s (like Neuhaus's Sirens project, which I argue grew out of his earlier works and flourished into the 1980s). The noise abatement history will broadly come from the USA Federal laws and the Canadian Bylaws, taking into consideration the differences and similarities between the two countries' political systems. It is not the goal of this dissertation to give a full history of

[12] Kendell Wrightson, "An Introduction to Acoustic Ecology," *Soundscape: The Journal of Acoustic Ecology*, Vol 1. No 1.

noise abatement in North America. Rather, it will hone in on certain components of noise policy history that intersect with works by Neuhaus and Schafer.

BACKGROUND

In 1969, the US Congress updated the *Walsh-Healey Act* with noise standards for labor workers that limited the decibels they encountered at their jobs for prolonged periods.[13] For example, hearing a sound at a level of 115 decibels for less than fifteen minutes and a sound at a level of ninety decibels for less than eight hours was permitted, but anything more would harm a person's hearing and would be seen as unethical.[14] Especially with factories and mechanical work environments, the Walsh-Healey Act helped in improving labor standards, especially in terms of preventing hearing loss and ear protection. These enforcements began to transfer out onto the streets and skies of cities by the 1960s. The research leading up to the Walsh-Healey Act would influence the country's need to "commence control" over local and state noise ordinances in order to create some national uniformity in regards to noise.[15] Guidelines related to sound transmission were primarily proposed at the municipal, state, or provincial level. When the *Noise Control Act* passed, it led the gateway for other state and national governments to pass similar regulations or update their preexisting ordinances.[16] Findings of the

[13] Also known as the Walsh-Healey Public Contracts Act, which established minimum wages, hours, and standards of labor. www.dol.gov/whd/govcontracts/pca.htm (Accessed April 27, 2016).
[14] Robert Alex Baron, *The Tyranny of Noise* (St. Martin's Press, 1970), 42.
[15] *Noise Control Act of 1972*, Section 2 [42 U.S.C. 4901] "Findings and Policy," Part A.3 http://www.gsa.gov/graphics/pbs/Noise_Control_Act_of_1972.pdf (Accessed January 29, 2016).
[16] Japan passed the first national noise control act with its scope primarily focused on occupational and construction noise.

Environmental Protection Agency backed the Noise Control Act. The EPA pled before Congress that 30 million Americans were exposed to non-occupational noise high enough to cause hearing loss and 44 million Americans live in homes impacted by aircraft or highway noise. The act influenced many states and cities in their planning and zoning decisions, some positively effecting transit systems and housing programs. Many European countries emulated the Noise Control Act, such as the Netherlands, France, Spain, and Denmark. Unlike in the United States, economics played a large role with European countries later developing strict regulations around decibel levels from hybrid vehicles, kitchen appliances, and so on. Of the United States, the west coast regions have had the most local innovations centered around motor vehicle sounds.

Based upon such data detailing the extent of noise health effects, the noise regulations established during the 1972 Noise Control Act (established out of Title IV from the 1970 *Clean Air Act*) involved setting standards to sources of noise, including vehicles, aircraft, heating and air-conditioning equipment, and major appliances. The Noise Control Act helped in the establishment of the Environmental Protection Agency's Office of Noise Abatement. The office was intended to help reduce noise pollution in urban areas, to minimize noise-related impacts on psychological and physiological effects on humans, wildlife, property, and other noise-related issues. The agency also ran experiments to study the effects of noise. These initiatives reflected the greater American concern with urban planning and the disturbance of sound.[17] Just as noise abatement and environmental awareness grew into the 1970s, new attention developed towards acoustic

[17] "Noise," Environmental Protection Agency Website, http://www.epa.gov/air/noise.html, (Accessed January 23, 2016).

ecology and public sound art, both fields dealing with the relationship between sounds, living beings, and the environment.

Pioneered by R. Murray Schafer and his team of young musicians, acoustic ecology has brought together many fields connected to sound, society, and ecology. In 1967, Schafer published *Ear Cleaning,* which offered ear training exercises to not only prepare his music students for contemporary music, but to get them thinking about the sounds they hear relating to their environment. After teaching the 'first college course on sounds from the environment and noise pollution' at Simon Fraser University and publishing *The Book of Noise* in 1970, Schafer went on to create the World Soundscape Project (WSP), which surveyed sounds from across urban and rural areas within and outside of Canada.[18] Coming from an anti-noise approach, Schafer and the WSP, led to the publication of *A Survey of Community Noise Bylaws in Canada* in 1972. *The Book of Noise* served as an introduction to noise pollution on an international level and its impact on citizens.

A Survey of Community Noise Bylaws in Canada served as a compendium of noise regulations from Canadian cities, with commentaries and statistical analysis to guide the reader and even offer legal advice on ways to deal with noise on local and municipal levels. Such publications led to the research of soundscapes, the institutionalizing of "soundwalking," and Schafer's internationally recognized 1977 book, *The Soundscape: Our Sonic Environment and the Tuning of the World*. Through his book, Schafer examines the pre- and post- industrial soundscape, the sounds which makeup those environments, and offers ways to analyze them. He discusses the evolution of nature and urban sounds as

[18] "World Soundscape Project History," http://www.sfu.ca/~truax/wsp.html, (Accessed January 28, 2016).

well as the perceptions and ideals connected to sound and music. *The Soundscape* also addresses many issues of the electric revolution regarding noise in the 1970s; roaring cars and aircraft, sounds of the city, etc.

During the same time, the American experimental percussionist and sound artist, Max Neuhaus, encouraged his listeners and readers to reconsider how they listened to sounds. From his *New York Times* op-ed piece (1974) to his early performances of John Cage's *Fontana Mix-Feed*, his *Listen* works (1966-76), his *Times Square* (1977) piece, and his *Sirens* project (1978-1989), all of Neuhaus's work dealt with the sonic and social perception of space while providing an alternative to the movement towards acoustic ecology put forward by his contemporary, Schafer. Published on December 4, 1974, "BANG, BOOooom, ThumP, EEEK, tinkle" protested the 'silly bureaucrats' of New York City's Department of Air Resources' 'dangerously misleading' noise ordinances by stating the city's 'noise propaganda' only made 'more noise.' Neuhaus considered the op-ed the largest work from his *Listen* series and thought "a million people" could read the paper and be exposed to his ideas on listening and noise. The piece printed two years after the United States Federal Government passed the Noise Control Act. Robert A. Baron, author of the 1970 anti-noise book, *The Tyranny of Noise,* wrote to the *New York Times* in response to Neuhaus's article. Baron not only was against Neuhaus's op-ed, but also was against Neuhaus's earlier electronic and percussion performances because it was heavily amplified and too loud.

In 1978, Neuhaus began a new project dealing with sounds of urban space with the goal of redesigning siren sounds and researching how siren sounds function. His project would last through the 1980s, patented under the name "Emergency Vehicle

Audible Warning System and Method" (US Patent # 5,012,221, April 30, 1991).[19] In his essay, "Sirens," Neuhaus discusses the siren as a key sound of the urban environment's sound shape. He wanted all sirens to be more locatable in a cityscape, interacting with its environment in a way that would better help drivers and pedestrians sonically during emergencies.[20] He reflected on the role of siren sounds for the urban dweller by saying: "The passage of a siren through a city is one of the largest sonic events in daily life. In dense urban-centers, it usually occurs more than one hundred times a day. In cities like New York, it is almost always present."[21]

[19] Max Neuhaus, "Emergency Vehicle Audible Warning System and Method," US Patent # 5,012,221 (April 30, 1991), http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=%22Emergency+Vehicle+Audible+Warning+System+Method%22&OS= (Accessed April 7, 2016).
[20] Max Neuhaus, "Sirens," http://www.max-neuhaus.info/soundworks/vectors/invention/ (Accessed April 7, 2016).
[21] Ibid.

THEORETRICAL FRAMEWORK

When thinking about noise as a pollutant on our environment and lives, theories of noise and nature have been especially helpful in approaching how sound has been associated with the environment by scientists, politicians, artists, and society. Historical geographer Neil Smith unpacks views on nature in his book *Uneven Development: Nature, Capital, and the Production of Space.* Such themes addressed by Smith include: (1) how humans have viewed nature from an external perspective, that is, as something which exists outside of society; (2) how humans have viewed nature from a universal prospective, as something which includes them; (3) how nature has been approached within science as something to be studied or manipulated and; (4) how the poetics or imagery of nature symbolizes hope, promise, power, matriarchy, nostalgia, divinity and much more.[22] Smith asserts that our understanding of nature cannot be understood by separating society from it. He also sees capitalism as being the keystone for how nature is viewed in its complexities and contradictions.[23] His later publications deal with the politics of public space, the gentrification of the inner city as economic process, and socio-economic theories on the production of space.[24] Smith's critique and analysis of nature's ties to capitalism have been an essential lens through which to view the legacy of Neuhaus's and Schafer's engagements with urban noise.

[22] Neil Smith, *Uneven Development: Nature, Capital, and the Production of Space* (University of Georgia Press, 1984).
[23] Ibid, 7.
[24] Neil Smith and Setha Low, ed. *The Politics of Public Space* (Routledge, 2006).

After the Industrial Revolution and moving into the 20th century, it became fashionable to place nature in urban spaces by adding city parks, reiterating ideals of femininity and beauty.[25] Additionally, it became popular to appreciate the wilderness; if you lived in the city you must take your vacation out in the God-centered, Edenic countryside where you can cleanse yourself from the noise, poverty, and depression of the city.[26] Those who did not own a vacation home could rent, book a resort, or go through a travel agency, which generated more money off one's pursuit to natural escapes. The bourgeois partaking in these activities effectively helped in maintaining the status quo and class divides; the noise, poverty, and depression of the city continued to thrive with their willingness (conscious or not) to go along. With nature not only becoming a commodity to dominate and even fetishize, its exploitation became rationalized and justified by the ruling classes. This idea aligns with other work by urban political ecologists intended to address the active role of the city in history and, the dualism between the city and the country/rural.[27] Urban space is often perceived as antithetical to nature, but as David Harvey proves, the city has always played an active role in history regarding nature. Harvey looks at urban social and environmental justice as well as views on nature in public spaces. He points out problems with "otherness"

[25] For example, Central Park in New York City was established and became known at its current size by 1873. Over the century the follow, it was refurbished and updated.
[26] This was also a time when environmental and outdoor clubs where being founded, for example the Sierra Club in the 1890s and the Boy Scouts in the 1910s.
[27] Nik Heynen, Maria Kaika, and Erik Swyngedouw, eds, *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism* (Routledge, 2006).

within public space and the divisions in labor and in environmentalism, which may be tied to class and capital.[28]

In geographer William Cronon's "The Trouble with Wilderness, or Getting Back to the Wrong Nature," he questions the North American notion of the environment by opening with the following:

> For many Americans, wilderness stands as the last remaining place where civilization, that all too human disease has not fully infected the earth… As Henry David Thoreau once famously declared, "In Wildness is the preservation of the World" …But is it?...It is not a pristine sanctuary where the last remnant of an untouched, endangered, but still transcendent nature can for at least a little while longer be encountered without the contaminating taint of civilization. Instead, it is a product of that civilization, and could hardly be contaminated by the very stuff of which it is made. [29]

He continues: "We mistake ourselves when we suppose that wilderness can be the solution to our culture's problematic relationships with the nonhuman world, for wilderness is itself no small part of the problem."[30] Smith, Cronon, and others have approached the class politics of space, place, and nature. These theories have helped to build a foundation through which to better understand, articulate and analyze the implications of Neuhaus's and Schafer's work in regard to noise abatement and soundscape cultivation and how these regulations and ideas impact citizens. These theories have helped me be more critical of Neuhaus and Schafer's work but also be more aware of the larger social implications of noise control during the time these artists were

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[28] David Harvey, *Justice, Nature and the Geography of Difference* (Blackwell, 1996). Matthew Gandy also looks at how nature has been "reworked" for political reasonings in New York City, see his *Concrete and Clay: Reworking Nature in New York City* (MIT Press, 2003).

[29] William Cronon, "The Trouble with Wilderness, or Getting Back to the Wrong Nature," *Uncommon Ground: Toward Reinventing Nature* (W.W. Norton, 1995).

[30] Ibid, 7-8.

active. Chapter Three will help reveal Schafer's view of nature as something that is organic, holy, and rationalized by silence. Neuhaus, however, does not draw as much division between sounds within his environment and attempts to create a more encompassing sonic experience when redesigning the Siren, as seen in Chapter Four. This project shows how their works not only comment on how some people been more entitled to the protection from adverse sound level exposure than others are, but also show how systems of power control noise. Their works prove the systems of power define these sounds made by "others," whether human or nonhuman, as noise.

LITERATURE REVIEW

During their early careers, Schafer was a composer, arts administrator, and a teacher while Neuhaus performed as an experimental percussionist. Research on Schafer is interdisciplinary and comes from the fields of musicology, sound studies, acoustic ecology, acoustic communications, anthropology, and beyond. Scholarship on Neuhaus, however, is primarily situated within the art realm (art history, visual studies, sound art, art history, art installation reviews, etc.). Museums have published books dealing with his works that have been exhibited at their establishment, such as Basel Kunsthalle, Bell Gallery, Bern Kunstalle, Dallas Museum of Art, and beyond. Many critics have also published newspaper or journal articles on his exhibited art works. Neuhaus also published essays regarding his soundworks and his interviews are in print and online on his estate's website. The website is a fascinating resource with many audio/visual elements and documents. Additionally, the Max Neuhaus Papers at Columbia University and museum archives like Houston's De Menil Collection, contain many project files and correspondences regarding Neuhaus's works. Because scholarship on Neuhaus is

centered in the art realm, I became very interested in his transition from a musician to a sound artist. My master's thesis, "Max Neuhaus and the Avant-Garde," takes into consideration Neuhaus's performance history as a percussionist and his transition into developing the sound installation.[31] Of this literature, none have dealt with the Sirens project. This dissertation will bring together sources from the Neuhaus Papers, interviews I conducted, and commentary on sirens by Neuhaus in order to understand the project's history as it corresponds to the rest of Neuhaus's career.

The other artist I focus on, Murray Schafer, published many essays and books, which help us understand his thoughts on his compositions and acoustic ecology research. In 1983, Stephen Adams wrote a biography in close communication with Schafer, simply titled *R. Murray Schafer*. Especially helpful is the timeline Adams provides of Schafer's life at the back of the book.[32] Schafer, like Neuhaus, was classically trained and, in his own way, was also experimental, especially in terms of his graphic notation and site-specific compositions. Paul Klee, Ezra Pound, and Marshall McLuhan were all inspirations for Schafer.[33] He took courses with McLuhan in the early 1950s, just when *The Mechanical Bride: Folklore of the Industrial Man* had released.[34] Schafer was heavily influenced by his critical thinking and communication theories, especially in terms of thinking about the relationship between society and the environment and aurality

[31] Megan Murph, "Max Neuhaus and the Avant-Garde" (Master's Thesis, Louisiana State University, 2013).
[32] Stephen Adams, *R. Murray Schafer* (Toronto, 1983).
[33] Adams, 5. Marshall McLuhan in the 1960s urged the aural had displaced the visual because of new communication technologies and media shifts.
[34] Marshall McLuhan, *The Mechanical Bride: Folklore of the Industrial Man* (The Vanguard Press, 1951).

more generally.[35] Many scholars discuss Schafer's soundscape theories or compositions within sound studies, acoustic ecology, musicology, and beyond, but none have compared his definitions of noise and publications of noise abatement to North America's concern with noise, and especially with Neuhaus's approach to listening walks and noise abatement. Marie Suzanne Thompson's 2014 dissertation, "Beyond Unwanted Sound: Noise, Affect and Aesthetic Moralism," and her later book under the same title, was a major help for my project.[36] In her work, she critically rethinks the definitions of noise, but also ties it to Schafer, considering "aesthetic moralism," where noise is construed as "bad" to silence as "good."[37] I will discuss Thompson's theories more in Chapter Four's tracing of Schafer's "anti-noise approach."[38] In Chapter Five, I will also reference scholars, such as Tom Kohut (2016), David Toop (2010) and Steve Goodman (2010), who have criticized Schafer for creating too much of a hierarchy in listening to hi-fi vs. lo-fi sounds.[39]

By the late 1970s and 1980s, social theorists and artists within and outside of academia began publishing works dealing with concepts of noise, the environment, and society. Especially significant was Schafer's and the World Soundscape Project's

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[35] Adams, 9-10.
[36] Marie Thompson, *Beyond Unwanted Sound: Noise, Affect and Aesthetic Moralism* (Bloomsbury Publishing, 2017). See also: "Beyond Unwanted Sound: Noise, Affect and Aesthetic Moralism," Ph.D. Dissertation, (Newcastle University, 2014).
[37] Thompson, "Beyond Unwanted Sound" Ph.D. Dissertation, 3.
[38] Ibid, 4.
[39] Tom Kohut, "Noise Pollution and the Eco-Politics of Sound: Toxicity, Nature and Culture in the Contemporary Soundscape," *Leonardo Music Journal*, Issue 25 (December 2015); David Toop, *Sinister Resonance: The Mediumship of the Listener* (Bloomsbury, 2011); Toop, *Ocean of Sound: Aether Talk, Ambient Sound and Imaginary Worlds* (London: Serpent's Tail, 1995); and Steve Goodman, *Sonic Warfare: Sound, Affect, and the Ecology of Fear* (The MIT Press, 2012).

research pertaining to noise pollution, as in their *Survey of Community Noise By-laws in Canada*, and recordings of soundscapes. Their research, stemming from the musical world, but evolving into the field of Acoustic Ecology, would go onto influence not only work within musicology, cultural ecology, environmentalism, but also ecomusicology and sound studies. Similarly, the emphasis on sustainability and environmentalism of the 1970s would influence many artists to think about site specificity in their work. Neuhaus would go onto pioneer the sound installation and the sound art world, but he arguably came to this from an experimental music background. Rather than wanting to connect with the environment for purely sustainable reasons, Neuhaus wanted to expand the connection with sound beyond the concert hall or museum by stepping out into other spaces, perhaps outdoors or in unusual places.

Literature pertaining to noise and its history comes from an array of fields: political science, environmental studies, acoustic ecology, sound studies, cultural studies and theory, musicology and ethnomusicology, philosophy, history, sociology, psychology, media studies, and urban studies. Just as noise tends to be a part of everyone's life, it transgresses academic divisions.[40] Scholarship, however, has yet to critically deal with how noise abatement's history has played a key role in connection to Neuhaus's and Schafer's works. My original research will fill in the gaps regarding scholarship on noise history, Neuhaus, and Schafer by looking at how their background, knowledge, and collaborations. Inspired by concepts grounded in experimentalism, they

[40] Douglas Kahn, *Noise, Water, Meat: A History of Sound in the Arts,* (MIT Press: 2001), 51. Just as it transgresses academic divisions, Kahn sees noise being of simultaneous spirit. It can occur during/around/with events, people, emotions, ideas, and more, all happening at the same time.

listened to nontraditional sounds, pondered the "noise" around them, and wrote on noise abatement in their areas of New York City and Vancouver.

The literature and data pertaining to noise and its control comes primarily from the United States prior to and during the years leading up to the Clean Air Act (1970) and the Noise Control Act (1972). Most of this literature comes from the medical field, environmental sciences, sound engineering, law, and urban planning. Special consideration must be taken for Alan Bell, who was appointed by the World Health Organization in the mid-1960s to study noise as it pertains to labor and occupational health.[41] His book, *Noise: An Occupational Hazard*, offers fourteen chapters pertaining to: how sounds are measured through decibels and the sound damage cause to the human ear over a course of time, the effects of noise on communication and behavior, deafness and hearing loss within the occupational workplace, personal protection devices, community noise, and international risks.[42] Bell uses scientific measurements (decibels) to access the deterioration of worker's physical and mental health, while considering the impact of the occupational noise on the community as well as the globe. Such endeavors were critical in gathering data needed to make federal US abatement laws successful.

Additionally, metropolitan neighborhood associations such as Robert Alex Baron's Upper Sixth Avenue Noise Abatement Association (USANAA), founded in 1965, were major players in local/city wide initiatives regarding noise abatement, noise ordinances, and their enforcement. The people of his community joined together to

[41] The result was his lectures given at the 1966 World Health Convention in Geneva.
[42] Alan Bell, *Noise: An Occupational Hazard* (World Health Organization: Geneva, 1966). Online PDF: http://apps.who.int/iris/bitstream/10665/39744/1/WHO_PHP_30.pdf (Accessed January 28, 2016).

combat the noisy subway construction happening from Sixth Avenue, between Radio City Music Hall and Central Park. Baron, along with his neighbors, were outraged that the "symphony of insanity" would last three-years, especially since what they had experienced was just the "overture to the concert."[43] They met with their Borough President, Councilman, Transit Authority, Mayor, and Governor. By the next year, however, USANAA had lost their battle for quiet, but they had stirred up a city-wide renaissance of education and action for noise abatement. Baron was invited to speak at the International Congress for Noise Abatement in Baden-Baden, Acoustical Society of America, initiated the NYC "quiet garbage truck" project, gave public demonstrations of "more quiet" construction machinery to use in the city, and more. He published his book, *The Tyranny of Noise* in 1970, accounting his experiences with NYC bureaucrats, citing research from Alan Bell, UNESCO, and others on how to improve the city. Baron provides an entertaining history of the "acoustic attack on man and his environment" beginning with the machines of the Industrial Revolution, but neglects to think about the impact outside of humans.

Like Bell, Baron is most concerned for the people, not necessarily the plants, air, and animals and all other parts of the ecosystem affected by noise. Also, Baron does not think outside of his upper-class shell or consider how sound impacts blue-collar workers and other communities. Baron does, however, consider how expensive noise is not just for the individual and their health, but also for public and private businesses and the nation, ending his book with a plea for noise abatement in America. Most importantly, Baron wrote to the *New York Times* in response to Neuhaus's 1974 article (this will be

[43] Robert Alex Baron, *The Tyranny of Noise* (St. Martin's Press, 1970), 4.

discussed thoroughly in Chapter Four). Baron not only was against Neuhaus's op-ed, but also was against Neuhaus's earlier electronic and percussion performances because it was heavily amplified and too loud. During this time, there is a proliferation of local groups concerned with traffic, air control, sounds around hospitals and schools, construction zones, and beyond.

During the years leading to the Clean Air Act (1970), several key sources were published about noise, health, and environment. Due to its involvement with air traffic and "air pollution," many consider the Noise Control Act as a continuation or a result of the Clean Air Act. The first book on noise pollution, James L. Hildebrand's *Noise Pollution and the Law* (1970), would be the catalyst for more publications to come regarding the subject. It is a compilation of essays by various scientists, doctors, lawyers, and engineers dealing with unwanted sounds in 'man's ecological system.'[44] The first part of the book focuses on the development of laws at that time, approaches to urban noise control, and the evolution of noise abatement. The section is devoted entirely to essays on the liability of aircraft noise, noise litigation at public airports, and the need for a national solution regarding aircraft noise control. The concluding section provides solutions for future problems, theories, and senate reports from May-June 1968 on aircraft noise control.

In 1977, several important books were published: scientist Patrick Cunniff's *Environmental Noise Pollution*, Schafer's *The Soundscape: The Tuning of the World*,

[44] James L. Hildebrand, ed. *Noise Pollution and the Law* (William S. Hein & Co., Inc.: New York, 1970).

social theorist Jacques Attali's *Noise: The Political Economy of Music*.[45] Cunniff's research focuses on scientific analysis of noise pollution[46] while Attali's work focuses on theorizing the political economy of noise within the development of music.[47] Attali sees noise as a social construct that became affiliated with disruption, violence, and social deviance. For Marxists, the idea of music is tied up in a mode of production where a given society is creating nothing new. Attali foreshadows a great deal of challenges with the production of music (particularly the "Repeating" section of the book). For example, Attali discusses how our traditional musical process of controlling noise mirrors the political process of structuring society.

A few years later in, *The Practice of Everyday Life* (1980), Michel De Certeau discusses ideas on how individuals make aspects of mass culture their own through the tactical uses of power. Particularly in "Walking in the City," De Certeau addresses the urban space and the relationship between government, corporations, and institutions, which make a city whole. Part of walking in the city involves the urban soundscape and how these individuals, institutions, businesses, and the governments tactically maneuver the reception of sound and noise in their city.[48]

In 2012, a team of musicologists, art historians, social theories, and more released the book, *Reverberations: The Philosophy, Aesthetics, and Politics of Noise*. Seventeen

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[45] In 1977, The US National Research Council also published *Guidelines for Preparing Environmental Impact Statements on Noise*. It is fitting that Donald Ivey's *Sound Pleasures: A Prelude to Active Listening* (Schirmer, 1977), which deals with perceptions of music, also came out that year.
[46] Patrick Cunniff, *Environmental Noise Pollution* (John Wiley & Sons, Inc., 1977).
[47] Jacques Attali, *Noise: The Political Economy of Music* (University of Minnesota Press, 1985).
[48] Michel de Certeau, *The Practice of Everyday* Life (University of Minnesota Press, 1998), 91-92.

essays are united addressing how noise has been "annoying" for most of human history, yet for many musicians and artists, it has served as some possibility of "pleasure" in their work. The book deals with how music, which has challenged previous forms, automatically termed "noise" because its order is misunderstood or does not exist. It also argues noise as being "static" since it can never fully be eliminated, allowing an opportunity to recreate noise as a technological meditation.[49]

Jonathan Sterne's *Sound Studies Reader* (2012) collects dozens of articles from scholars across multiple fields within the humanities and social sciences. His introduction helps in defining sound studies as an interdisciplinary field that deals with the production and consumption of sound, music, noise, silence, and how these have changed throughout history depending on social setting. The work of Sterne and his colleagues helps in defining what sound has done in the human world and what humans do in the sonic world.[50] One article that connects to this project is Chapter 35, Douglas Kahn's "Noises of the Avant-Garde." Kahn's article traces the use of noise primarily during the earlier part of the 20th century (use of noise in Dada, for the Futurists, and other modernists). Another article of note is Karin Bijsterveld's Chapter 15, "Listening to Machines: Industrial Noise, Heading Loss and the Cultural Meaning of Sound," not to mention the countless articles that comment on Schafer's soundscape and soundwalks. This includes a contribution by Schafer on the soundscape.

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[49] Michael Goddard, Benjamin Halligan, and Paul Hegarty, ed. *Reverberations: The Philosophy, Aesthetics, and Politics of Noise* (Bloomsbury Academic, 2012), 3. Related, Public Enemy's hiphop song "Bring the Noise," discussed with lyrics comparing the "blackness" of the musicians to the "noise" they create, showing the close ties between not only noise and society, but with identity.

[50] Jonathan Sterne, ed. *The Sound Studies Reader* (Routledge, 2012).

The same year of Sterne's edition, Trevor Pinch and Karin Bijsterveld also edited and published *The Oxford Handbook of Sound Studies* (2012). These articles consider sounds/music experiences within diverse everyday life settings, from retail spaces to auto-mechanic shops, clinics/laboratories, studios, homes, dance clubs, and more. Pinch and Bijsterveld question the notion that science can only be understood visually and prove that listening has contributed to scientific practice while discussing the rise of associated public problems, such as noise pollution. The first two chapters of the book deal with listening to industrialization and how industrial noise was controlled during the first part of the 20th century. Chapter eight looks at scientific instruments as musical instruments, with commentary on the use of the siren throughout social history. Chapter thirteen asks, "do signals have politics?," which is relevant to my inquiry in my chapter on Neuhaus's Sirens. Another book of note is Georgina Born's *Music, Sound, and Space: Transformations of Public and Private Experience* (2013), because it has articles and topics that tie into Neuhaus's and Schafer's ideas on public listening. Gascia Ouzounia's chapter in the book, "Sound installation art: from spatial poetics to politics, aesthetics to ethics," proves that sound installations "take into account not only physical geographies, but social and political geographies as well…"[51]

Steven Feld and Keith H. Basso's *Senses of Place* (1996) deals with how people phenomenologically make sense of place and how place is sensed. Feld's chapter, "Waterfalls of Song: An Acoustemology of Place in Bosavi, Papua New Guinea," brings together many ideas about how a place is sensed through the body (both physically and

[51]Gascia Ouzounian, "Sound installation art: from spatial poetics to politics, aesthetics to ethics," from *Music, Sound, and Space: Transformations of Public and Private Experience*, Georgina Born, ed., (Cambridge, 2013), 73-89.

socially) and through lived experiences. He draws substantially from Schafer's studies of acoustic communication and the sonic environment.[52] He states:

> Schafer's group began recording, observing, and acoustically analyzing the sonic experience of space and place, especially in Canada and Europe, and developed an analytical vocabulary, a notation system, and a comparative framework for the study of acoustic space and its human interpretation and feedback. This work went under the general rubrics of two terms coined by Schafer, "acoustic ecology" and "soundscape design…Schafer and his colleagues disseminated their ideas in media ranging from music compositions to radio collages and from technical reports to print and cassette travel journals, all of which led to a general synthesis, Schafer's *The Tuning of the World* (1977). This book has drawn substantial attention to the acoustic complexities of environments, especially northern ones, but its impact has largely been felt among musicians, acousticians, architectural designers, and audio and radio artist-composer-recordists. Acoustic ecology and soundscape studies have had rather less impact on ethnographers, who might study how people hear, respond to and imagine places as sensually sonic.[53]

Feld develops the influential concept he terms *acoustemology*, which adds to the "vocabulary of sensorial-sonic studies to argue the potential of acoustic knowing, of sounding as a condition of and for knowing, of sonic presence and awareness as potent shaping forces in how people make sense of experiences."[54]

Feld defines acoustemology as "an exploration of sonic sensibilities, specifically of ways in which sound is central to making sense, to knowing, to experiential truth."[55] His ideas become important especially in the final chapter when I consider the community of noise and using soundwalks to connect to political awareness. Feld points out it is also relevant to understand the "interplay of sound and felt balance in the sense and sensuality of emplacement, of making place…For places are as potentially

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[52] Schafer studied with McLuhan, who introduced the notion of "acoustic space" in the journal Explorations (1953-1959) at University of Toronto.
[53] Steven Feld, "Waterfalls of Song: An Acoustemology of Place in Bosavi, Papua New Guinea," *Senses of Place*, 95-6.
[54] Feld, 97.
[55] Ibid.

reverberant as they are reflective, and one's embodied experiences and memories of them may draw significantly on the interplay of that resoundingness and reflectiveness."[56] He sees the acoustic space as not only dimensional but also temporal; sounds may be heard "moving, placing points in time." The interplay of the sonic and visual influences the sensing, experiencing, and knowing of place.[57] Returning to the Schwartz quote from the beginning of the introduction, I believe noise is not a question of the intensity of sound, but a question of the intensity of a situation and/or relationship.

CHAPTER ORGANIZATION

Chapters Two to Four will focus on Neuhaus and Schafer as artists influenced by noise abatement. Chapter Two ("R. Murray Schafer and Max Neuhaus Histories") will provide an overview of the similar and contrasting musical/performance backgrounds of Schafer and Neuhaus. It will address how these artists came out of the avant-garde and experimental scene of the 20th century. Both were influenced by the embrace of noise in the music of Russolo to John Cage and beyond. While they both understood that advancements in technology made the environment louder, "requiring" noise abatement, they did not always acknowledge that technology allowed for many of the sonic explorations of composers like Varèse, Cage, Stockhausen, and themselves. This chapter will also consider the connection between experimentalism and the public at large while comparing philosophies and approaches between Schafer's soundwalks with Neuhaus's listening walks.

[56] Feld, 97.
[57] Ibid, 98.

Chapter Three ("R. Murray Schafer and The Book of Noise") will trace Schafer's anti-noise approach attributed through *The Book of Noise* by analyzing his publications and contributions that discuss themes of noise, society, and environment. Works analyzed include Schafer's *Ear Cleaning, The New Soundscape, The Book of Noise*, and the WSP's compendium of the Canadian noise bylaws, leading up to Schafer's *The Soundscape: The Tuning of the World*. This chapter will also include commentary by Hildegard Westerkamp. Chapter Four ("Neuhaus and the Emergency Vehicle Siren") will focus on the philosophies, writings, and works of Neuhaus. Using his *New York Times* op-ed piece, "BANG, BOOooom, ThumP, EEEK, tinkle," as a background, this chapter will address Neuhaus's work in the New York City subway systems, which created a battle with local bureaucracies, as well as his "Sirens" project. This chapter will include commentary by Ray Gallon, Owen Greenspan, Herr Lugus, Julia Prospero, and Wolfgang Staehle. It will also address the separate artistic side projects that came out of the "Sirens" experiments by the Airworks Group and Herr Lugus/Wolfgang Staehle.

After discussing Schafer's and Neuhaus's works impacted by noise abatement, the remaining chapters will continue conceptualizing issues involving the socioeconomic, political technicalities, and histories of noise. Chapter Five ("Further Challenges of Noise") will reconsider the challenging definitions of nature, environment, and noise addressed by geographers and social theorists with the goal of understanding how commentary about noise developed in North America, and ultimately influenced Neuhaus and Schafer. Theorists and historians such as Jacques Attali and David Hendy help in further understanding the works of Schafer and Neuhaus. The final chapter ("The Community of Noise") will theorize the themes of noise from the previous chapters by

considering ways in which noise mediates what it means for us to live equitable lives. This chapter will continue discussions about philosophies that consider the power dynamics that are associated with the ways in which sounds and noises are perceived and shaped in space/place with reference to theories by Attali, De Certeau, Smith, and others. The highlight of this chapter will involve an ethnography of a soundwalk I led alongside local organizations, which will also include a consideration of these aforementioned theories about noise. Finally, this chapter will conclude by taking into consideration other areas for future studies.[58]

[58] Examples include: the emergence of noise rock during the 1970s (urban bands like Mars), the Smithsonian Folkway's *Sounds of the Junkyard* release (1964), Sonic Youth, the philosophies behind Pauline Oliveros' *Sonic Meditations*, and more. Future research could also include theorizing noise as something "uncontrollable" becoming a "technological meditation."

CHAPTER TWO: R. MURRAY SCHAFER AND MAX NEUHAUS HISTORIES

"Wherever we are, what we hear is mostly noise. When we ignore it, it disturbs us. When we listen to it, we find it fascinating."
-John Cage[59]

"It is the duty of teachers to open this unlimited number of doors for children. And in the process, contemporary music should be included...the biggest problem in the way of building up student interest in this sort of fare is the prejudices of the teachers."
-Murray Schafer[60]

"...silencing our public environment is the acoustic equivalent of painting in black..."
-Max Neuhaus[61]

Chapter Two will focus on the early lives and careers of Murray Schafer and Max Neuhaus. This will foster a foundation before leading into Chapters Four and Five, which will analyze their works dealing most pertinently with noise. This chapter will focus primarily on the overlapping themes that occurred over the course of these two contemporaries, born a few years apart, working in major experimental circles, even though they never met or kept acquaintance. Primary source documents will be used throughout. These include writings regarding their work and career by the artists, as well as analyses of two experimental works by each artist from around 1968: Schafer's *Epitaph for Moonlight* (1968) and Neuhaus's performance of John Cage's *Fontana Mix – "Feed"* (1965-1968). In addition, we will consider some similarities and differences in their ideas leading up to Neuhaus's "Listening Walks" and Schafer's "Soundwalks."

[59] John Cage, The Future of Music: Credo," *Silence* (Wesleyan), 3.
[60] Adams, *R. Murray Schafer* (Toronto, 1983), 22.
[61] Neuhaus, "BANG, BOOooom, ThumP, EEEK, tinkle," *New York Times* (December 6, 1974).

During the early 20th century, definitions of noise within western art music have varied from the futurists to John Cage. Futurist composers and artists glorified the industrial sounds from their time and encouraged others to take part in the new sonic experiences, as explained in Filippo Tommaso Marinetti's **"**Futurist Manifest" from 1909. In the book, *Noise, Water, Meat: A History of Sound in the Arts*, Douglas Kahn sees noise being important for the European avant-garde. Kahn discusses figures like Russolo and Marinetti, not just because their Futurist philosophies connect to machines and commonplace objects, rebelled against the past, and could be associated with war or brutal events, but because noise dealt with simultaneity; events, people, emotions, ideas, and more all happening at the same time.[62] There was an obsession with anything involved with industry and violence, speed, machinery, and this technology's relationship with humanity.[63]

In *L'arte dei rumori* (The Art of Noises, 1913) Russolo argued for all noises to be incorporated into music, regardless of their dissonance/unpleasant associations.[64] He wanted musicians to "enlarge" and "enrich" the field of sound by replicating the infinite timbres heard in noises, freeing themselves from musical traditions and harmonies.[65] Futurism as an artistic movement, while initially Italian, influenced others, like the French and Russian avant-garde. Futurist ideals involving any sound being compositional

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[62] Douglas Kahn, *Noise, Water, Meat: A History of Sound in the Arts*, (MIT Press: 2001), 51.
[63] Marjorie Perloff, *The Futurist Moment* (The University of Chicago Press, 1986). While Marinetti was the catalytic for Futurist composers, others, like Francesco Balilla Pratella and the artist Luigi Russolo were heavily involved
[64] Luigi Russolo, *The Art of Noises*, trans. Barclay Brown (Pendragon Press, 1986).
[65] Russolo also invented several instruments called *intonarumori* (noise machines), which included quarter-tones, metallic sounds, etc.

materials and their use of technology within compositions, connect to Cage and composers associated with *musique concrète*. Not only was Edgard Varèse an admirer of Futurism, but American composers such as George Antheil and Leo Ornstein championed their ideas as well. One may argue that many extended techniques and experiments from the 20th century, such as prepared piano and graphic notation, would not have been possible without the Futurist influence.

By the 1950s, advances in electronic tape allowed for further sonic explorations made by many composers, especially Cage.[66] The experiments of these decades enabled him to rethink how composers could approach the musical arts. Cage's definition of music, sound, and noise changed throughout his lifetime, but in his 1937 "The Future of Music: Credo" he wrote on the incorporation of noise within music as seen below:

> I believe that the use of noise to make music will continue and increase until we reach a music produced through the use of electrical instruments which will make available for musical purposes any and all sounds that can be heard…Wherever we are, what we hear is mostly noise. When we ignore it, it disturbs us. When we listen to it, we find it fascinating.[67]

By the end of his life in 1992, he stated:

> They say, "you mean it's just sounds?" thinking that for something to just be a sound is to be useless, whereas I love sounds just as they are, and I have no need for them to be anything more than what they are. I don't want them to be psychological. I don't want a sound to pretend…I just want it to be a sound.[68]

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[66] Gascia Ouzounia, "Sound installation art: from spatial poetics to politics, aesthetics to ethics," *Music, Sound and Space: Transformations of Public and Private Experience* (Cambridge, 2013), 89
[67] John Cage, The Future of Music: Credo," *Silence* (Wesleyan), 3.
[68] Cage, 1992.

I would argue that Cage saw sound, noise, and music as fluid based upon artistic intention.[69] Additionally, this resonates with Schafer's concern to listening to sounds as they exist within a given environment, not wanting to pretend a sound might have any additional psychological (or sociological?) implications; it is, rather, just a sound. This is complicated, however, when we consider Schafer's concept of modifying soundscapes, which will be discussed more in Chapter Three. Further, Chapters Five and Six, will consider how the mere act of walking (and listening) to an environment is laden with meaning.

R. MURRAY SCHAFER (b. 1933)

Schafer was born on July 18, 1933 in Sarnia, Ontario. His parents, both amateur pianists, raised him in Toronto. As a boy, Schafer suffered from glaucoma and had his eye removed after two unsuccessful operations. Schafer's respect for the visual may help explain his joy of painting and drawing (and later pictorial notation); in fact, he originally wanted to go to school for the visual arts. He took piano lessons and sang in boys' choir under the direction of John Hodgins, who briefly taught him organ lessons. Schafer always seemed to have a challenging time making good grades in school. Despite this, as a teenager he became very interested in playing and coaching football, reading literature, and studying music theory, and listening to Beethoven. It was through teacher John

[69] This dissertation does not spend a great deal of time discussing works by Cage regarding noise and fluidity. There are dozens of Cagean examples that could have been included in this Schafer and Neuhaus project (perhaps: *49 Waltzes for the Five Boroughs*, 1977; *Roaratorio*, 1979, etc.).

Weinzweig that Schafer became interested in composing and studying the music of Stravinsky, Schoenberg, Bartok, and Varèse.[70]

With a running record of unruly behavior from high school, Schafer was ineligible for most college programs, but he was able to enroll at the Artist Diploma Course at the University of Toronto's Royal College of Music in 1952. There, he studied piano with Alberto Guerrero (who introduced him to French culture and "Les Six") and musicology with Arnold Walter.[71] His studies were brief because in his second year, he was expelled for insulting instructors and refusing to apologize in writing. This resulted in a stint in Europe, where he studied music at the Vienna Academy in 1956. As this was the bicentennial of Mozart's birth, this meant Schafer heard very little music by Schoenberg or Berg. He turned his sonic interests to medieval music and while in Vienna composed his *Minnelieder*, which he considers his first work of substance. While in Austria, he read a great deal of German literature, especially E. T. A. Hoffmann (resulting in his later book, *E.T.A. Hoffmann and Music* from 1975).[72] Schafer also became interested in Bauhaus, Walter Gropius's views on movement and the viewer in space, and Paul Klee's "roots in German romanticism, a love of nature, and the role of subconscious."[73]

While in Europe, Schafer traveled to the Balkans and became interested in communism and folk music. There, he established his anti-capitalist and commercial

[70] Stephen Adams, *R. Murray Schafer* (Toronto, 1983), 8.
[71] Schafer composed *In Memoriam* for Guerrero when he died in 1959. Schafer's first major work, the *Harpsichord Concerto*, was composed with his harpsichord teacher, Greta Kraus, in mind.
[72] Adams, 10.
[73] Ibid.

beliefs, concepts that would be important in his later writings on 20th century and Canadian music.[74] From 1956 to 1961, Schafer composed in various European cities and earned money by working as a freelance journalist. He married his Canadian classmate and mezzo-soprano, Phyllis Mailing in 1960, whom he later divorced in 1971.[75] Schafer briefly took composition lessons with Peter Racine Fricker in London from 1961-62. While in England, Schafer interviewed sixteen living British composers recorded for radio, which would later become the basis of his first book, *British Composers in Interview* (1963). This project further established Schafer as a music journalist both on-air and in print writing, even directing BBC concerts.[76] He was also in contact with Marshall McLuhan, inspiring him to delve more deeply into literature, philosophy, and language.

In 1962, Schafer returned to Canada where he organized and directed the Ten Centuries Concerts and was later an artist-in-residence at Memorial University. At Memorial, Schafer composed and gave concerts of his works, but also created a concert series including music by Canadian and contemporary composers. He was creating these concerts during the same years the Canadian Music Centre and other groups wanted to expand knowledge about Canadian and Contemporary music. While at Memorial, Schafer stated:

> It is the duty of teachers to open this unlimited number of doors for children. And in the process, contemporary music should be included. [The] biggest problem in

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[74] Adams, 12-13. His travels and political beliefs also inspired the composition, *Protest and Incarceration.*
[75] Ibid, 19. He remarried to Jean Reed, a secretary at SMF in 1975; later married his third wife, Eleanor James.
[76] Stephen J. Adams, “Schafer, R. Murray." *Oxford Music Online.* http://www.oxfordmusiconline.com.ezproxy.uky.edu/subscriber/article/grove/music/24738 (Accessed November 19, 2015).

> the way of building up student interest in this sort of fare is the prejudices of the teachers."[77]

In his biography on Schafer, Steven Adams connects Schafer's empathy and care for the student to his own misunderstandings with his teachers growing up. Schafer wanted to be a better teacher than the teachers who discouraged him from learning. He felt a good teacher would always produce in good students. Adam's further connects Schafer's sympathies to his interest in Paul Klee, the obsession with children's thoughts and perception of art corresponded to Schafer's exercises and compositions for children. He stayed at Memorial until 1965 when he joined the communications faculty at SFU, working there until 1975.[78] SFU was a relatively new school open to innovative pedagogies and Schafer was an excellent fit for their needs. While there, he continued writing on and thinking about music education. He created activities that focused on the creative process of listening and sonic awareness**,** activities, and exercises that are comparable to Cagean concepts. Schafer taught music classes centered around his exercises and pamphlet on *Ear Cleaning*. It was in the late 1960s that he also offered the first course on environmental sounds and noise pollution, which I will discuss more in Chapter Four.[79]

Throughout his career, the natural world inspired Schafer to create musical compositions. In this pursuit, he consistently used a combination of graphic, text, and traditional notation. Schafer's experimentation with notation as well as his interest in sounds as they occur within a specified environment corresponds with the trends of his

[77] Adams, *R. Murray Schafer*, 22.
[78] Ibid.
[79] Ibid, 26.

era and are in line with other contemporary composers such as Christian Wolff, Pauline Oliveros, and Dick Higgins. Schafer's work *Epitaph for Moonlight* (1968), an experimental graphic score, derives from his interest in the environment, how students listen, and how students might recreate nature sounds. In 1966, Schafer asked a group of eleven-year-olds to make up words that resemble the sounds of moonlight, which became the basis of the work's text. These words included *"nu-yu-yul, noorwahm, maunklinde, malooma, lunious, sloofulp, shiver glowa, shalowa, sheelesk, shimonoell, neshmoor."*[80]

Interested in helping the student explore their creative possibilities, Schafer used these words to compose the indeterminate work, *Epitaph for Moonlight*. He used indeterminacy to help challenge how the students listen and absorb sounds. The work was intended for a youth choir, but may also include a percussion to accompany the choir: glockenspiel, metallophone, vibraphone, triangle, bells, and cymbals. The allowance of these percussion instruments connects to the effects of the moon, with the intention that the vibrations of these instruments would paint a picture of the moon illuminating. This connection to the moon serves as a kind of programmaticism and theatrics, which may be seen in many of Schafer's pieces.[81] Over the course of his career, Schafer showed an interest in glissandi, extended range and extended vocal techniques, the acoustic exploitation of space, electronic sound, graphic notation, and indeterminacy.

[80] Schafer has written many vocal works that use Sanskrit, ancient Persian, Native American dialects, etc., frequently featuring obscure, ancient, or invented languages. See: *Magic Songs*, *Winter Solstice*, and *Sun*.
[81] Most of Schafer's pieces are inspired by literary, philosophical, mythological, or other extra-musical sources.

Epitaph consists of seven rehearsal sections (labeled A-G) and requires at least four singers from each SATB part (needed 16 singers in total, see Figure 2.1). Schafer provides the performers with a timestamp at the bottom of the page to let them know how long each section should be. In two instances (pages five and ten), he provides moments of metered gestures (both in 4/4). Throughout the piece, each pitch is determined by the previous pitch. The work begins with a soprano singing a "medium high note ad lib" on a hum. This is to be followed by each singer entering a whole step below the voice that entered right before them.[82] The dynamics (crescendos and decrescendos) of the second page are seen through the widening and thickness of each singer's pitch. Breath marks are indicated so that each singer is not breathing at the same time, rather, the music is continuous. A crescendo in all voices builds to the "B" section of the piece, where everyone glissandos down/up to sing in unison with whatever pitch Tenor #4 is singing. Schafer does advise on vocal articulation (words that should be hummed, sung, whispered, etc., see Figure 2.2). The piece ends similarly to how it began with each singer moving down by two semitones, but with very quiet dynamics that fade to silence. Throughout the work, the optional percussive instruments are given gestures to play, sometimes with instruction on which instrument plays and sometimes not. Schafer does not give specific pitches for the percussionist to play, just gestures with specific areas to align with the singers.

[82] R. Murray Schafer, *Epitaph for Moonlight*, (Berandol Music Ltd., 1969).

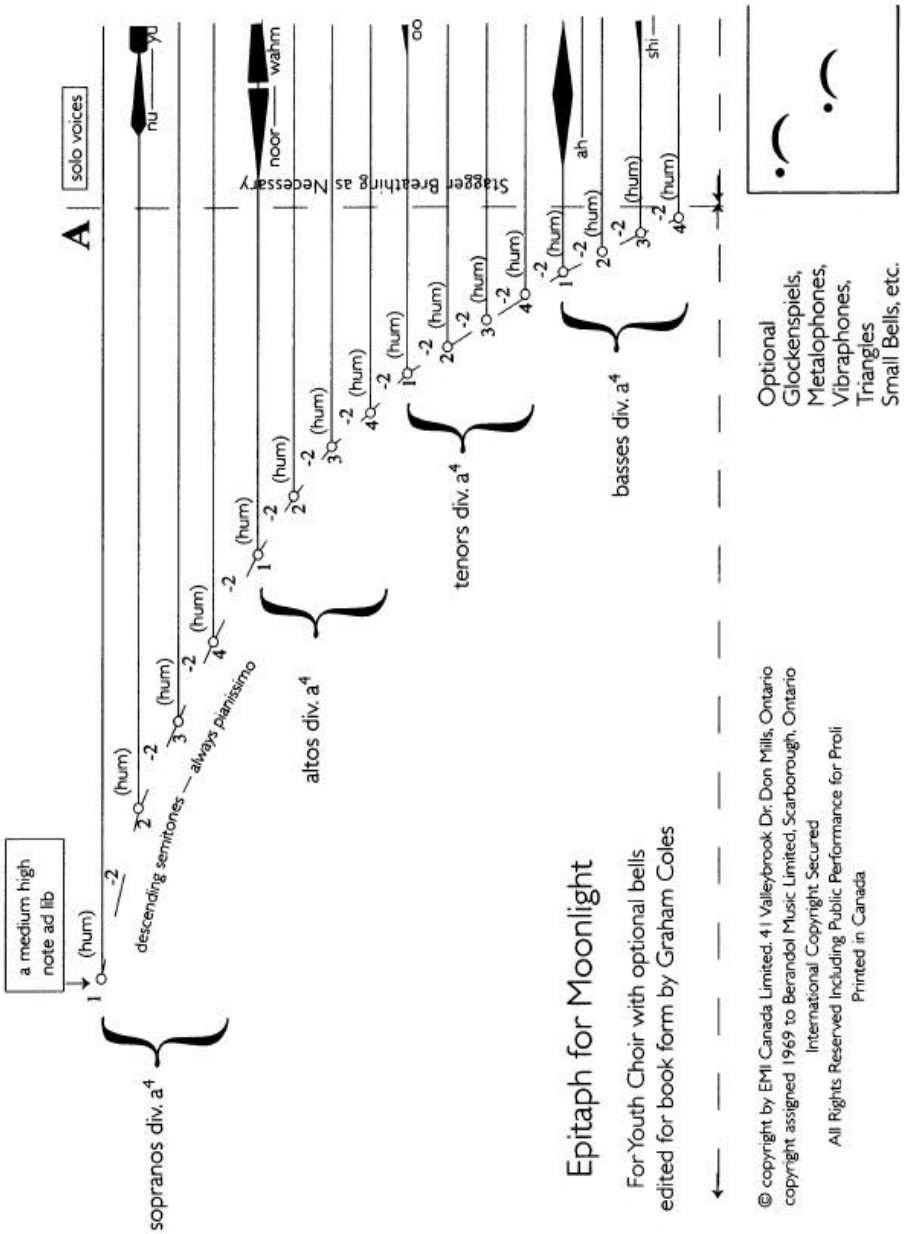

Figure 2.1: Schafer's *Epitaph for Moonlight*, first page[83]

[83] R. Murray Schafer, *Epitaph for Moonlight*, 1969. Permissions from the Canadian Music Centre (CMC).

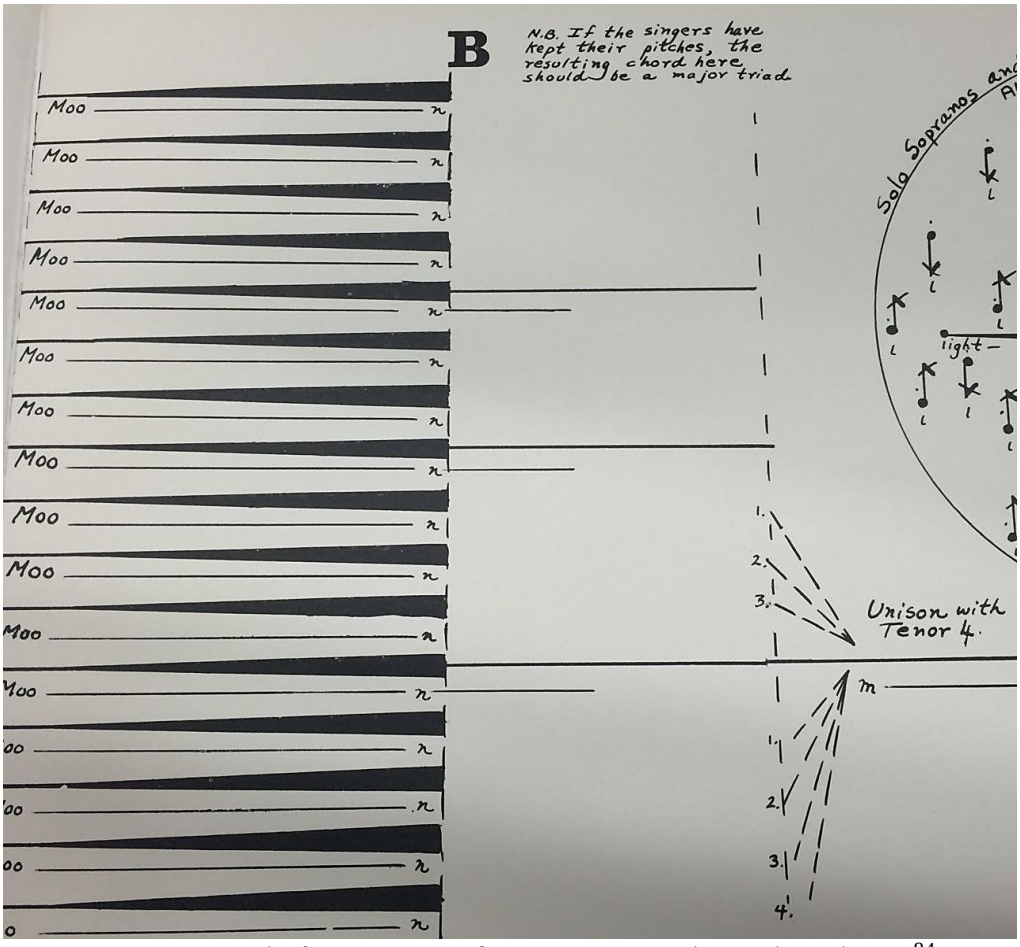

Figure 2.2: Schafer's *Epitaph for Moonlight*, rehearsal mark "B"[84]

[84] Schafer, *Epitaph for Moonlight*. Permissions from the Canadian Music Centre (CMC).

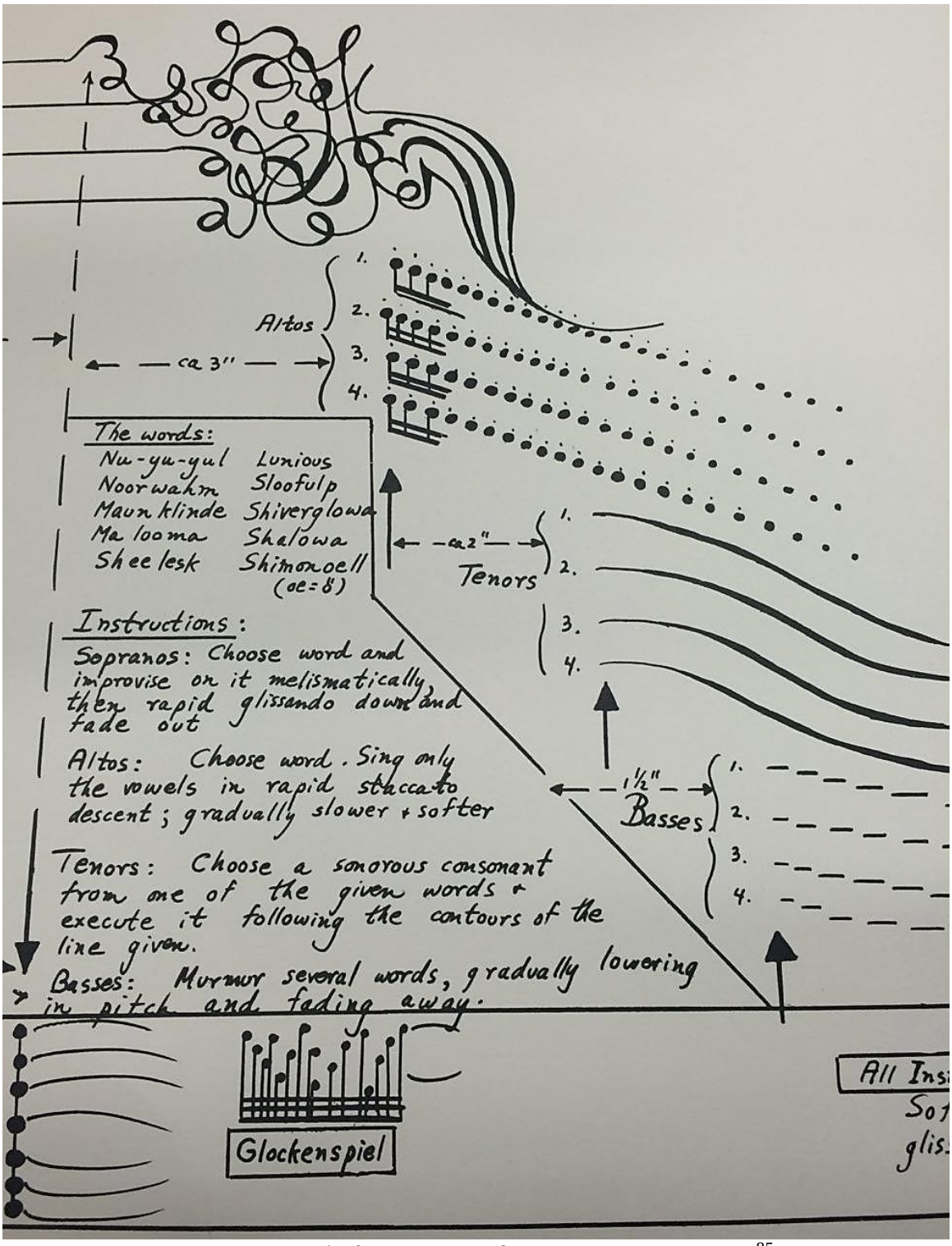

Figure 2.3: Schafer's *Epitaph for Moonlight*, page nine[85]

[85] Schafer, *Epitaph for Moonlight*. Permissions from the Canadian Music Centre (CMC).

Schafer uses graphic notation to allow for anyone to perform his work, regardless of their experience with music notation. This connects to Schafer's music education background; the piece being originally written for middle school or high school students. In the notes to *Epitaph for Moonlight*, Schafer wrote: "The score is written graphically and so does not require a knowledge of conventional musical notation."[86] The accessibility of the score resonates with Pauline Oliveros's inclusive philosophies seen in *Sonic Meditations*. In introduction to *Sonic Meditations,* she addresses the performer/participant and like Schafer, insinuates a background in music is not necessary:

> No special skills are necessary. Any persons who are willing to committee themselves can participate…Music is a welcome by-product of this activity.[87]

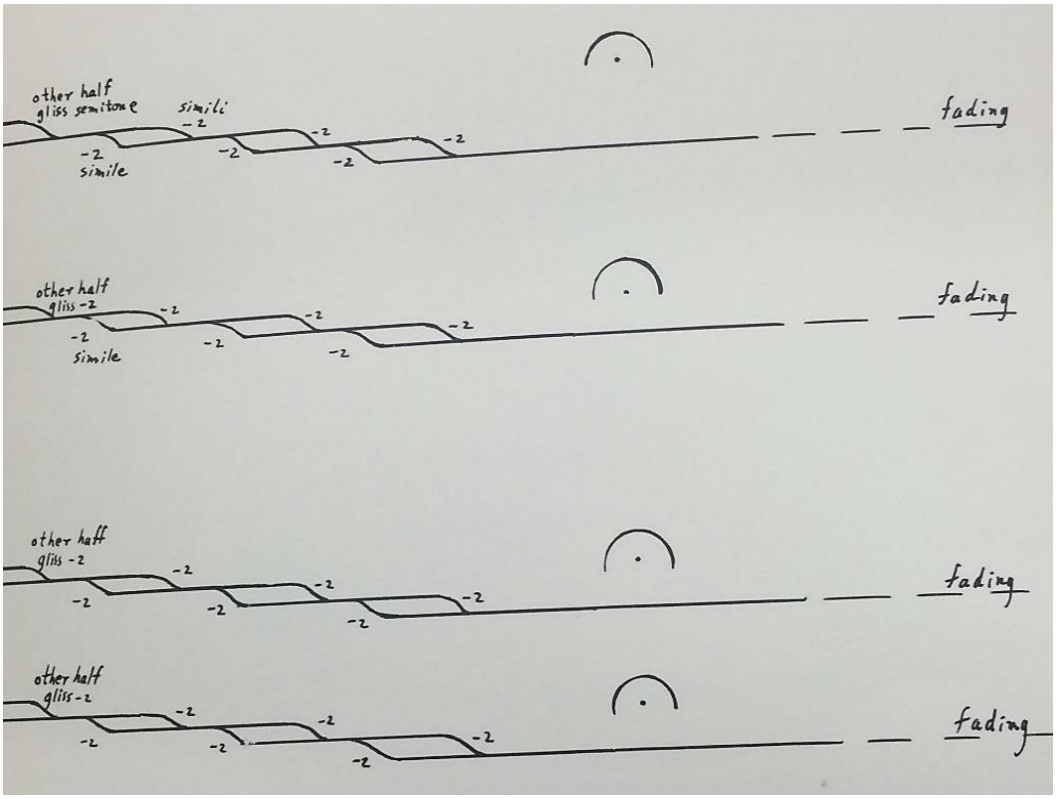

Figure 2.4: Schafer's *Epitaph for Moonlight*, ending[88]

[86] Schafer, *Epitaph for Moonlight*.
[87] Pauline Oliveros, *Sonic Meditations*, (Smith Publications, 1974).
[88] R. Murray Schafer, *Epitaph for Moonlight.* Permissions from the Canadian Music Centre (CMC).

This emphasis on "any ability" connects to his sound exercises discussed further in Chapter Three. Schafer's graphics allow for quick comprehension from the viewer as well as quick expression of musical ideas. Schafer spoke about how less time should be spent on notation in the classroom and instead more time should be spent on making music:

> When time is precious…most of it should not be spent on the development of music reading skills…what we need is…a notational system…that the class could immediately embark on the making of live music. Several of my own graphic scores are engagements with this problem.[89]

In his book, *When Words Sing*, Schafer discusses three kinds of graphic scores to be used in the classroom:

1. **Indeterminate Score**, where aspects of the piece are left to the performer to determine (Ex: *Epitaph for Moonlight*)
2. **Action or Picture Script**, which uses graphics to give emotional shape and/or musical gesture (Ex: *Minimusic*)
3. **Character Sketch**, which gives general characteristics of a piece, but the rest us up to the performer (Ex: *One Tone* exercise[90])

Schafer's categories for various kinds of graphic scores may be compared to Virginia Anderson's categories seen in her article, "The Beginnings of Happiness: Approaching Scores in Graphic and Text Notation." Anderson discusses two types of graphic notation: symbolic and pictorial notation. Symbolic graphic scores are "to be read like written language or common-practice Western notation" and "connect elements to sounds syntactically."[91] Anderson uses Earle Brown's *Four Systems* as an example of

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[89] L. Brett Scott, "The Choral Music of Raymond Murray Schafer: Insights and Influences," *The Choral Journal*, Vol. 48, No. 2 (August 2007), 43.
[90] *One Tone* is a great example of this if we consider Schafer's text exercises within the graphic scope.
[91] Virginia Anderson, "The Beginnings of Happiness: Approaching Scores in Graphic and Text Notation," (*Sound & Score: Essays on Sound, Score, and Notation* edited by Paulo de Assis, et al. Leuven University Press, 2013), 131.

symbolic graphic score. Pictorial graphic scores "do not have a linear relationship between score symbols and sound; the performer "plays" the score the way a viewer "reads" an artwork.[92] Anderson uses Cornelius Cardew's opera, *Schooltime Compositions*, as an example of a pictorial graphic score. Anderson also discusses verbal and instructional text notation as well as works that use a combination of notational techniques. Most of Schafer's graphic scores use a combination of pictorial, symbolic, text, and traditional notations. For the sake of this paper, I would argue *Epitaph for Moonlight* is more in line with Anderson's symbolic graphic score since it is read like a western score and all aspects are ordered to create sounds that symbolize the moon.

Schafer's additional article, "Graphics of Musical Thought," continues the discussion of graphic notation as freedom from the "increasingly finical notations of the serialists" that objectify music.[93] Schafer's notations allows for more textural options and gives the performer liberties while also given a sense of purpose by Schafer. He uses graphics to enhance the sound and music, usually programmatically, which differs from Cage since Cage was not interested in programmaticism. Cage even rejected the expressive function of music when he said: "The highest *purpose* is to have *no purpose* at all."[94] Like Cage, however, Schafer also experimented with theatrical works and the ideas of merging art in life in works such as *Patria*, and Schafer even praised a "situation in which art and life would be synonymous."[95] It is worth considering Schafer's place in

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[92] Anderson, 132.
[93] Schafer, "The Graphics of Musical Thought," in *Sound Sculpture: A Collection of Essays by Artists Surveying the Techniques, Applications, and Future Directions of Sound Sculpture*, ed. John Grayson, (Vancouver: Aesthetic Research Centre of Canada, 1975), 99-125.
[94] John Cage, *Silence: Lectures and Writings*, (Wesleyan, 1961), 154.
[95] Schafer, *Creative Music Education*, 233.

Canadian music during the time of these works. The modern and avant-garde framework before him within the academic Canadian music scene was primarily concerned with Stravinskian neo-classicism and serialism through the 1960s. Schafer stands out as a composer experimenting with ways of notating music, producing sounds and shifting attention to listening, as George A. Proctor points out in his book on Canadian music from the 20th century.[96]

Schafer was not the only person fascinated by the moon when he was composing *Epitaph*. This work was completed around the time NASA was preparing their lunar landing with the Apollo 11 mission.[97] Soon to be conquered, the moon's attainment was in question. What was once untouchable (space) was now a possibility (space-travel). When discussing *Epitaph* in his book *When Words Sing* (1970), Schafer includes the first line of Joseph Hilaire Belloc's poem, *The Moon's Funeral*: "The moon is dead, I saw her die."[98] Here, Schafer has written a musical elegy for the death of the moon and its moonlight. Is this a foreshadowing of Schafer's concern with nature's wellness and the death of Mother Earth? The work is full of mysticism, yet also the death of mystery and mysticism since humans were able to conquer it. Chapter Three will discuss in more details Schafer's emphasis on environmentalism, especially in regard to noise, as well as

[96] George A. Proctor, *Canadian Music of the 20th Century* (University of Toronto Press, 1980).
[97] The spaceflight that carried Neil Armstrong and Buzz Aldrin landing the lunar module, *Eagle*, on July 20, 1969.
[98] Schafer, *When Words Sing* (Reprinted in *The Thinking Ear: Complete Writings on Music Education*, Arcana Editions, 1987), 220. *When Words Sing* focuses primarily on the connection between experimental music and words or vocables. See also the liner notes for *Epitaph* in: *Ovation Vol. 2: Canada Music*, CBC Records, 2002, compact disk.

the work his World Soundscape Project did to educate others about noise pollution and noise abatement.

MAX NEUHAUS (1939-2009)

Max Neuhaus was born on August 9, 1939 in Beaumont, Texas. He came from a long line of highly educated men from various universities in science, engineering, or architecture.[99] Neuhaus's mother, Harriet Ocker, came from a farming family that was very musical and was an amateur pianist with perfect pitch.[100] Neuhaus's family lived in Port Arthur, Texas while his father worked for the Texas Company (Texaco) when Neuhaus was born.[101] His older sister of four years, Laura Neuhaus Hansen, described him as a "purposeful child" who liked sounds and percussive noises.[102] When Neuhaus was just a few years old, the family moved to Pleasantville, NY and during sixth grade, he began playing drums in school. During middle school, Neuhaus took jazz lessons from a black musician named 'Sticks' Evans in Harlem. He played in school jazz bands and with neighborhood groups until his family moved back to Houston in 1955.[103]

After graduating from high school, Neuhaus enrolled at the Manhattan School of Music where he would pursue a Bachelors and Masters in Music, concentrating in percussion performance.[104] He began studying with Paul Price and regularly performed

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[99] Megan Murph, "Max Neuhaus and the Musical Avant-Garde," Master's Thesis, Louisiana State University, 2013. http://etd.lsu.edu/docs/available/etd-05302013-132131/unrestricted/Murph.Thesis.pdf (Accessed February 7, 2017).
[100] Laura Hansen interviewed by Megan Murph, Cashiers, NC, June 11, 2012.
[101] "Background" from the Max Neuhaus Estate Website, http://www.max-neuhaus.info/soundworks/vectors/performance/background (accessed March 23, 2017).
[102] Hansen interview.
[103] Murph, 11.
[104] "Background" from the Max Neuhaus Estate Website.

with the school's percussion ensemble as well as Paul Price's Percussion Ensemble and the Paul Price Percussion Quartet. The percussion ensembles at Manhattan performed contemporary compositions regularly, often premiering works by composers like Lou Harrison, Henry Cowell, and others. While in school, Neuhaus was also able to meet many other composers outside of those for whom the school's ensembles premiered. He recalled meeting John Cage in 1958 and later meeting Morton Feldman and Earle Brown. It was during these years he claimed he grew out of his fascination with being a famous jazz drummer. He realized experimental works for one percussionist did exist and he was determined to perform them.[105]

Neuhaus graduated from Manhattan School of Music in May 1962. Following graduation, he attended the Darmstadt International Summer Courses for New Music from July 7-20, 1962. It was during this time he became more engaged with experimental music and performing on a national and international level, making contacts, and collaborating with some of the most noted composers of his time. On August 15, 1962 Neuhaus was involved in the Fluxus Festival of New Music, showing his growing interest in American experimentalism while still performing solo percussion works as much as possible. During the fall of 1963, he performed in two concerts from a larger series at the Judson Hall and the Pocket Theater intended to raise money for the Foundation for Contemporary Performance Art.[106] At the Pocket Theater concert (August 1963) he premiered Joseph Byrd's *Water Music*, a piece for percussion and electronic tape, which

[105] "Background" from the Max Neuhaus Estate Website.
[106] WBAI Program Folio Volume 4, no. 20 (September 30 – October 13, 1963) from Pacifica Radio Archives, http://archive.org/stream/wbaifolio420wbairich#page/12/mode/2up (accessed March 23, 2017).

was dedicated to Neuhaus.[107] The following year on January 28, 1964, Neuhaus performed alongside Stockhausen and David Tudor in a concert at the St. Sulpice Library in Montreal. All works heard were by Stockhausen, with Neuhaus performing *Zyklus*. While performing alongside Stockhausen, Neuhaus was also involved in two concerts that Action Against Cultural Imperialism (AACI) protested. AACI was an Anti-Stockhausen, Anti-Fascist initiative led by Henry Flynt, a concept artist associated with the Fluxus group.[108] Stockhausen had remarked in a 1958 Harvard University lecture that black music [jazz] was primitive, barbaric, and garbage.[109] Such racial statements led the AACI group to boycott Stockhausen performances and many other European-North American artists that AACI felt represented the elite ruling-class.[110] Neuhaus was friends with many of the AACI protesters, joining in with their protests after his own performance of *Zyklus*. That summer, Neuhaus gave his first solo recital at Carnegie Hall on June 2, 1964. His debut featured works by Cage, Stockhausen, Brown, and others. [111] The following year, Neuhaus was named a Young Concert Artist, allowing the foundation to provide him with management services, publicity materials, and promotion. This included being featured as soloist and chamber musician at the ONCE Festival held in Ann Arbor, Michigan, concerts at Judson Church, another Carnegie Hall performance, and a solo tour of Europe.[112]

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[107] Ross Parmenter, "Music Mechanical…: A Self-Playing Percussion Assemblage Performs at Pocket Theater Concert," *The New York Times* (accessed March 23, 2017).
[108] Hannah Higgins, *Fluxus Experience*, (University of California Press, 2002), 75.
[109] Piero Weiss and Richard Taruskin, ed, "Music and the 'New Left,'" *Music in the Western World: A History in Documents*, 2nd edition (Schirmer, 2007), 463-465.
[110] Ibid.
[111] Murph, 27.
[112] Ibid, 28.

By 1966, Neuhaus became less interested in playing others' works and more interested in creating his own listening experiences; plus, he was annoyed with lugging around 1100lbs of equipment. Thus, his transition into his sound art career began. Neuhaus was involved in a film by Phill Niblock (b. 1933) entitled *Max (1966-68).*[113] This film, which was edited by David Gearey, is an "image collage film/portrait of Max Neuhaus, with a collage sound track by Max Neuhaus." The soundtrack uses "a mixture of sounds from *Super Z* (four simultaneous versions of Stockhausen's *Zyklus*) and *Max-Feed*."[114] Neuhaus would return to the stage for a final solo recital at Carnegie Hall on January 8, 1968, which he entitled "Three Hours of Sound Construction."[115] No program was given out during the performance, but as the title suggests, this concert consisted of sounds constructed by Neuhaus, on equipment he had to finagle or even design in some way, allowing us to view him as the performer as well as the composer.[116] He released a Columbia Masterworks album in 1968 produced by David Behrman titled, *Electronics & Percussion: Five Realizations by Max Neuhaus*. This album was almost a "greatest hits" of his percussion performance career, with works by Cage, Brown, Stockhausen, and Feldman. Although many interpret Neuhaus's Columbia LP as his last output as a percussionist, in reality, his final gesture was in the 1971 publication of his *Graded Exercise Readings for Four Mallets*. His book, which was one of the first exercise books

[113] Phill Niblock is a composer, filmmaker and current director of Experimental Intermedia. He lived in New York City during the same time as Neuhaus and was in acquaintance with many of the same musicians and artists.
[114]Phill Niblock, "Max (1966-68)" from Six Films by Phill Niblock, edited by David Gearey, DVD Die Schachtel, 2009.
[115] Prior to his final Carnegie solo recital, Neuhaus created these sound works: *Listen* series (1966-76), *Public Supply* series (1966-70), *American Can* (1966-67), *By-Product* (1966-67), *Fan Music* (1967), and *Drive-in Music* (1967-68).
[116] His Max-Feed machine had just been produced the following year with MassArt.

published for four mallets, provides 128 exercises divided by level of difficulty into four groups of thirty-two exercises.[117]

Leading up to his 1968 LP release, Neuhaus had given numerous performances of John Cage's *Fontana Mix,* using acoustic feedback as the basis for generating sound and giving the additional title to his realization, "Feed." A recording featuring four performances of "Feed" was distributed in 1966 by Mass Art Inc., an art company operated by artist Philip Orenstein and Sujan Souri.[118] The company's vision was to sell "gallery art in the supermarket." Inspired by Fluxus concepts and the accessibility of Pop Art, Orenstein and Souri began mass producing art, primarily inflatable pillows and furniture by Orenstein.[119] They did, however, contract three records to produce by: Terry Riley, Allan Kaprow, and Max Neuhaus. In a conversation with me, Orenstein explained meeting Neuhaus through circles of friends, like Phil Corner and Cage. He said:

> Max Neuhaus, you know, was a percussionist. My wife, Joyce Ellin Orenstein, is a composer, so we went to a lot of a contemporary music concerts in the 1960s, and Max stood out, so we were aware of him. When Max did the Mass Art record, he used the recordings of four *Fontana Mix-Feed* concerts using timpani, loudspeakers, and feedback. My wife and I went to his performance of *Fontana Mix-Feed* at The New School. John Cage attended and was wild about it. It was one of the loudest concerts we had ever been to. Max had several timpani with contact mics pounding on the them. At the end, Cage stood up and cheered.

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[117] Max Neuhaus, *Graded Reading Exercises for Four Mallets*, New York: Music For Percussion, Inc., 1971. (Publication now owned by Colla Voce Music, Inc. of Indianapolis, IN).
[118] Max Neuhaus, *John Cage's Fontana Mix-Feed*, ©1966 Mass Art Inc., M-133. The recording contains four performances of the work in Chicago (Apr 13, 1965), New York (Jun 4, 1965), Madrid (Nov 27, 1965), and New York (Dec 1, 1966).
[119] Interview with Phil Orenstein (April 23, 2018).

When one listens to the recording, you hear two timpani and electronic feedback, but it would have been very loud in the concert hall. Neuhaus placed contact mics on the skins of the timpani, which were placed facing two large loudspeakers, allowing the mics to move around freely, as seen in Figure 2.5.

Figure 2.5: Max Neuhaus performing *Fontana Mix-Feed*,
New School for Social Research Auditorium on June 4, 1965[120]

In a review of Neuhaus's April 13, 1965 University of Chicago performance, critic Donal Henahan described the sounds as noise:

> "The noise was literally painful and, for many in the audience, unbearable in volume, pitch and duration. Entitled *Feed*, and based on Cage's *Fontana Mix* this gem of musical ideation involved putting small mikes on top of tympani and letting the loudspeakers excite them into noise by means of feedback. It was like the soundtrack from World War II, with original cast. The whole night was great, High-Camp fun, but Mr. Cage's *Silence* can be more sincerely recommended."[121]

[120] Pictures from CD Liner Notes: Max Neuhaus, *Fontana Mix-Feed: Six Realizations of John Cage*, ©2003 Reissue by Alga Marghen - Plana-N 18NMN.044.
[121] Donal Henahan, Chicago Tribune after his University of Chicago concert on April 13, 1965. http://www.max-neuhaus.info/soundworks/vectors/performance/fontanamix-feed/Fontana_Mix-Feed.pdf (Accessed May 24, 2017).

Three years later, in a review of Neuhaus's 1968 Columbia Recording of the work, critic Theodore Strongin described:

> "[The sounds] can get very, very intense, they become a searing, pealing shriek at times that feels a though it exists inside one's own head rather than out in the real world. What is sound or noise, somehow transplants the listener."[122]

Using Cage's original score, Neuhaus created loops from the sounds produced by the timpani and mics touching. He manipulated the amplifiers so that only the feedback of the loops was heard.[123] This in combination with the loudspeakers created much intensity. Neuhaus invented his own circuit to use during these performances, which he called the "Max-Feed," hence the retitling of Cage's *Fontana Mix* to *Fontana Mix-Feed*. Mass Art Inc. contracted Neuhaus to sell his circuit, which may be seen in Figure 2.6.

Figure 2.6: Images of Neuhaus's "Max-Feed"[124]

[122] Theodore Strongin, "When the Listener is Composer," *The New York Times* (June 16, 1968).
[123] Liner Notes from Max Neuhaus, *Electronics and Percussion: Five Realizations by Max Neuhaus*.
[124] Permissions from Phil Orenstein.

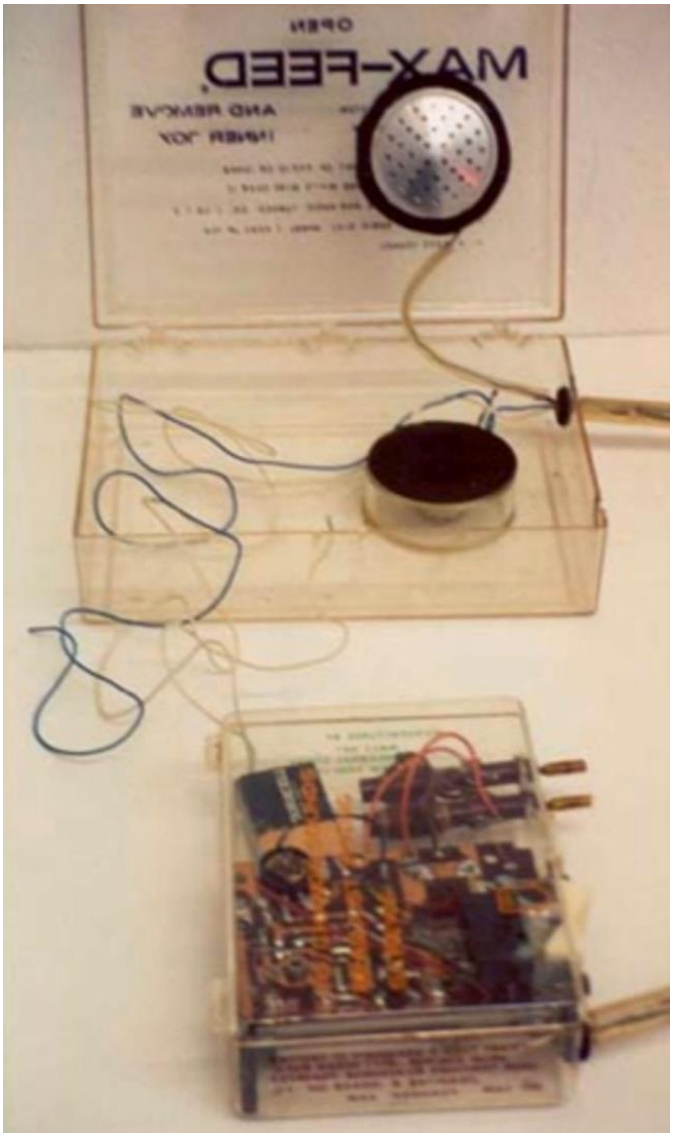

Figure 2.6 (cont): Images of Neuhaus's "Max-Feed"[125]

In addition to producing Neuhaus's record and circuit, Orenstein created the album cover for the LP, which may be seen in Figure 2.7.

[125] Permissions from Phil Orenstein.

Figure 2.7: Front and back covers Neuhaus's *Fontana Mix-Feed* album (1966), created by Phil Orenstein.[126]

[126] Album cover of Max Neuhaus, *John Cage's Fontana Mix-Feed*, ©1966 Mass Art Inc., M-133. https://www.discogs.com/Max-Neuhaus-Fontana-Mix-Feed-Six-Realizations-Of-John-Cage/master/126958 (Accessed May 14, 2018).

Orenstein recalled creating the album cover and Neuhaus inventing the Max-Feed:

> The album cover was basically a vinyl sleeve with the record inside, using the same technique we used to make [my] inflatables. My inflatables were made of two square pieces of clear vinyl silk-screened with images, which we then heat-sealed around the edges plus a valve in the center. Max's record cover was made the same way we would have made a pillow, except without the valve. The back of the cover had the directions to *Fontana Mix*. Further, Max had designed a machine he called the Max-Feed that Mass Art funded and sold. We wanted innovative or edgy art to sell at supermarkets. He got a clear, plastic box and a transistor radio and turned it into a transmitter to transmit feedback. One was to put the Max-Feed antenna over a regular radio and played the feedback at full volume. The noise could be deafening. The Max-Feed was small and very portable. The entire thing fitted in your palm.[127]

To celebrate the release of the *Fontana Mix-Feed* record and the circuit, Neuhaus arranged a concert titled "A Grand Feed." It took place on December 29, 1966 at the Mass Art Store on Canal Street, New York. The poster for the event may be seen in Figure 2.8. The concert featured six artists and musicians using the Max-Feed in varying ways. This included: Phil Corner, Al Hansen, Allan Kaprow, Alison Knowles, James Tenney, and Ted Wolff. Orenstein described a few of the artists' offerings as such:

> Kaprow had an amplifier and these very large speakers with the Max-Feed, which he put in the freight elevator of our industrial building. People waited for the elevator on one floor. When it came they got a blast of loud feedback as the doors opened. Then they would ride the elevator with Kaprow and the feedback noise. The other artists did different things with the Max Feed. Phil Corner fried some eggs, Alison Knowles made a print. The event was breaking all the norms and John Cage came and approved. Max was pretty competent with technology and a great percussionist.[128]

[127] Interview with Phil Orenstein.
[128] Ibid.

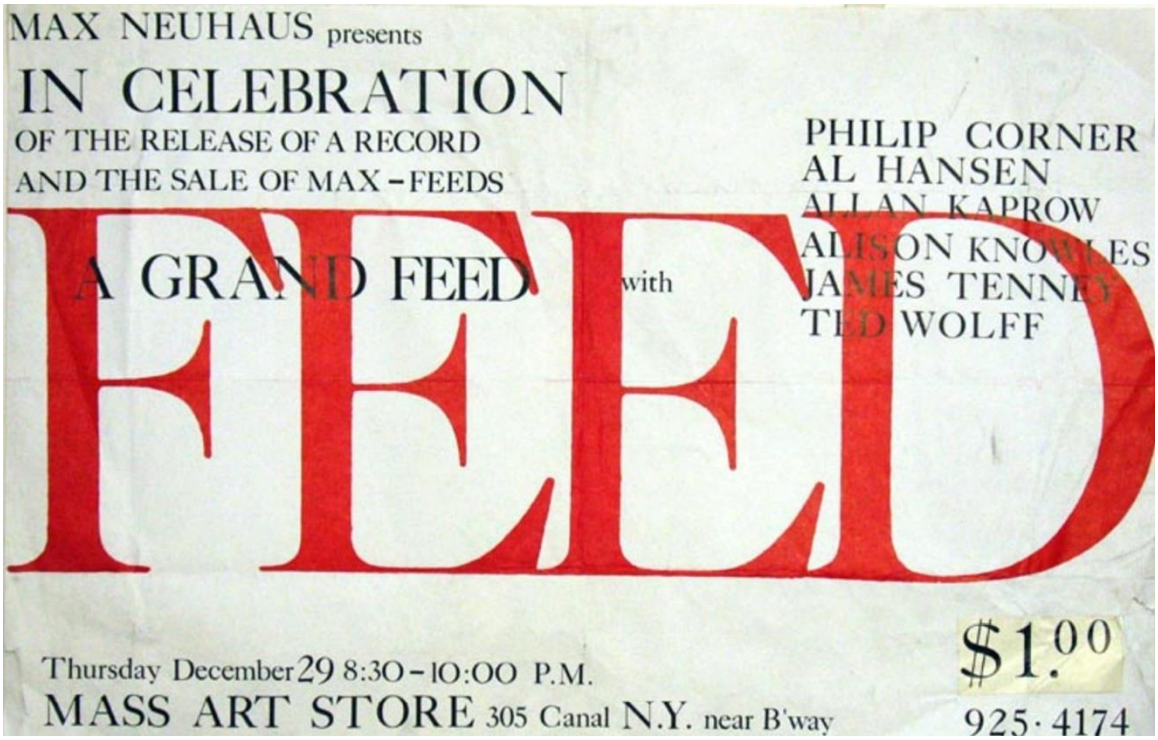

Figure 2.8: Poster for "A Grand Feed" Concert[129]

We see through his performance of *Fontana Mix-Feed* and through his circuit invention, Neuhaus was challenging his audience to listen and he wanted to take creative agency. On the afternoon of March 27, 1966, Neuhaus decided to challenge his audience to listen even further. He took them outside of the concert hall, meeting by word-of-mouth in the Lower Eastside to experience a "Concert of Traveled and Traveling Music." Neuhaus led them around this neighborhood to listen to their surrounding environment, hearing sounds from a rumbling power plant, highways, river, people in the streets, and so on. The Sunday afternoon walk concluded at Neuhaus's studio apartment, where he performed many works of his standard percussion repertoire.[130] Figure 2.8 shows the souvenir program from this event.

[129] Permissions from Phil Orenstein.
[130] Dasha Dekleva, "Max Neuhaus: Sound Vectors," MA Thesis (University of Illinois at

Neuhaus was certainly exposed to Fluxus events that involved walking and other earlier experimental works (perhaps Cage's Water Walk), that could have influenced him as well. That in combination with living in the city, being interested in sounds as a percussionist, wanting the audience to listen to the sounds deeply, and wanting to be his own creative intensity lead up to his decision to lead Listening Walks. Neuhaus saw *Listen* as his "first independent work as an artist."[131] Eventually, he stamped the participants on the hand with the word "LISTEN" instead of providing them with a program or itinerary. The piece included "do-it-yourself" versions. This involved Neuhaus printing posters or postcards with the word "LISTEN," instructing that they be placed in locations selected by the cards' recipients.[132] This version required the audience to interact with the work, selecting locations where future listeners could experience sounds. The largest version of the *Listen* series, however, was the 1974 op-ed piece. As Neuhaus saw it, "a million people" could have read the paper and been exposed to his ideas on listening and noise.[133]

Chicago, 2003), 45.
[131] Max Neuhaus, "Listen," in *Sound by Artists*, edited by Dan Lander and Micah Lexier (Toronto, Canada: Art Metropole, 1990), 63.
[132] Neuhaus, "Listen," 67.
[133] Ibid.

Figure 2.9: *Listen*, Souvenir Program, March 27, 1966.[134]

[134] *Listen*, Souvenir Program, http://www.see-this-sound.at/works/941/asset/508 (Accessed May 24, 2017). Permissions from Silvia Neuhaus.

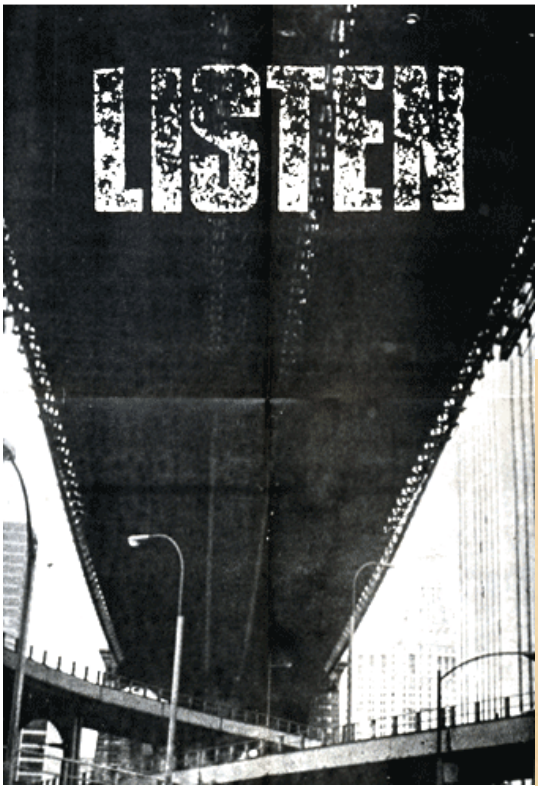

Figure 2.10 (Left): *Listen*, Poster: Brooklyn Bridge - South Street, 1976.[135]
Figure 2.11 (Right): *Listen*, Postcard, 1979.[136]

Robert A. Baron, author of the 1970 anti-noise book, *The Tyranny of Noise,* wrote to the *New York Times* in response to Neuhaus's article. Baron stated:

> Of course electronic percussionist Max Neuhaus does not like noise abatement. At one concert, he added electronic amplification 'so that not only the initial impact tore at the ears, but the echoes as well.' No wonder he would have us believe excessive noise is harmless...Sound does affect the glands and internal organs...noise irritates, disturbs the sleep stages and awakens New Yorkers...Our ears are for hearing, and it is precisely for that reason that we must fight as hard as we can to protect them from hearing loss. And one source of hearing loss, it should be noted, is amplified music.[137]

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[135] *Listen*, Poster: Brooklyn Bridge - South Street, 1976, http://www.max-neuhaus.info/soundworks/vectors/walks/T (Accessed May 24, 2017). Permissions from Silvia Neuhaus.
[136] *Listen*, Postcard, 1979, http://www.see-this-sound.at/works/941/asset/508 (Accessed May 24, 2017). Permissions from Silvia Neuhaus.
[137] Robert A. Baron, "What Noise Does to Us." *The New York Times* (December 21, 1974).

BANG, BOOooom, ThumP, EEEK, tinkle

Jean-Claude Suares

By Max Neuhaus

The popular concept of "noise pollution" is a dangerously misleading one. In reality, dangers to hearing do exist in prolonged, excessively loud sound levels. However, the residue of the idea that has ended up in the mind of the public because of misleading publicity is that sound in general is harmful to people.

A brief examination of a pamphlet, "Noise Makes You Sick," published by the Department of Air Resources of the city's Environmental Protection Agency, is typical of the literature and clearly illustrates the problem.

The first sentence, "Sound is instantly transmitted from your ears to your brain and then to your nerves, glands and organs," is of course literally true. Actually the reaction doesn't normally go as far as the glands and internal organs.

However, we are left with the impression that we have absolutely no defense against unwanted sound. This is untrue. The body has automatic reflex barriers, both physical and psychological, to deal with sounds it does not wish to react to.

The pamphlet goes on, "Any loud or unexpected sounds put your body on alert." This is true with a newborn child or in primitive societies, both of which need this reaction to survive, but certainly the modern urban dweller is not put into a state of fright (except of course when there is actual danger) very often by the sounds around him.

A human being conditions himself fairly quickly to what is "loud or unexpected" in his particular environment.

Once having "established" the impression that we are constantly in a state of "fright" though, the brochure goes on to extrapolate in august pseudo-medical terms: "Adrenalin, an energy-producing hormone, is released into your blood stream. Your heart beats faster, your muscles tense, and your blood pressure rises. Sudden spasms occur in your stomach and intestines." This finally gives the impression that every honking horn brings us a little bit closer to death.

The law defines noise as "any unwanted sound." Surely several hundred years of musical history can be of value: At the very least, they can show us that our response to sound is subjective—that no sound is intrinsically bad. How we hear it depends a great deal on how we have been conditioned to hear it.

Through extreme exaggeration of the effects of sound on the human mind and body, this propaganda has so frightened people that it has created "noise" in many places where there was none before; and in effect robbed us of the ability to listen to our environment.

Admittedly it may be necessary to oversimplify an idea to bring enough public pressure to bear on the producers of ear-damaging sounds in our environment to stop this victimization of the public. This degree of misrepresentation is not only unnecessary, but irresponsible and ultimately negative.

This present concept of noise pollution condemns all sounds by leaving, in the public mind, the impression that sound itself is physiologically and psychologically harmful.

It is this exaggerated and oversimplified concept that is doing most of the damage, not sound—damage that can and should be rectified by curtailing misleading propaganda and showing people other ways to listen to their surroundings.

Obviously we need to be able to rest from sound just as we do from visual stimulation, we need aural as well as visual privacy, but silencing our public environment is the acoustic equivalent of painting it black. Certainly just as our eyes are for seeing, our ears are for hearing.

Max Neuhaus is a composer.

Figure 2.12: "BANG, BOOooom, ThumP, EEEK, tinkle," *New York Times* (December 6, 1974)[138]

[138] Max Neuhaus, "BANG, BOOooom, ThumP, EEEK, tinkle," *New York Times* (December 6, 1974).

Notice the music Baron referred to was from Neuhaus's Cage performance. Baron's response connects to the national move towards favoring policies that would protect individuals from aural harm. Neuhaus was more bothered by the condemning attitude that all noise is "bad" than the physical symptoms that could result from too much noise. He begins:

> The popular concept of 'noise pollution' is a dangerously misleading one. In reality, dangers to hearing do exist in prolonged, excessively loud sound levels. However, the residue of the idea that has ended up in the mind of the public because of misleading publicity is that sound in general is harmful to people.[139]

Prior to writing the op-ed, Neuhaus had encountered a pamphlet created by New York City's Department of Air Recourses titled "Noise Makes You Sick," which was disseminated along the streets and subway. Subsequently, Neuhuas had submitted the op-ed titled as "Noise Pollution Propaganda Makes Noise," a tongue-in-cheek to the pamphlet. The *New York Times* undoubtedly retitled it, also identifying Neuhaus has a "composer."[140]

While Neuhaus agreed dangers to hearing could happen if one listens to excessively loud sounds at prolonged levels, he criticized the department's pamphlet for making urban dwellers afraid of their sound environment.[141] He criticized the department's definition of noise as "any unwanted sound" and supported music history's stance that human response to sound is subjective and that no sound is "intrinsically bad." He stated: "How we hear [sound] depends a great deal on how we have been conditioned to hear it." Neuhaus brushed through the quotes of the pamphlet he found oversimplified

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[139] Neuhaus, "BANG, BOOooom, ThumP, EEEK, tinkle."
[140] Branden W Joseph, "An Implication of an Implication," *Max Neuhaus: Times Square, Time Piece Beacon* (Dia Art Foundation, 2010), 59.
[141] Neuhaus, "BANG, BOOooom, ThumP, EEEK, tinkle."

or exaggerated and argued that humans have conditioned themselves to live in urban spaces. He felt the pamphlet victimized the public and caused irrational fear, which was unnecessarily irresponsible and negative.[142]

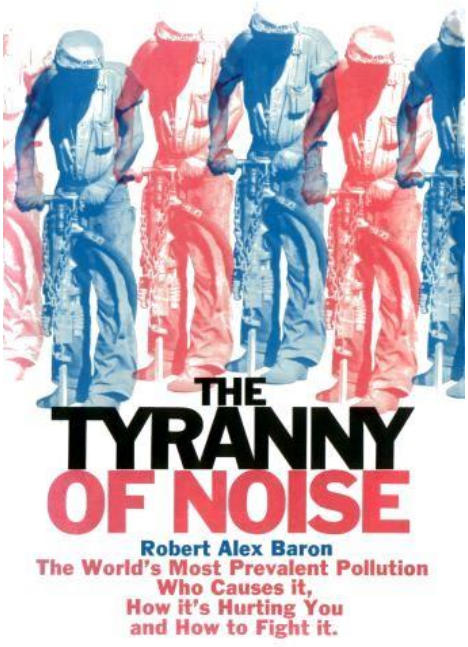
Neuhaus feared the department's attitude towards urban sounds and attempts at publicly controlling it would only force their citizens to be anti-noise as well, using the pamphlet as an example of how all noise abatement literate is iterating these ideas around sound. He concluded his article by stating, "silencing our public environment is the acoustic equivalent of painting in black,"[143] believing if the urban sounds were oppressed, the true character of the urban sonic space would be as well. This resonates with Jacques Attali's concern with the politics of noise where Attali sees noise as a social construct that became affiliated with disruption, violence, and social deviance. Our traditional musical process of controlling noise mirrors the political process of structuring society.[144] In this vein, Neuhaus's op-ed, and his *Listen* series challenges the listener to forget about the constrictions of what music or sound/noise had been before, regardless of the notions of what's "aesthetically bad," and to try to hear something new.

In his essay on the *Listen* series, Neuhaus recalled taking hundreds of students from a "university somewhere in Iowa" on a listening walk. The faculty was expecting a lecture and was outraged when Neuhaus took them out of the auditorium to walk and listen rather than give a lecture about listening. Neuhaus recalled: "A number of years later, when Murray Schafer's soundscape project became known, I am sure these

[142] Neuhaus, "BANG, BOOooom, ThumP, EEEK, tinkle."
[143] Ibid.
[144] Attali, *Noise: The Political Economy of Music*, 10.

academics didn't have any problem accepting similar ideas."[145] This statement shows Neuhaus's *Listen* series may have predated Schafer's conceptions and proves Neuhaus's awareness of Schafer's soundwalk. When I asked Hildegard Westerkamp if Schafer or herself may had been aware of Neuhaus's listening walks, she responded:

> I am familiar with Neuhaus, but I'm not familiar with his Listening Walks. I know he has done installations and things, but I'm not actually familiar with his Listening Walks…I'm pretty sure [Schafer] knew of Neuhaus, he might have known him personally, but I cannot tell you…We [in the WSP] were constantly talking about how these sound signals [sirens] function in cities and how they could be designed more effect and not as horrible and destructive to our senses. By that time, though, Schafer was already gone from Vancouver. He may have known some of this information [about Neuhaus]. I have a feeling he must have talked about this in his lectures later but I cannot actually give you an exact quote.[146]



What Noise Does to Us

To the Editor:

Of course electronic percussionist Max Neuhaus [Op-Ed Dec. 6] does not like noise abatement. At one concert he added electronic amplification "so that not only the initial impact tore at the ears, but the echoes as well." No wonder he would have us believe excessive noise is harmless.

To correct some of his more blatant errors:

Sound does affect the glands and internal organs. Tests for noise effects include urinalysis, blood pressure, galvanic skin response, pupil dilation, vasoconstriction, etc. The human fetus responds to sound stimuli.

Noise, not insidious propaganda from the Department of Air Resources, irritates, disturbs the sleep stages and awakens New Yorkers. Is it propaganda or unbearable noise that has fed the anti-jet noise movement? If human beings are capable of conditioning themselves to what is "loud and unexpected," why does Community Board No. 6 spend four years lobbying against seaplane take-off noise?

The flight-fight or startle reaction is a natural and necessary protective mechanism found in all humans. Harm from noise is not predicated on awareness, and neither is harm from cancer. (Passengers and workers in our noisy subways are in the main unaware of their exposure to destructive sound.)

Have we really lost some of the beauty of the city because air compressors now have to be muffled?

And who wants a *silent* city? Certainly not Citizens for a Quieter City, Inc., of which I am an officer.

Our ears are for hearing, and it is precisely for that reason that we must fight as hard as we can to protect them from hearing loss. And one source of hearing loss, it should be noted, is amplified music.

ROBERT ALEX BARON
New York, Dec. 6, 1974

Nicholas Bergman

Figure 2.13 (Left): Cover of Robert A. Baron's *The Tyranny of Noise*[147]
Figure 2.14 (Right): Robert A. Baron's "What Noise Does to Us"[148]

[145] Neuhaus, "Listen"
[146] Interview with Hildegard Westerkamp (October 10, 2017)
[147] Robert A. Baron, *The Tyranny of Noise*, New York: St. Martin Press, 1970.
[148] Baron, "What Noise Does to Us."

Already concerned with noise in his 1967 book, *Ear Cleaning,* Schafer offered ear training exercises to not only prepare his music students for contemporary music, but to get them thinking about the sounds they hear relating to their environment. Schafer's World Soundscape Project (hereafter abbreviated as WSP) surveyed sounds from across urban and rural areas within and outside of Canada. [149] Coming from an anti-noise approach, Schafer, with the findings of the WSP, led the publications of *The Book of Noise* in 1970 and *A Survey of Community Noise Bylaws in Canada* in 1972. *The Book of Noise* served as an introduction to noise pollution on an international level and its impact on any citizen. Like *Ear Cleaning*, *The Book of Noise* was suitable for music education and children. *A Survey of Community Noise Bylaws in Canada* served as a compendium of noise regulations from Canadian cities, with commentaries and statistical analysis to guide the reader and even offer legal advice on ways to deal with noise on a local, municipal level (discussed more in Chapter Four).

Probably most known to us and internationally recognized is Schafer's 1977 book, *The Soundscape: Our Sonic Environment and the Tuning of the World*. Through his book, Schafer examines the pre- and post- industrial soundscape, or the sounds which makeup those environments, and ways to analyze. He discusses the evolution of nature and urban sounds as well as the perceptions and ideals connected to sound and music. *The Soundscape* also addresses many issues of the electric revolution in regard to noise in the 1970s: roaring cars and aircraft, sounds of the city, etc. In *The Soundscape*, Schafer offers commentary on the soundwalk and how it differed from a listening walk:

[149] World Soundscape Project History, http://www.sfu.ca/~truax/wsp.html, (Accessed May 24, 2017).

"A listening walk and a soundwalk are not quite the same things…a listening walk is simply a walk with a concentration on listening...The soundwalk is an exploration of the soundscape of a given area using a score as a guide."[150]

This language suggests that Schafer may have been aware of Neuhaus's listening walks, although I have not been able to confirm this. Although Schafer makes a point of distinguishing listening walks from soundwalks, the two have some commonalities along with several differences. Schafer's earlier goals were to help students clean their ears from noisy, unnatural, urban sounds that were polluting the once pure environment. His concern for noise pollution and environmental awareness contrasts with Neuhaus's 1974 op-ed. While both were dealing with similar concepts and influences, the two project their responses to listening in differing ways. The listening walks that Neuhaus led, explored the environment and the physical space the sounds filled. Neuhaus embraced the urban, post-industrial sounds within his city environment while Schafer placed more emphasis on the appreciation of "nature."

URBAN SCENES

Both Neuhaus and Schafer established reputations for themselves in urban scenarios already beginning in the 1960s; Neuhaus was in Downtown New York City and Schafer was primarily in the Vancouver area (with some work across Canada including Toronto and St. John's). By the time Schafer was working at Simon Fraser University, he was connected to Vancouver until he moved to his farm north of Rice Lake in Ontario in the late 1970s. Schafer was continuously concerned with education and situated in the

[150] Schafer, *The Soundscape: Our Environment and the Tuning of Our World*, 212-213.

university in some way for the majority of his career, especially during his time leading the WSP. One fascinating aspect of the WSP is that it was able to observe the Vancouver area (and other Canadian cities) grow and change drastically, sonically as well as physically. This change certainly both inspired and scared Schafer, as Westerkamp discussed in our interview (explored in more depth in Chapter Four). In general, Vancouver placed more emphasis on creating parks and nature spaces within their city during these years (1960s-1970s) and had a different attitude toward nature than New York City. Neuhaus lived primarily in NYC during these years, which was already more developed (and likely louder) in comparison to Vancouver. In contrast to Schafer, Neuhaus never took an academic or university position but instead, financed himself as a working artist through patronage, performing, commissions, grants, etc. His network was the contemporary music and art scene of downtown NYC while Schafer's was the built around prestigious university circles of Canadian composers.

LISTENING WALKS vs. SOUNDWALKS

Both Neuhaus and Schafer led groups through environments to pay attention to the sounds around them. They referred to these activities by different names. As mentioned previously, Neuhaus's listening walks were intended to open the ears of his audience members before they listened to his Carnegie Hall performances. They were invited "word of mouth;" so those who knew about them were the ones who had the privilege of participating. The participants of his first walk in 1966 were likely close friends and collaborators of Neuhaus, people familiar with avant-garde and experimental music, eager to experience a new way of listening. We know Neuhaus expanded his

listening concept into the *Listen* series to include the public, which lasted over a decade, influencing his more reputable sound installations, and other works to follow, including the Sirens Redesign project focused on in Chapter Four.

What makes Neuhaus's listening walk conceptually similar or different from Schafer's soundwalk? One could argue both the listening walk and the soundwalk came out of Neuhaus's and Schafer's connection to the contemporary music world. Neuhaus used his listening walks initially as pre-concert activities to open up the audience member's ears and Schafer's ear cleaning exercises were intended to develop music students' interest in 20th century music. As suggested previously, Neuhaus likely came up with the idea before Schafer, though we have no proof who did which first. We do know, they were thinking about sounds within the environment and opening the ears and minds to hear them publicly around 1966, but certainly, the ideas must have emerged earlier as they digested concepts by Cage and other composers. Acoustic ecologist Gregg Wagstaff sees a difference between soundwalks, where participants may actively create sounds while walking, and listening walks, where participants are quiet in order to hear what is around them.[151] But is that specifically what Neuhaus or Schafer would have agreed with?

Scholars have spent more time dealing with Schafer's soundwalks than Neuhaus's listening walks. There is very little information on how many listening walks happened, how Neuhaus led them, and so on. We do know Schafer has been criticized for privileging certain sounds over others (the hi-fi vs. lo-fi sounds, which will be discussed

[151] Andra McCartney, "Soundwalking: Creating Moving Environmental Sound Narratives," *The Oxford Handbook of Mobile Music Studies*, Volume 2 (Oxford University Press, 2014), 221.

more in Chapter Three); sounds from nature vs. sounds that are manmade or manufactured. What would Neuhaus have thought? According to his *New York Times* op-ed, he probably would have accepted and appreciated all sounds as "equal." Neuhaus favored sounds from the city organically emerging into a sound work, as seen in his *Times Square* piece. He considered these sounds as part of the work, even if others may have considered them as "noise." Schafer was incredibly concerned with how manmade sounds (especially industrial sounds) affected natural sounds, which insinuates that Schafer would have manicured an ideal soundscape if he had the chance. Perhaps Schafer would have sided with Baron in the *New York Times* response.

Schafer's view of nature ultimately could not accommodate a worldview where humans and manmade things, even cities, could be considered as part of nature. Throughout his work and his choice to live in rural Ontario, he demonstrated his belief that rural spaces and their sounds are better than urban spaces and their sounds. What were the good things that came out of the listening walks and soundwalks? Neuhaus and Schafer succeeded in challenging the individual to reconsider how they listened. Schafer opened up the field of acoustic ecology and Neuhaus was a pioneer in sound art. Both, perhaps, did not go far enough in really embracing how diverse communities listen – whether rural, urban, rich, poor, etc. Schafer's WSP research and Neuhaus's Sirens project address the "community's" concept of listening and how sound signals may confuse or reiterate messages, but what were the lasting implications these artists left on the public? In Chapters Five and Six, themes around public noise and community listening will be examined with commentary on the privileged members of the

community or the society (those who make noise, those who are silenced, and those who regulate noise).

CHAPTER THREE: R. MURRAY SCHAFER AND *THE BOOK OF NOISE*

"The ear…is exposed and vulnerable…the ear is always open…"
-Murray Schafer[152]

R. Murray Schafer wore many hats throughout his life, including that of composer, graphic artist, dramatist, creative writer, educator, social critic, literary scholar, journalist, and environmentalist. These myriad occupations and pursuits, however, are united through his interest in sound. Schafer has written over one hundred compositions, but is best known for his founding role in the World Soundscape Project, his contributions to acoustic ecology, and his book, *The Tuning of the World* (1977). Especially accomplished as a secondary and higher education pedagogue, Schafer published several exercises concerning how individuals and groups listen, including the *The Book of Noise* (1970). *The Book of Noise* was his attempt to draw attention to noise pollution, and came out of his "personal distaste for the more raucous aspects of Vancouver's rapidly changing soundscape.[153]

Scholarship pertaining to the shifting meaning and perception of sound has neglected connections between political and scientific concerns for noise pollution as expressed in *Composer in the Classroom* (1965), *Ear Cleaning* (1967), *The New Soundscape* (1969), *The Book of Noise* (1970), and *A Survey of Community Noise Bylaws in Canada* (1972). This chapter considers these works through examining the realm of discourse and social reception about noise within public environments. I argue that Schafer, and later his team, sought to redefine the way the public listens during a time

[152] R. Murray Schafer, *Ear Cleaning* (Clark & Cruickshank, 1967), 1.
[153] "The World Soundscape Project," https://www.sfu.ca/~truax/wsp.html (Accessed September 12, 2017).

when environmental sounds were becoming subject to control by the state through noise abatement. Included in this chapter are comments from Hildegard Westerkamp, an honored member of the WSP. Her insights in combination with the discussion of Schafer and the WSP's research contributes to the growing dialogue between current, overlapping topics within ecomusicology, ecocriticism, and sound studies.

Intended for classrooms and community groups, *The Book of Noise* discusses the impact of noise on humans and the environment, particularly addressing the growth of sounds within urban or city spaces. At a time when scientists and medical doctors were increasingly concerned with the psychological and physiological impact of noise on people, animals, and the landscape, new attention was focused on acoustic ecology, connecting sounds, living beings, and the environment. During the same time, Schafer was beginning to establish the World Soundscape Project with the primary goal "to find solutions for an ecologically balanced soundscape where the relationship between the human community and its sonic environment [would be] in harmony."[154] By 1972, the Soundscape Project published *A Survey of Community Noise By-Laws in Canada.* Their investigation of noise regulations from Canadian communities with populations over 25,000, commented on ways to deal with noise on local and municipal levels.

[154] "The World Soundscape Project."

The Composer in the Classroom* and *Ear Cleaning

During the mid-1960s, Schafer developed a reputation in music education, with strong empathy and care for the learner's needs by implementing creative and experimental exercises intended for high school students.[155] This allowed him to publish his first work, *The Composer in the Classroom*, offered conversations and questions to ask students to get them discussing, listening, and thinking about sound within their given environment.[156] As discussed in Chapter Two, in 1965, Schafer joined the communications faculty at Simon Fraser University. SFU was a relatively new school open to innovative ways of teaching and Schafer was an excellent fit for their interests. By this point, Schafer had already developed a background in music education, with strong empathy and care for the student's needs by implementing creative and experimental exercises. In 1986, Schafer reflected on how *The Composer in the Classroom* dealt with creativity, "perhaps the most neglected subject in Western musical education."[157] The book primarily deals with conversations and questions to share with students to get them discussing, listening, and thinking about sound.

In his positive review of the book, Karl Kroeger predicts the outcome of Schafer inspired teaching through the "discoveries that musical taste varies, and that one can like more than one kind of music…the vividly dynamic definition of music…the

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[155] These include: *The Composer in the Classroom* (1965), *Ear Cleaning: A Handbook for the Modern Music Teacher* (1967), *The New Soundscape* (1968), *When Words Sing* (1970), *Creative Music Education: A Handbook for the Modern Music Teacher* (1976), *A Sound Education: 100 Exercises in Listening and Sound-Making* (1992), and *Hearsing* (2005). Most include sound exercises; The *Thinking Ear: On Music Education* (1986) was a collection of many of these small booklets into a larger volume.
[156] Schafer, Preface to *The Thinking Ear: Complete Writings on Music Education*, (Arcana Editions, 1987), iii.
[157] Ibid.

understanding of a variety of musical sounds and textures…the students learn to listen and experience music as a live means of communication and expression." Kroeger enthusiastically recommends Schafer's book to music educators and ends by saying: "One hopes that Schafer might someday develop his ideas…relating to the problems of musicianship to contemporary music…there is a great need for such a volume."[158] In her review of Schafer's collection of writings, *Creative Music Education,* T. Temple Tuttle Schafer's publications not only full of productive exercises but valuable because of his philosophies on sound making in order to understand ones sonic environment.[159]

Schafer's publication coincided with his initial interest in addressing noise growth across Vancouver. In a conversation with me, Hildegard Westerkamp told the story of Schafer living in an area were a lot of sea planes were taking off from the Vancouver harbor, disturbing his attempts to compose. This inspired him to think about sounds of the environment and noise when he began teaching at Simon Fraser University. In the process, Schafer soon realized the students were not really all that enthralled or interested in the subject matter. He realized that rather than being morose or against noise, and instead of ranting against noise and fighting it, he had to further develop exercises for his students to open themselves up to listening, which Westerkamp remarks was the brilliance of his early publications like *Ear Cleaning*.[160] *Ear Cleaning* was based on course lecture notes and methods on opening the student's ears, hence the title. It

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[158] Karl Kroeger, "Review: *Composer in the Classroom*," *Notes*, Vol. 24, No. 1 (Sept 1967), 51.
[159] T. Temple Tuttle, "Review: Creative Music Education," *Contributions to Music Education,* No. 6 (1978), 97.
[160] Interview with Hildegard Westerkamp, October 10, 2017.

developed the student's musicianship in contemporary music, but also had them think more about the sounds around them.[161] In the preface, Schafer states:

> Before ear training it should be recognized that we require ear cleaning…ear cleanliness is an important prerequisite for all music listening and music playing. The ear…is exposed and vulnerable. The eye can be closed at will; the ear is always open.[162]

The book offers a mixture of nine lectures and exercises centered around: Noise, Silence, Tone, Timbre, Amplitude, Melody, Texture, Rhythm, and The Musical Soundscape. In his lecture on noise, Schafer defines noise as "undesired sound…the negative of musical sound…any sound which interferes."[163] *Ear Cleaning* also fulfills Kroeger's wish by expanding ear training to prepare the students for larger musical forms, contemporary music, and the acoustic environment at large.

[161] Stephen Adams, *R. Murray Schafer* (Toronto, 1983), 26.
[162] R. Murray Schafer, *Ear Cleaning* (Clark & Cruickshank, 1967), 1.
[163] *Ear Cleaning*, 3.

Figure 3.1: Schafer instructing sound exercises with children and teenagers[164]

[164] Top: R. Murray Schafer, *When Words Sing* (Arcana Editions, 1970). Permissions from Arcana Editions. Middle: R. Murray Schafer, *The Composer In the Classroom* (Arcana

The New Soundscape

Ear Cleaning discusses the term, "soundscape," which is the focus of the next publication, *The New Soundscape* (1969). This work shows Schafer's concern with listening to environmental sounds broadening beyond music students and out towards the public.[165] Both publications come out of the late 1960s, a time of urban and sonic growth, but also of musical experimentalism and amplified rock music. Schafer encourages his reader to consider the "modern hard-edged soundscape of the city" masking the "voices of its human inventors."[166] He urges them to educate themselves on acoustic thresholds of hearing, suggesting instead of being a member of their local music teachers' association, they "take up membership in the International Society for Noise Abatement."[167] Schafer spends a great deal of the publication on noise abatement across the globe, suggesting the reader become acquainted with their local laws and learn how to take noise-nuisance cases to court.

Editions, 1965). Permissions from Arcana Editions. Bottom: Permissions from Eleanor James, for R. Murray Schafer.

[165] T. Temple Tuttle, "Review: Creative Music Education," *Contributions to Music Education*, No. 6 (1978), 97. In her review of Schafer's collection of writings, *Creative Music Education*, T. Temple Tuttle sees all of Schafer's publications not only full of exercises but as declarations of his philosophy on sound making to understand sound.

[166] Schafer, *The New Soundscape: A Handbook for the Modern Music Teacher* (BMI Canada Unlimited, 1969), 7 and 24.

[167] Ibid, 4.

Where should we begin?

We can begin anywhere. It is often useful to examine a negative in order to see the positive clearly. The negative of musical sound is noise sound.

Noise

Noise is an undesirable sound signal.

Noise is the static on a telephone or the unwrapping of cellophane candies during Beethoven.

There is no other way to define it. Sometimes dissonance is called noise, and to timid ears this may be so. But consonance and dissonance are relative and subjective terms. A dissonance for one age, generation, individual, may be a consonance for another age, generation, individual.

About the earliest dissonance in music history was the major third (C to E). About the latest consonance in music history was major third (C to E).

Noise is any sound signal which interferes. Noise is the destroyer of things we want to hear.

Schopenhauer said man's sensitivity to music varies inversely according to the amount of noise he is able to withstand, or something to that effect. He meant as we grow choosy about the sounds we listen to, we are progressively distracted by sound signals which interfere (for instance, unruly audience behaviour at concerts).

For the insensitive person the concept of noise is invalid. A sleeping log hears nothing. Machinery is indifferent to noise because it has no ears. Exploiting this indifference, wired background music was invented for earless humans.

On the other hand:

For a man who is truly moved by a piece of music even applause may constitute an interference. It would be like crying encore at a crucifixion.

For the sound-sensitive man, the world is filled with noise.

You know what they say about silence.

Figure 3.2: Lecture One on Noise from *Ear Cleaning*[168]

[168] *Ear Cleaning*, 5. Permissions from Arcana Editions

With *The New Soundscape*, Schafer expresses an appreciation for all sounds around him, yet shows nostalgia for silence and has anxiety about city sounds growing, potentially masking natural sounds and harming the earth, its animals, and humans. His attempt to draw attention to noise pollution grew into the 1970s, resulting in *The Book of Noise*.

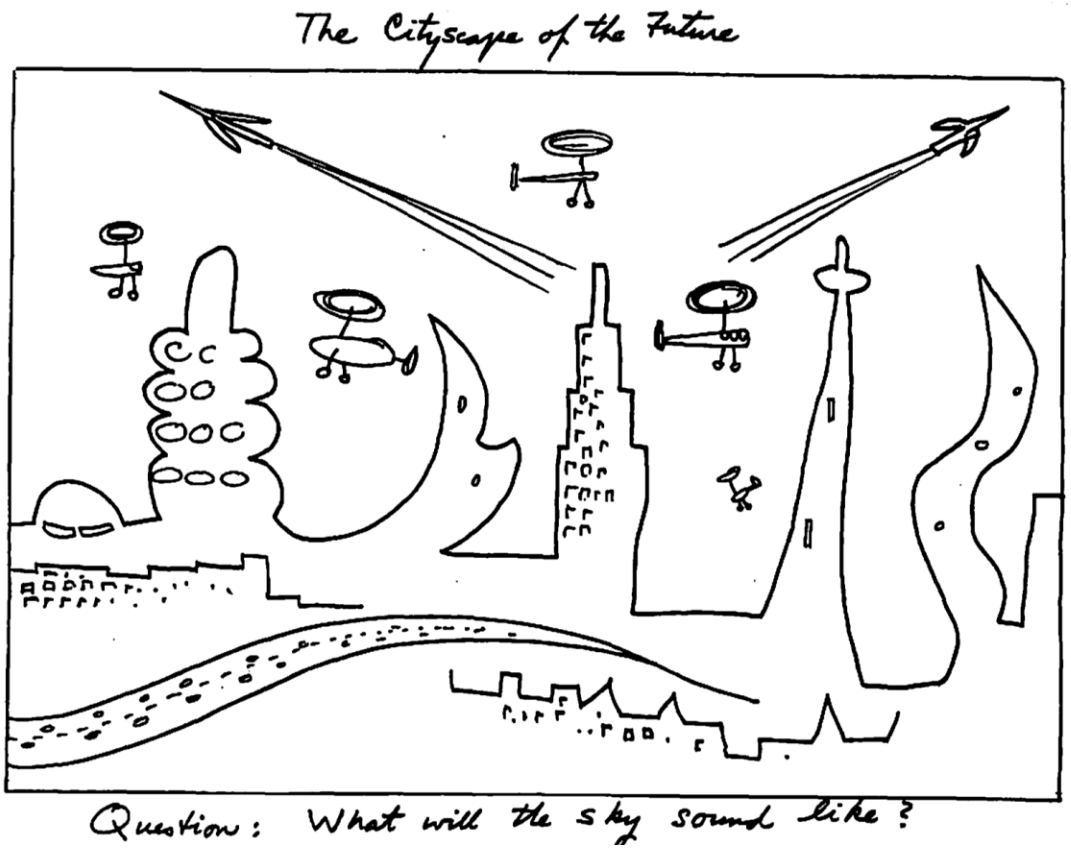


Figure 3.3: Schafer's drawing of the future cityscape in *The New Soundscape*[169]

[169] *The New Soundscape*, 62. Permissions from Arcana Editions

The Book of Noise

The Book of Noise begins with describing how the decibel levels of cities are rising each year due to technological advances in transportation and challenging the reader to be cognizant of the varying volume of sounds within their environment. Schafer considers the modern city to be a "sonic battleground" and human kind is losing in the fight to maintain a quality natural environment.[170] He would later describe a quality environment as one in which humans have a harmonious relationship with their soundscape.[171] Schafer states the soundscape is important within its environment, explaining his belief that all sounds symbolize something and that "sounds of nature are mostly pleasing to man" versus the sounds that replace them.[172] He blames accessible technological advances (construction, transportation, power tools, gadgets, radios, and other electronic or machine sounds) for this rise in noise. Schafer sees the technological soundscape as a dangerous jungle, a sonic battleground where factory workers and teenagers into rock music lose their hearing and sense of wellness.[173]

The Book of Noise spends special attention on air traffic, or what Schafer termed "The Big Sound Sewer of the Sky." His drawing and commentary for "The Big Sound Sewer of the Sky" may be seen in Figure 3.4. Schafer was concerned with how difficult it is to contain or localize air traffic sound as well as its growth in terms of decibel levels and pervasiveness. He questions whose responsibility it is to maintain these sounds. In *The Book of Noise*, we see Schafer approaching noise in two ways: a more objective

[170] Schafer, *The Book of Noise* (Arcana Editions, 1998), 1.
[171] Ibid, 2.
[172] Ibid, 14.
[173] Ibid, 10.

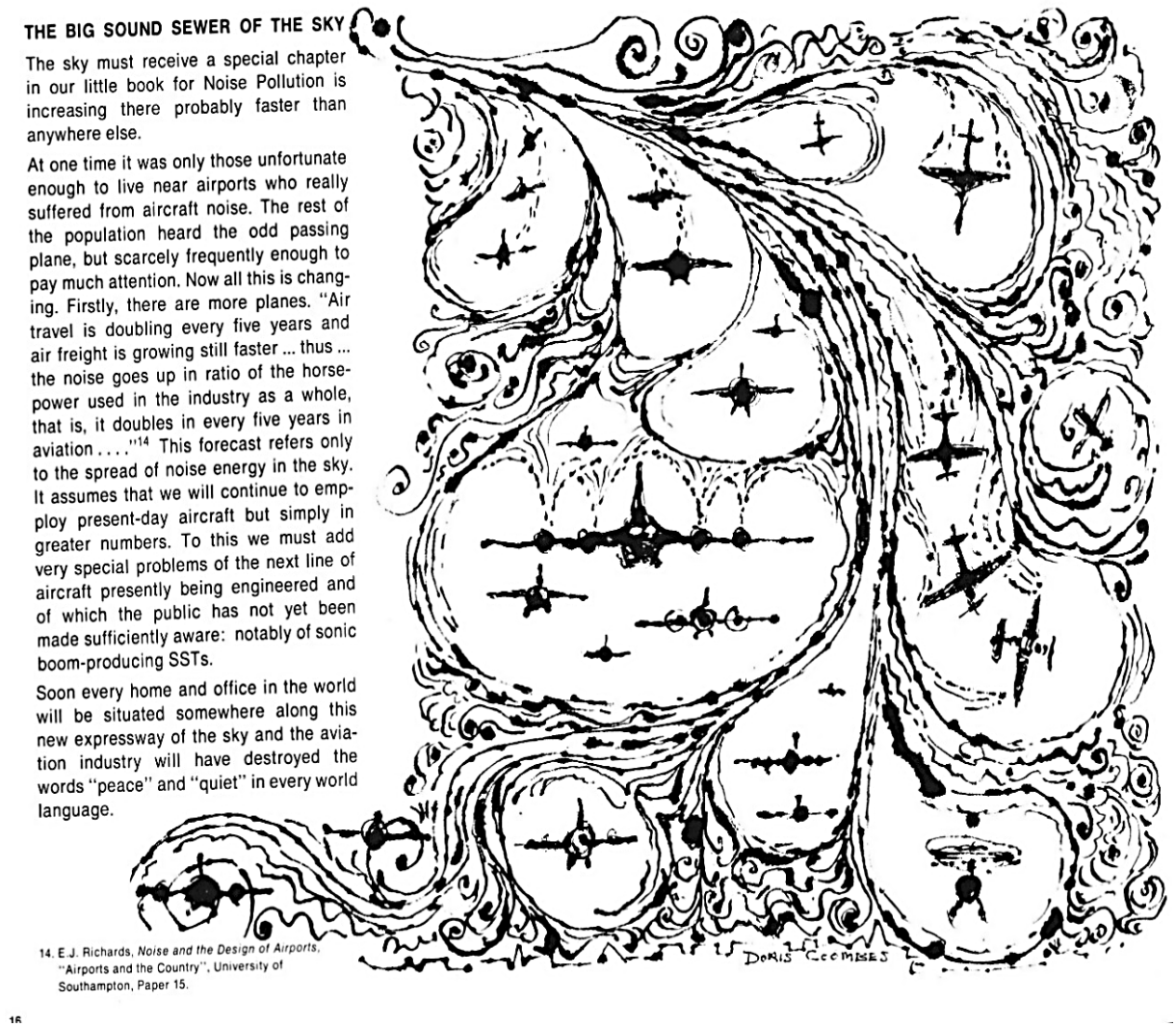
approach that looks at decibel levels or high volumes and a more subjective approach based around his own individual perspective. He claims he is open minded to listening to all sounds, but only if it is within a sonic space he finds balanced, that is with little noise. Schafer explains:

> The more discriminating we are about sounds the better signal to noise ratio we will demand in our acoustic environment. At the moment, the signal to noise ratio is deteriorating.[174]

Schafer is wanting more selection with "allowed" sounds in the soundscape, but it is striking he uses the word "discriminating" to describe this selection process. For when one discriminates, they are conditioned by their own perspectives and privileges when making their sonic decisions. Schafer states "noise reigns supreme over human sensibility" recognizing at the time of this booklet (1970), construction and demolition equipment had no sound level regulations in Canada.[175] Schafer draws attention to the imperial implications of Western societies which produce these sonic problems:

> Territorial expansion has always been one of [Western civilization's] aims. Just as we refuse to leave a space of our environment uncultivated, unmastered, so too have we refused to leave an acoustic space quiet, unpunctured by sound…the huge noises of our civilization are also a crude manifestation of this same imperialistic ambition…[176]

[174] *The Book of Noise*, 10.
[175] Ibid, 13.
[176] Ibid.



THE BIG SOUND SEWER OF THE SKY

The sky must receive a special chapter in our little book for Noise Pollution is increasing there probably faster than anywhere else.

At one time it was only those unfortunate enough to live near airports who really suffered from aircraft noise. The rest of the population heard the odd passing plane, but scarcely frequently enough to pay much attention. Now all this is changing. Firstly, there are more planes. "Air travel is doubling every five years and air freight is growing still faster ... thus ... the noise goes up in ratio of the horsepower used in the industry as a whole, that is, it doubles in every five years in aviation ...."[14] This forecast refers only to the spread of noise energy in the sky. It assumes that we will continue to employ present-day aircraft but simply in greater numbers. To this we must add very special problems of the next line of aircraft presently being engineered and of which the public has not yet been made sufficiently aware: notably of sonic boom-producing SSTs.

Soon every home and office in the world will be situated somewhere along this new expressway of the sky and the aviation industry will have destroyed the words "peace" and "quiet" in every world language.

14. E.J. Richards, *Noise and the Design of Airports*, "Airports and the Country", University of Southampton, Paper 15.

Figure 3.4: Schafer's drawing of "The Big Sound Sewer of the Sky"[177]

He continues by saying: "…noise is a waste sound, sonic effluence, resulting from indifference to environmental quality…the bigger the rape of the environment, the noisier it becomes…" and while noise "may be compared with disorderly or confused action (i.e. anarchy), it would be hasty to assume that noise is responsible for all the social

[177] *The Book of Noise*, 16. Permissions from Arcana Editions.

turbulence of modern life even though much of that turbulence exists in the cores of cities where the noise is most intense."[178]

Aware of the global rise of noise, Schafer begins to argue for cultural change and sonic self-restraint on the local levels. Westerkamp stated**:**

> When he wrote *The Book of Noise* in 1970, he took a first step to focus specifically on noise, to articulate attempts to reduce noise, to raise awareness of the scale of the problem. He had already written a variety of innovative books within the realm of music education - such as *Ear Cleaning, The New Soundscape, When Words Sing, The Composer in the Classroom* - that aimed to open people's ears and create a deeper listening awareness towards music and the sound environment. *The Book of Noise* tried to do both: grapple with noise issues and open ears toward the sound environment…. [during a time when] the World Soundscape Project had not really started…[179]

A Survey of Community Noise Bylaws in Canada

While an exact date is unknown, Schafer's team began to delve into many areas that involve sound and the environment moving into the 1970s. Their first publication, *A Survey of Community Noise Bylaws in Canada,* released in 1972 and centered on noise legislations from over 80 Canadian cities.[180] It offers commentaries on health risks from noise, explanations of local regulations, commentaries from mayors and enforcement officers, and noise statistics to better help understand the change in environmental sounds across Canada. By this time, most anti-noise legislation had not passed at a federal level, but at the municipal level, with some provinces requiring quiet zones during evening hours and regulations around highway and industrial sounds.

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[178] *The Book of Noise*, 22-23.
[179] Interview with Hildegard Westerkamp.
[180] WSP Members in the 1970s included: Westerkamp, Barry Truax, Peter Huse, Bruce Davis, Jean Reed, Howard Broomfield, and others.

Of those provinces and cities that had the regulations, some adopted them from the United States' Walsh-Healey Act, centering them around labor and industrial laws.[181] Some provinces' regulations were overly vague and some towns did not even try. In Figure 3.5 we see the rise in regulations across Canada from the 1920s-1970s, reflecting the rise in use of manufactured and industrial sounds.

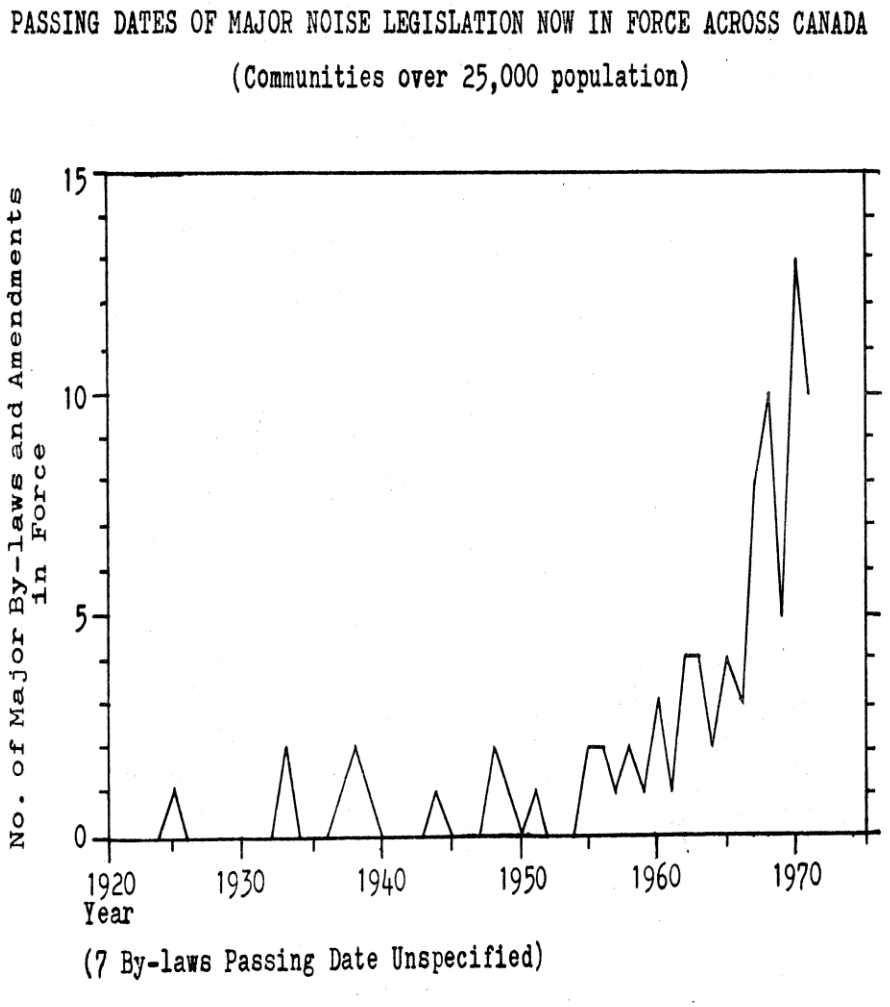
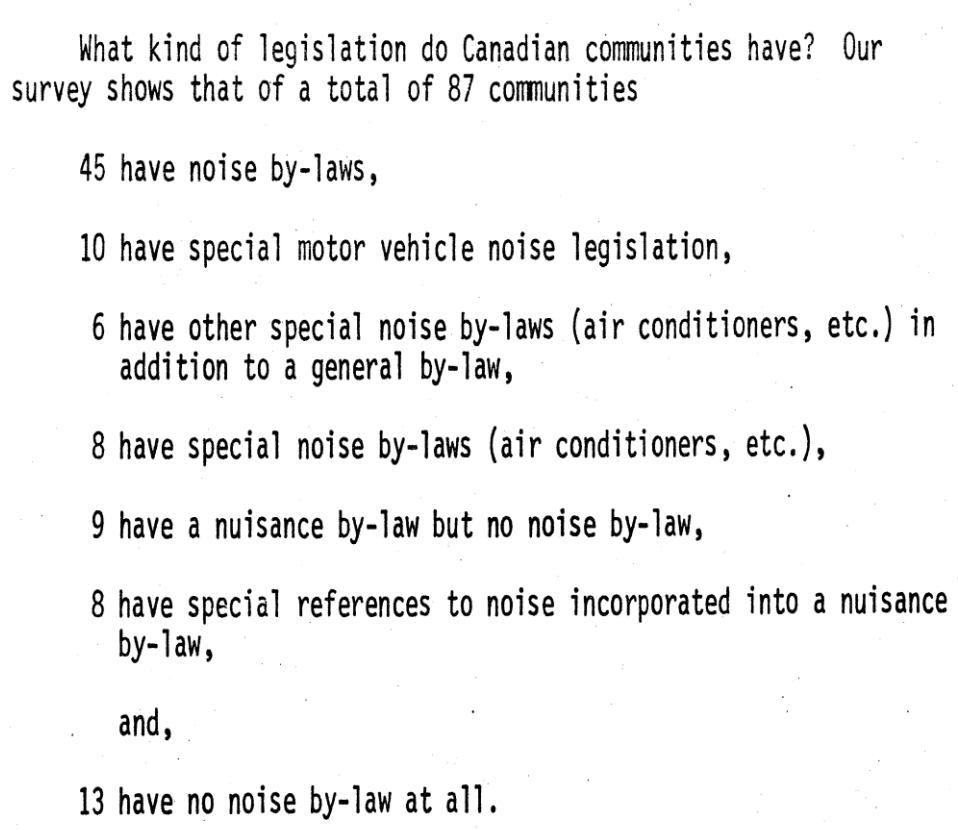


Figure 3.5: Noise Regulation increase in Canadian cities from the 1920-1970s [182]

[181] World Soundscape Project, *A Survey of Community Noise By-Laws in Canada*, (https://www.sfu.ca/sonic-studio/WSP_Doc/Booklets/ByLawSurvey.pdf), 11-17.
[182] Ibid, 9. Permissions from the World Soundscape Project, Simon Fraser University.

Schafer and his team also surveyed the types of noise legislations that eighty-seven Canadian cities enforced, which may be seen in Figure 3.6. Thirteen of these cities had no by-laws regarding sound around 1970, some having special laws based around traffic or appliances.



What kind of legislation do Canadian communities have? Our survey shows that of a total of 87 communities

45 have noise by-laws,

10 have special motor vehicle noise legislation,

6 have other special noise by-laws (air conditioners, etc.) in addition to a general by-law,

8 have special noise by-laws (air conditioners, etc.),

9 have a nuisance by-law but no noise by-law,

8 have special references to noise incorporated into a nuisance by-law,

and,

13 have no noise by-law at all.

Figure 3.6: The types of noise legislations from eighty-seven Canadian cities[183]

[183] *A Survey of Community Noise By-Laws in Canada,* 10. Permissions from the World Soundscape Project, Simon Fraser University.

Figure 3.7 shows the increase of power tools, kitchen appliances, motocycles, and lawn mowers across Canada over the 1960s while the sales of pianos declined. This also reveals Schafer's favor of acoustic sounds over industrial sounds, assuming he would rather have a piano played than a kitchen mixer.

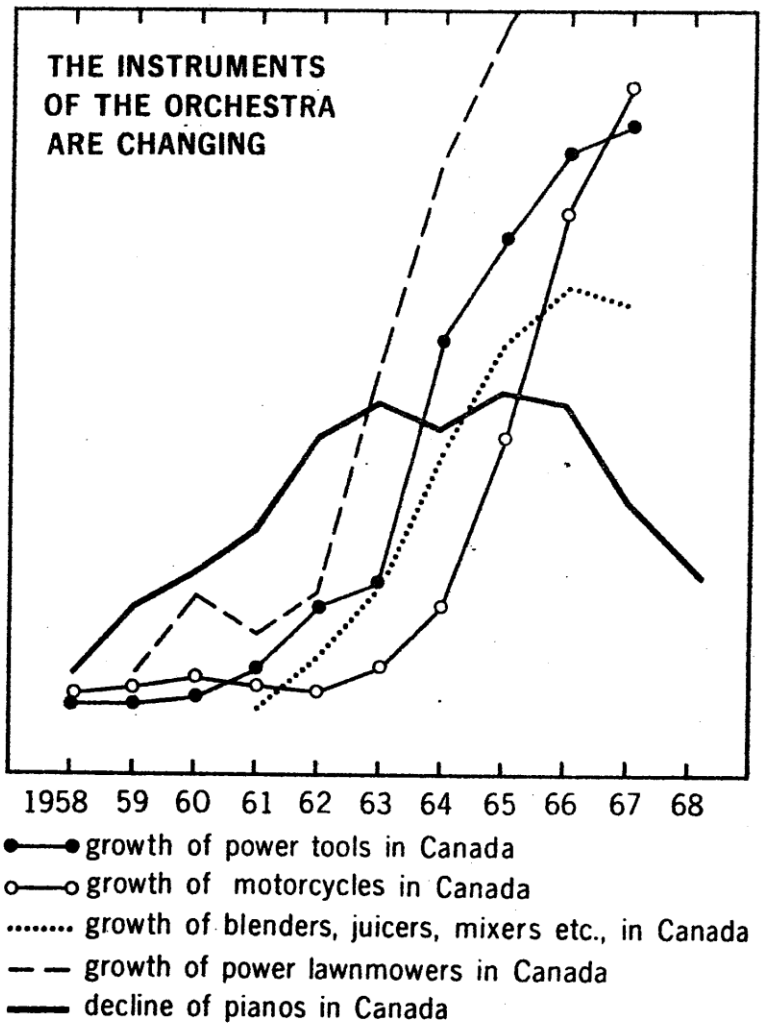
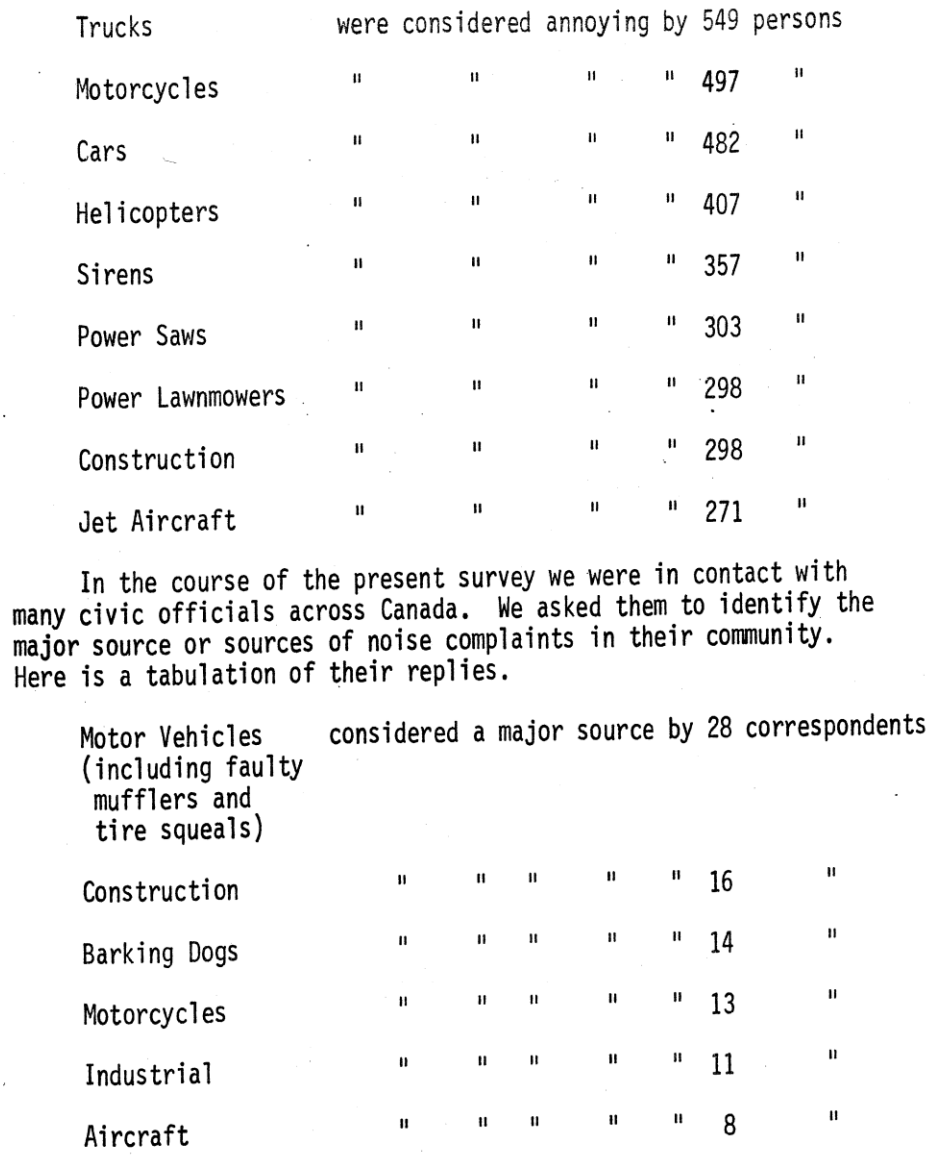


Figure 3.7: Growth in motorized sounds across of Canada[184]

[184] *A Survey of Community Noise By-Laws in Canada*, 2. Permissions from the World Soundscape Project, Simon Fraser University.

In 1969, Schafer also completed a "social survey" of people around SFU concerning sound. Of the hundreds he spoke with, most were annoyed by truck and traffic sounds, which may be seen in Figure 3.8.



Trucks	were considered annoying by				549	persons	
Motorcycles	"	"	"	"	497	"	
Cars	"	"	"	"	482	"	
Helicopters	"	"	"	"	407	"	
Sirens	"	"	"	"	357	"	
Power Saws	"	"	"	"	303	"	
Power Lawnmowers	"	"	"	"	298	"	
Construction	"	"	"	"	298	"	
Jet Aircraft	"	"	"	"	271	"	

In the course of the present survey we were in contact with many civic officials across Canada. We asked them to identify the major source or sources of noise complaints in their community. Here is a tabulation of their replies.

Motor Vehicles (including faulty mufflers and tire squeals)	considered a major source by				28	correspondents	
Construction	"	"	"	"	16	"	
Barking Dogs	"	"	"	"	14	"	
Motorcycles	"	"	"	"	13	"	
Industrial	"	"	"	"	11	"	
Aircraft	"	"	"	"	8	"	

Figure 3.8: Schafer's "Social Survey on Sound"[185]

[185] *A Survey of Community Noise By-Laws in Canada,* 10. Permissions from the World Soundscape Project, Simon Fraser University.

Schafer and his team discovered the by-laws that did exist were very vague. For example, the Ontario Municipal Act stated: "By-laws may be passed by the councils of local municipalities for prohibiting…the ringing of bells, the blowing of horns, shouting and unusal noises, or noises likely to disturb the inhabitants."[186] Mayor D.P. Meston of Waterloo, Ontario noted this unclear language within provincial standards when he stated, "Our by-law regarding noise is completely inadequate as are most on this subject due to the lack of definitions and the lack of provincial standards on the subject."[187]

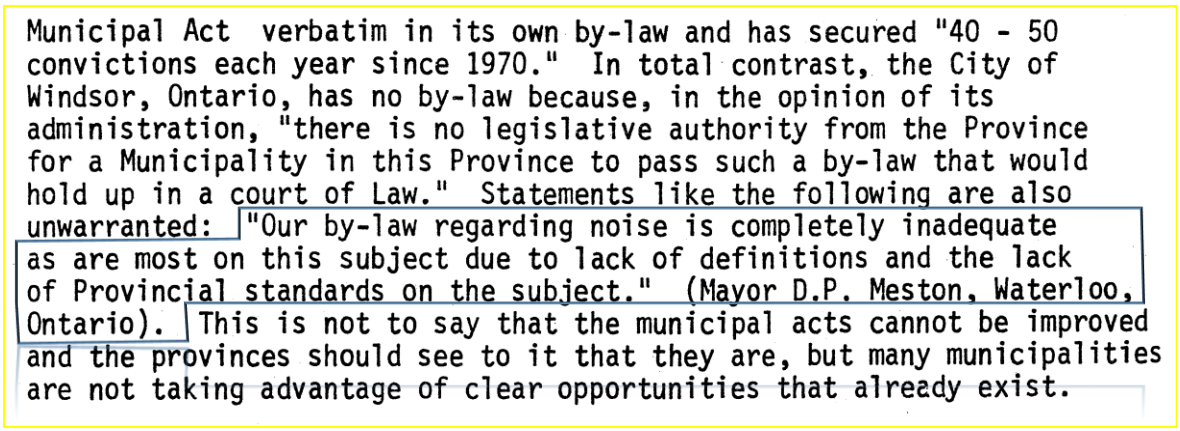

Municipal Act verbatim in its own by-law and has secured "40 - 50 convictions each year since 1970." In total contrast, the City of Windsor, Ontario, has no by-law because, in the opinion of its administration, "there is no legislative authority from the Province for a Municipality in this Province to pass such a by-law that would hold up in a court of Law." Statements like the following are also unwarranted: "Our by-law regarding noise is completely inadequate as are most on this subject due to lack of definitions and the lack of Provincial standards on the subject." (Mayor D.P. Meston, Waterloo, Ontario). This is not to say that the municipal acts cannot be improved and the provinces should see to it that they are, but many municipalities are not taking advantage of clear opportunities that already exist.

Figure 3.9: Quote from Mayor D.P. Meston of Waterloo, Ontario on noise by-laws[188]

The overarching theme from the WSP's survey was that the local communities did not have enough power to design and enforce effective legislation without provincial and federal support, especially involving air traffic. The rest of the compendium engages its reader to think about how to improve upon enforcing regulations and policies in their community. The publication ends with a cry for noise pollution to be eliminated across Canada with the hopes of the community soundscape of the future to resemble "Sounds

[186] Ibid, 8. From the "Ontario Municipal Act, Section 354, Paragraph 18."
[187] *A Survey of Community Noise By-Laws in Canada*, 9.
[188] Ibid. Permissions from the World Soundscape Project, Simon Fraser University.

and Sweet Airs, that give delight and not hurt," which was quoted from Shakespeare's *The Tempest*.[189] After this publication, the WSP branched out to research and record international sound environments, resulting in the acoustic ecology movement. In the mid-1970s they would move beyond Vancouver and Canada to record soundscapes throughout Europe. Their work would go onto influence other studies to continue considering noise and the environment. In 1975, scientists Roger J. Vaughan and Larry Huckins offered the study, *The Economics of Expressway Noise Pollution Abatement*. Their research dealt with traffic noise in the city of Chicago and ways in which to limit design and economic problems involved with noise.[190] In physicist Amando García's book, *Environmental Urban Noise* (2001), he concentrates his research on noise in urban centers of Europe, proving the topics and themes of *A Survey of Community Noise By-Laws in Canada* were significant decades after its introductions.[191] Figure 3.10 from *Environmental Urban Noise* is comparable to the data and statistics Schafer and his team compiled almost thirty years prior.

[189] *A Survey of Community Noise By-Laws in Canada*, 20.
[190] Roger J. Vaughan and Larry Huckins, *The Economics of Expressway Noise Pollution Abatement*, (The Rand Paper Series, 1975).
[191] Amando García, ed. *Environmental Urban Noise* (WIT Press, 2001).

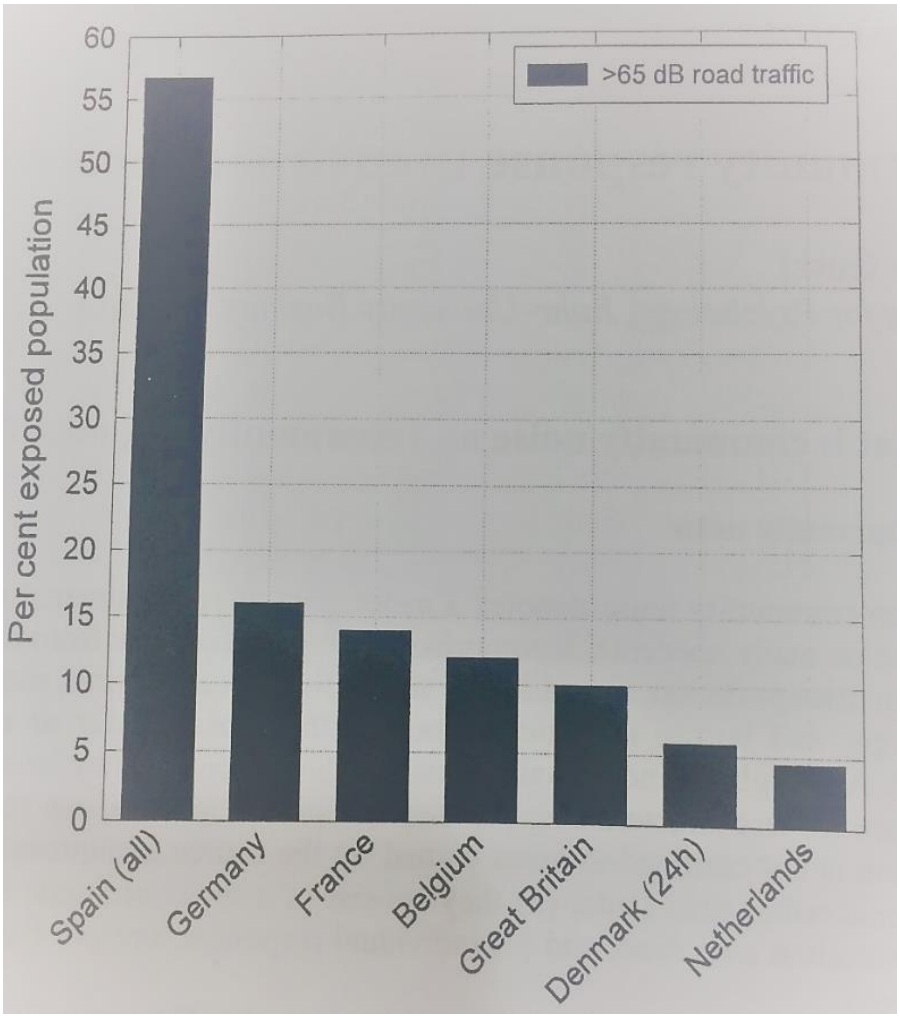


Figure 3.10: Percentage of European residents exposed to daytime road traffic noise above sixty-five decibels[192]

Many scholars have criticized Schafer's idealized view of nature and power dynamics at play.[193] In Tom Kohut's recent publication entitled "Noise Pollution and the Ecopolitics of Sound," Kohut questions the separation of urban/modern sounds with rural/nostalgic sounds and discusses the use of nature as a weapon of power during noise

[192] Amando García, *Environmental Urban Noise*, 112.
[193] David Toop, *Sinister Resonance: The Mediumship of the Listener* (Bloomsbury, 2011); Toop, *Ocean of Sound: Aether Talk, Ambient Sound and Imaginary Worlds* (London: Serpent's Tail, 1995); and Steve Goodman, *Sonic Warfare: Sound, Affect, and the Ecology of Fear* (The MIT Press, 2012).

abatement's history, arguing that this served as a mode of social control.[194] This resonates with historical geographer, Neil Smith's views on the production and the exploitation of nature for the sake of bourgeois control as well as aligns with recent work by urban political ecologists intended to address the active role of the city in history.[195] We might even consider the overtones of Schafer's ideals. His access to rural living and romanticizing of the wilderness could be coming from a place of middle-class privilege, as Andra McCarney has suggested.[196]

When he moved from Vancouver to an abandoned farm in south-central Ontario with his wife in 1974, Schafer recalled:

> …the natural and social environment of my life changed completely…we shared the fields and forest around the house with birds and wild animals, often not seeing people for days. The soundscape was ideal.[197]

His statement insinuates that only "good" or ideal sounds come from Mother Nature, separating humans from the natural acoustic space all together, even if the motorized sounds heard are made by humans. In contrast, Neuhaus stated:

> A lot of people think good sounds come only from Mother Nature or concert halls. I'm proving otherwise.[198]

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[194] Tom Kohut, "Noise Pollution and the Eco-Politics of Sound: Toxicity, Nature and Culture in the Contemporary Soundscape," *Leonardo Music Journal,* Issue 25 (December 2015), 5.
[195] To be discussed more in chapter five. Smith 1990; Heynen, Kaika, and Swyngedouw 2006; Cronon 1995.
[196] Andra McCartney, "Soundwalking: creating moving environmental sound narratives," *The Oxford Handbook of Mobile Music Studies*, Volume 2 (Oxford University Press, 2014), 212-237.
[197] R. Murray Schafer, Preface to *Music in the Cold* (Arcana Editions, 1977).
[198] Patti Reilly, "The World is Alive with the Sound of Music, and Some of it is by Composer Max Neuhaus," *People Magazine* (June 30, 1980).

Barry Truax (b. 1947),[199] a pioneer in the field of Acoustic Communications, who joined the WSP in 1973 after completing his post-graduate studies at the Utrecht Institute of Sonology.[200] He became known as the theorist of the group, editing, and trying to balance Schafer's humanist approach when writing about sound within the environment. Schafer's anti-noise ideals and poetic rhetoric about nature was particularly evident when Truax was editing the *Handbook for Acoustic Ecology* in 1978. Later, he published the book *Acoustic Communication* (1984/2001), which dealt with sound and technology. As Truax began developing his Acoustic Communications concepts while working with Schafer, he recalled: "I thought perhaps we needed some other way of approaching the whole tricky concept of technology that Murray was so notoriously one-sidedly negative about."[201]

The concept of technology here connects to an umbrella of industrial, electronic, and/or urban sounds. Jacques Attali commented on the social dynamics at play when he said: "There is no power without the control of noise and without a code for analyzing, marking, restricting, training, repressing, and channeling sound, be it the sound of language, of the body, of tools, of objects, or of relationships with others and with oneself."[202] Through Jacques Attali, we see that the "monopoly on the broadcasting and

[199] Along with his WSP work and accomplishments in acoustic communications, Truax is also a Canadian composer.
[200] Truax was one of the original members of the WSP. Researchers on *The Tuning of the World*, survey of noise legislation in the world, the Vancouver soundscape, and so forth also included Westerkamp, Peter Huse, Bruce Davis, and Howard Broomfield.
[201] "Biographical Details," https://www.sfu.ca/~westerka/bio.html (Accessed January 10, 2018).
[202] Jacques Attali, Forward to *Music and Marx: Ideas, Practice, Politics* pp. x-xi, ed. Regula Burckhardt Qureshi

reception of noise" is influenced by "the fear of the foreign, the uncontrollable, the different."[203]

Schafer leaves out power dynamics when he discusses political and social turmoil of sound, not seeing his own power when he selects the sounds he sees as noise and not noise. We cannot argue certain decibel levels will not harm us over long periods of time, but our shifting perceptions of sounds must be considered when attempting to control it. Schafer does not question the powers at play that cultural historian David Hendy does when he asks, "who gets to make noise and who doesn't, who gets their voice heard and who doesn't, who gets to listen and who doesn't?" How can silence be "golden for some and oppressive for others" in our growing world?[204] With ties to Attali, David Novak (2013) argues, "noise can prophesy social futures and become an oracle of cultural change. Novak asserts Attali recognized that noise precedes music or controlled sounds. It is noise, not music or controlled sounds (soundscapes?), which "represents the elemental forces of creativity" interrupting "commercial and technological repetitions."[205] When Westerkamp and I discussed such critiques of Schafer, she said:

[203] Attali, Forward to *Music and Marx: Ideas, Practice, Politics.*
[204] David Hendy, *Noise: A Human History of Sound and Listening* (Ecco: 2013), xii
[205] David Novak, *Japanoise* (Duke University Press, 2013), 300. Also, see: Novak and Matt Sakakeeny, "Noise," *Keywords in Sound* (Duke University Press, 2015), 125-133.

> There's been a fair amount of controversy, as you say, that he idealizes natural sounds. Well, yes, on some levels he has made himself vulnerable through a certain tone in which he speaks about nature in *The Tuning of the World*…Sometimes in his attempts to raise awareness he likes to rattle people into an aural alertness. So, the impression that people get from his writing is that he is for silence and against noise, for nature and against cities. This has become a sort of cliché critique against Schafer. But if you don't take his sometimes-provocative tone too seriously (which is also the tone of our generation, in the '60s and '70s…), and you look at the basis of the book, he is talking about the *acoustics* of natural places as being ideal, where no sound masks another sound. As soon as we introduce mechanized sounds, such as a car or a chainsaw, into nature, we mask the subtle sounds of such an environment. That's an acoustic reality. What Schafer was trying to do with the Soundscape Project was to encourage us all to really listen to those and all other acoustic realities and understand what [they] mean...[206]

Westerkamp also sees the negative side of silence and that "noise" can be "quiet" when she asks:

> How do we get rid of oppressive silences – silences that are without life? For instance, you can call an office with whitenoise that's not very loud, but has this air conditioning sound, could be seen very much as an oppressive sound because there is no life in it. All you're hearing is a bit of broadband whitenoise that's relatively quiet, but it makes it so you can't really hear other voices very well or really anything really well other than signals. How do we get a positive relationship to attack silence that is inspiring, alive and well, and a source of repose and relaxation?[207]

Throughout this chapter, I have relied heavily on Hildegard Westerkamp's conversation with me and must give more background about her career and involvement with Schafer. Westerkamp (b. 1946) is a German-Canadian composer, radio artist, sound ecologist, lecturer, performer, and writer. She recalled the first time she heard Schafer speak a guest lecture at University of British Columbia in Vancouver:

[206] Interview with Hildegard Westerkamp.
[207] Ibid.

> The World Soundscape Projects was already in existence and members of the groups were placed in the middle of the audience. During the lecture, they stood up at seemingly unrelated moments while Murray was speaking, and asked questions like, "How many birds have you heard today?" "What was the first sounds you hear this morning? "How many airplanes have you heard this day?" I walked out that lecture and my ears had popped open, never to close again.[208]

After studying music in college, she joined Schafer at SFU with the World Soundscape Project. This involvement "not only activated deep concerns about noise and the general state of the acoustic environment in her, but it also changed the ways of thinking about music, listening, and soundmaking."[209]

She was involved with the Vancouver Co-operative Radio during the 1970s which allowed her to record and experiment with broadcasting the soundscape. In 1974 Westerkamp published a small booklet in the same style of *The Book of Noise* called, "ssh...Noise Handbook." Her booklet acted as an extension of the WSP's *Survey* and was handed out at town meetings and educational workshops to provide more tangible information for the public about rising sound levels within Canada. Westerkamp completed a master's thesis called "Listening and Soundmaking" where she discussed the importance of understanding the sounds within the environment and mindful listening to create art. Thus, her compositions deal with acoustic environments and often involve poetry, drawing attention to hidden sounds and spaces humans inhabit. Andra McCartney explored such topics in her dissertation "Sounding Places: Situated Conversations

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[208] "The World Soundscape Project: 25 Years in Vancouver," from *Proceedings: The First International Conference on Acoustic Ecology*, Conference Book Vol. 1 (Banff, 1993).
[209] "Biographical Details," https://www.sfu.ca/~westerka/bio.html (Accessed January 10, 2018).

through the Soundscape Compositions of Hildegard Westerkamp."[210] A founding member of the World Forum for Acoustic Ecology (WFAE) and the Canadian Association for Sound Ecology (CASE), Westerkamp served as a past editor of *The Soundscape Newsletter* and the *Soundscape, the Journal of Acoustic Ecology*. She taught Acoustic Communication courses with Barry Truax at SFU until 1990. Westerkamp continues to compose, write, and serve her community by leading soundwalks in the Vancouver Soundwalk Collective and giving public lectures. Many focus on how significant Schafer is within the acoustic ecology and soundscape world, but his mentees and researchers, such as Truax and Westerkamp continued his legacy by expanding his theories further.

Soundmaking

Throughout Schafer's compositions, we see many works involving nature and influenced by the environment, as discussed in Chapter Two with *Epitaph for Moonlight*, but it is with his later publications we see him incorporating opportunities for noise to infiltrate sonic exercises. Throughout his compositional career, Schafer wrote works that connected to the environment in some way. Works like *Epitaph for Moonlight* are not only educational and indeterminate, but also connect to a natural phenomenon. With *Epitaph*, Schafer is commenting on the possibilities of sounds the performers or listeners would imagine the moon creating. The fictional language help in describing the sounds and the light of the moon. It also physically connects since humans had just gained

[210] Andra Shirley McCartney, "Sounding Places: Situated Conversations Through the Soundscape Compositions of Hildegard Westerkamp," Ph.D. Diss., (York University, 1999).

access to space travel and touching the moon. Nature served as inspiration for almost all of Schafer's music, exercises, and writing, especially after Schafer moved to his farm.

When commissioned to write a work for a trombone society, Schafer created *Music for Wilderness Lake* (1979), a composition for twelve trombones situated around the shore of a small isolated lake at dawn and dusk. "The big revolutions of musical history," Schafer noted, "are changes of context more than changes of style." Thus, he created "environmental music," or works that demand special types of attention from their audience within their surroundings.[211] Throughout his career, Schafer would go onto create more works that explored the relationship between music, performer, listener, and environment (such as: *North/White, Music in the cold, Music for Wilderness Lake*). He even titled a chapter of his book on Canadian music, "Music in the Cold." In this chapter, through poetry, he discusses the lifestyle of Canadians who live in extreme weather conditions forced to be resourceful, resilient, and balanced with nature.[212] In the 1980s, after living a few years in the country, Schafer said, "I'm really beginning to feel that maybe we should begin to find a totally new kind of musical art form, one which corresponds more closely to that rural wilderness environment that is so much a part of our heritage."[213] Eventually Schafer would insist the soundscape concept is more about regarding the world "as a large musical composition" and in general defines acoustic ecology as "the study of sounds in relation to life and society." [214] These thoughts may be connected to Cage's ideas on environmental sounds as music as well as the questioning

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[211] Adams, "Schafer, R. Murray."
[212] Schafer, "Music in the Cold," from *On Canadian Music* (Arcana Editions, 1984).
[213] Rick MacMillan, "Schafer Sees Music Reflecting Country's Characteristics," *Music Scene* (Jan-Feb 1977), 7.
[214] Schafer, *The Soundscape: The Tuning of the World,* (Destiny Books, 1977), 205.

of what music is within daily life and how we listen. Cage addresses the psychological and social constructions of the past and new ways of listening as well as unrestricting music to more possibilities in his essay "Experimental Music: Doctrine."[215]

In his biographical book, *R. Murray Schafer*, Stephen Adams claimed Schafer as both an "avant-gardist" and "self-confessed romantic."[216] His experimentation with notation as well as his interest in sounds as they occur within a particular environment connects to his interest in portraying a particular setting. We saw Schafer's application of (Romantic) programmaticism with his work *Epitaph for Moonlight*, which would continue to evolve towards his other works dealing with nature as seen in *Music for Wilderness Lake.*

Especially when considering our discussion on the experimental music scene of the 1960s and Schafer's aforementioned interest in graphic notation, his exercises for "listening and creating music" may even be considered a form of text notation. If performed, these exercises blur the lines between a musical composition (in the traditional sense) and a sonic learning experience. His text-based listening exercises from *A Sound Education* blur the lines between a musical composition (in the traditional sense) and a sonic learning experience, just as *Epitaph* used graphic notation in an educational way to expand student's musical creativity. This interest in education, graphic notation, expanding listening practice, and concern with social/environmental situations all connect to Schafer's acclaimed research in soundscapes and acoustic ecology. Perhaps without the drive to composer, Schafer would have never opened the

[215] Cage, *Silence*, 13-17.
[216] Adams, 34.

doors to these areas of sounds studies and the current research areas involving ecomusicolgy, zoomusicology, and more.

It was not until decades later with *A Sound Education* (1992) and *HearSing* (2003) that we see Schafer's educational approaches condensed into a book of exercises and "sound makings." In the preface to the exercises, Schafer states:

> Ofcourse I don't imagine them being performed systematically from start to finish. They are intended for casual performance as the occasion demands.[217]

Performing some of the exercises "out of order" might be difficult since some build upon the prior exercise (as seen Exercises 1-3). Some exercises are short, setting up the participant in a particular area to think about sounds from that environment, such as Exercise #12:

> Find a place where people are walking upstairs. Do the walkers going up make the same sound as the walkers going down? Which is louder?[218]

Exercise #42 connects to our previous discussion of graphic notation with Schafer instructing his participants through shapes/visuals and textures, which may be seen in Figure 3.11. In Exercise #70, seen in Figure 3.12, Schafer provides responses from his students. Here, we could only read the exercise as, "What does silence mean to you? Complete the sentence SILENCE IS…in any way you think appropriate." Schafer, however, continues to give examples of sentences completed by his young students as well as adult students. This blurs the lines between an exercise performed, and a case study to be pondered. Also, we see how such exercises could be performed alone, in a group, with an instructor or without an instructor. Schafer often interjects his own

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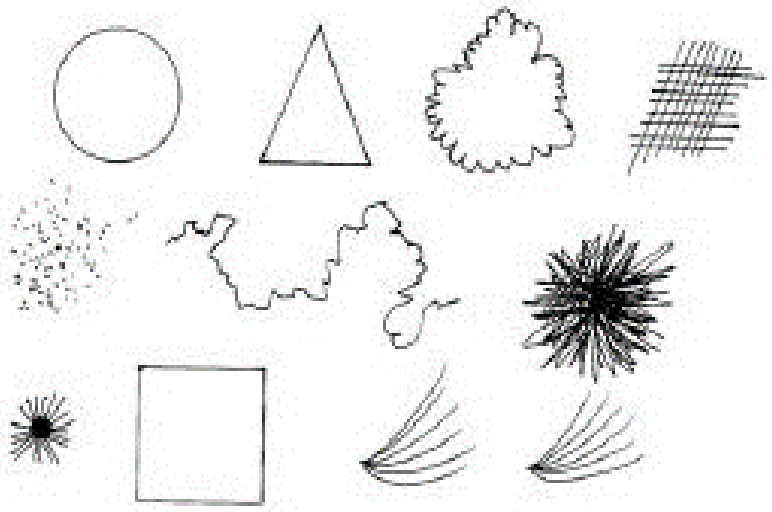
[217] Schafer, *A Sound Education* 12.
[218] Schafer, *A Sound Education: 100 Exercises in Listening and Sound Making* (Arcana Editions, 1992), 30.

personal experiences and speaks in first person, becoming the "guide" for the exercises, but the reader may disregard Schafer's voice and go with the instructions in their own way. Such exercises connect to Cagean concepts of listening and the role of the listener, the connection between the participants, the environment/nature, but also learning. Further, Schafer blurs the line between exercise and performance.

42.

Try finding sounds to match the following shapes and textures.



Can a sound be round or triangular? I once played sounds on a tape to a group of students and found that two very dissimilar sounds were considered round. One was church bells and the other was an air conditioner. You may have your own choices and they should provide material for an interesting discussion.

Figure 3.11: Exercise #42 from *A Sound Education*[219]

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[219] Exercise #42 from *A Sound Education.* Permissions from Arcana Editions.

70.

What does silence mean to you? Complete the sentence SILENCE IS ... in any way you think appropriate.

Here are some examples I've received from children:

Silence is keeping your mouth shut.
Silence is thinking.
Silence is daydreaming.
Silence is sleeping.
Silence is not talking when the teacher leaves and everyone talks.
Silence is darkness.
Silence is doing detention.
Silence is being interested in a subject.
Silence is doing your work.
Silence is keeping a secret.
Silence is watching a silent movie.
Silence is being afraid.

And some examples from adults:

Silence is only a state of mind.
Silence is as elusive as freedom or peace.
Silence is impossible.
Silence is being unconscious or dead.
Silence is tranquility.
Silence is boring.
Silence is what you hear after three hours of rock music.
Silence is isolation, terrible isolation.
Silence is emptiness.
Silence is when all I can hear is the ringing in my ears.
Silence is most noticed at times of intense fear.

The attitudes of the adults seem more negative than those of the children. These replies were all from North Americans. I wonder if other cultures might see more positive values in silence?

Figure 3.12: Exercise #70 from *A Sound Education*[220]

[220] Exercise #70 from *A Sound Education*. Permissions from Arcana Editions.

He questions the difference (or if there is even a difference) between exploring or practicing sounds and making sounds. The preface to the exercises encourages the performer to select exercises at will, but could they be performed as works themselves? The exercises of Schafer and the meditations of Oliveros connect in that they complicate the definition of a work. Do we practice these exercises privately, in a small group, or could they be placed in a concert hall? On may consider Schafer's exercises for "listening and creating music" a form of text notation. If performed, these exercises blur the lines between a musical composition (in the traditional sense) and a sonic learning experience.

Schafer's exercises resonate with some Fluxus works in that they question what is being heard and in what situation, but they differ in context. A Fluxus artist would perform the work, which would spark the audience to ask questions about it. Schafer would spark the question from the beginning. For example, La Monte Young's *Composition 1960 #7* requires the performer to hold a perfect fifth (B and F-sharp) for "a long time."[221] I would imagine approaching the situation in a different way. Schafer would ask "what if you hold a perfect fifth for a long time? How would the sounds change?" while Young actually draws a staff with the perfect fifth and tells the performer to hold it. Schafer was interested in life-long learning and "on-going musicianship," not only centered around children but for adults as well (which he speaks about in his book, *Creative Music Education*). Schafer sees music as a part of life and it changes just as lives change, experiencing new sensations that inspire new ideas. He also is honest about the difficulty of getting adults to improvise versus children, saying: "Things I had

[221] La Monte Young, *Composition 1960 #7* in *The Anthology of Chance Operations* (1963).

expected to accomplish in a modern city high school in two weeks would take two years with them [adult church choirs]."[222] He continues in saying:

> The pleasant serendipity that chance brings to over-organization ends in boring chaos when protracted indefinitely. The human being is ill-adapted to withstand the colossal boredom of chance...we are fundamentally anti-entropic, that is, random-to-orderly arrangers.[223]

Schafer's comments on the possibilities of boredom may be connected to Cage's thoughts on boredom as well as Dick Higgins's 1968 essay, "Boredom and Danger." Cage paraphrased Zen philosophies when he said:

> If something is boring after two minutes, try it for four. If still boring, then eight. Then sixteen. Then thirty-two. Eventually one discovers that it is not boring at all but very interesting.[224]

Dick Higgins's essay deals with using fear of monotony as intrigue for the performance and using simple situations in an exciting way.[225] Higgins, Cage, and Schafer would agree monotony in music can be beautiful, but fear is what stops people from trying to see that beauty in boredom. In the preface to the Proceedings: First International Conference on Acoustic Ecology conference notes, Tim Buell stated: "John Cage taught us that we must recalibrate our ears in order to re-experience our acoustic environment; Murray Schafer, through his compositions and writings, has provided us with the ways and means of *cleaning* our ears."[226] Schafer's exercises consistently take a simple sound and resituate it in a new way. He gives students the tools needed to create new styles and

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[222] Elayne Achilles, "Music Making Beyond the Classroom," *Music Educators Journal*, Vol. 79, No. 4 (Dec1992), 36.
[223] Ibid, 41.
[224] Cage, *Silence*, 93.
[225] Dick Higgins, "Boredom and Danger" from *Source: Music of the Avant-Garde, 1966-1973* (Issue 5), ed. by Larry Austin and Douglas Kahn.
[226] Tim Buell, Preface to Conference Notes, Proceedings: First International Conference on Acoustic Ecology (Banff, 1993).

musical material, allowing for the student to "discover something different" with hopes that they will continue to make music beyond school and into ordinary life.[227] Even in his later publications, *A Sound Education* (1992) and *HearSing* (2003), Schafer's educational approaches condensed into a book of exercises and "sound makings" and tie back into his thoughts on listening in order to create an idealized soundscape which diminished noise.

As we saw in *Ear Cleaning*, *The New Soundscape*, *The Book of Noise*, and the WSP *By-law Survey*, this awareness of noise and quest for listening runs throughout Schafer's publications, leading into his internationally acclaimed *Tuning of the World* (1977). While the earliest publications grew out of Schafer's accomplished career as a secondary and higher education pedagogue, it is with *The Book of Noise* Schafer is directly addressing the public, rather than students/teachers, about his fear of noise growth. His audience grows internationally with *Tuning of the World* and his approach to describing the sonic experience becomes more positive as compared to *The Book of Noise* or the WSP *Survey*. Even though it came out of Schafer's "personal distaste for…Vancouver's rapidly changing soundscape," *The Book of Noise* allowed Schafer to connect to the public about listening and hearing sounds within the environment. [228] By examining the realm of discourse and social reception about noise, Schafer and his team sought to redefined the way the public listens during a time when environmental sounds were becoming subject to control by the state through noise abatement. Without these publications, the field of acoustic ecology would not have emerged, nor would the

[227] Schafer, Preface to *The Thinking Ear: Complete Writings on Music Education*, (Arcana Editions, 1987).
[228] "The World Soundscape Project," https://www.sfu.ca/~truax/wsp.html (Accessed September 12, 2017).

growing dialogues between current, overlapping topics within ecomusicology, ecocriticism, and sound studies. Schafer urges us to listen to the changing sounds within our environments, even if we may or may not approve of the sonic changes occurring.

CHAPTER FOUR: MAX NEUHAUS AND THE EMERGENCY VEHICLE SIREN

"A better set of sound signals could not only save lives, but as world population becomes more and more dense they could also go a long way towards making future urban life livable."
-Max Neuhaus[229]

As we discussed in Chapter Two, Max Neuhaus is known to the art world as a pioneer in the creation of "sound installations," or site-specific auditory works emphasizing social interaction. He is recognized as one of the first artists to extend sound as a medium in the world of contemporary art.[230] Neuhaus was an experimental musician, serving as a leading interpreter of works for percussion and collaborating with some of the most esteemed musicians from the 1960s-avant-garde scene, such as Cage, Stockhausen, Feldman, Moorman, and beyond. He was interested in works dealing with the meaning of sound and noise through audience interaction. Chapter Two delves further into Neuhaus's performance of Cage's *Fontana Mix,* with understanding he was surrounded by not only his musical friends performing works by Cage, Stockhausen, Feldman, and beyond, but he was also involved in many experimental "events." Neuhaus took every experimental performance opportunity he could get, whether it was on tour in Europe, at the Judson Church, with Charlotte Moorman's Second Annual Avant Garde Festival of New York, the ONCE Festival or at Carnegie Hall. He not only premiered Feldman's *King of Denmark,* but also premiered works by Fluxus artists Joseph Byrd and Phil Corner. Particularly connected to the concern with noise, Fluxus was a loose group

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[229] Max Neuhaus, "Sirens," http://www.maxneuhaus.info/soundworks/vectors/invention/sirens/Sirens.pdf (Accessed on January 13, 2018),
[230] John-Paul Stonard. "Max Neuhaus." *Oxford Art Online* http://oxfordindex.oup.com/view/10.1093/gao/9781884446054.article.T097599#fullTextLinks/ (accessed May 23, 2017).

of artists with pieces foregrounding theatrical, visual, and acoustic premises with a goal to "blur life and art."[231] Many works took place outside of the traditional concert hall, connecting to the environment and acoustic space in innovative ways, and broke away from traditional sounds, challenging the listener to think of these auralities as "beyond noise." One of many examples of blurring life, art, and noise by a Fluxus artist is George Brecht's work, *Motor Vehicle Sundown* from 1960. This was a choreographed event where folks sat in their cars and were directed by notecards to honk their horns, switch their headlights on and off, and open and close their car doors. This connects to the notion that a great deal of noise complaints comes from traffic or car sounds, yet, this artist created an entire work around these sounds. Neuhaus's connection to the "network" of 1960s New York experimentalists influenced his need to go beyond a career of performing other people's works and into creating his own sound art.

By 1966 and until his death he focused primarily on aural works, which have since been called "sound art," a term that today covers a wide variety of work relating to sound and sonic perceptions.[232] Neuhaus's mission throughout his artistic career was to encourage listeners to "think about [sounds] in new and unexpected ways."[233] With over eighty sound works created (fourteen still installed),[234] a lengthy musical performance history (which includes an album release), and many essays recounting his experience in

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[231] Allan Kaprow's *Essays on the Blurring of Art and Life* (University of California Press, 2003).
[232] Alan Licht, *Sound Art: Beyond Music, Between Categories*, (New York: Rizzoli International Publications, 2007).
[233] Rory Logsdail, *Max Neuhaus – Times Square, 2002*, short film, Lynne Cooke interview (Firefly Pictures production for Rai Sat Art, 2002), http://www.max-neuhaus.info/timessquare.htm (accessed February 9, 2013).
[234] For a complete list of Neuhaus's sound works, please see: http://www.max-neuhaus.info/soundworks/list/ (Accessed March 23, 2017).

the sound world, so much has yet to be uncovered about the career of Max Neuhaus, especially in regards to the eco-political dimensions of his socially driven sound works.

Scholarship has yet to fully examine Neuhaus's attempt at redesigning the Siren systems used in police, ambulance, and fire vehicles across the United States. As discussed in Chapter Two, Neuhaus's interest in the aesthetics of urban sounds began in 1966 with his *Listen* series when he took his audience on listening walks around Manhattan.[235] This continued when he published what he considered the largest version of his *Listen* series, a *New York Times* op-ed piece titled, "BANG, BOOooom, ThumP, EEEK, tinkle" on December 4, 1974. In his article, he protested the "silly bureaucrats" of New York City's Department of Air Resources' "dangerously misleading" noise ordinances by stating the city's "noise propaganda" only made "more noise." Neuhaus's op-ed printed just two years after the United States Federal Government passed the *Noise Control Act*, marking a pivotal moment in not only the nation's concern for the impact of noise on humans, animals, and their landscape, but also in ways of which the nation could control noise.

This chapter will examine one of Neuhaus's projects following the themes of his *Listen* series: his Emergency Vehicle Siren Redesign Project. His project was a practical response he deemed necessary to rethink how humans have been conditioned to listen in a city. Beginning in 1978 and working concurrently with the Environmental Protection Agency's studies pertaining to the growth of noise across the nation, Neuhaus worked

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[235] For more information on Neuhaus's percussion career, see: Megan Murph, "Max Neuhaus
and the Musical Avant-Garde," Master's Thesis, Louisiana State University, 2013. http://etd.lsu.edu/docs/available/etd-05302013-132131/unrestricted/Murph.Thesis.pdf (Accessed February 7, 2017).

towards redesigning emergency vehicles with tests in New York City and Oakland, California. Lasting over a decade, his goal was to make sirens more sonically locatable during emergency situations. The history of the project has yet to be documented. Therefore, I will use primary source documents to aid in understanding the project's background, while also considering the siren's role in an urban environment's sound shape and how sound functions within a cityscape. The sources include interviews I conducted with witnesses of the Sirens Redesign and Neuhaus's colleagues (Ray Gallon, Owen Greenspan, Herr Lugus, Julia Prospero, and Wolfgang Staehle), and materials pertaining to the Sirens project (such as videos, drawings, photos, and project files) held at the Max Neuhaus Papers (Columbia University). I will also reveal two artistic endeavors that came out of documenting the Siren tests: The Airwork Group's NPR segment, "Emergency Sounds: New Song for The Siren" and Lugus and Staehle's TV production, "Art What?," both of which aired in 1981. The intention of this chapter is to demonstrate how Sirens is different from these works since it is a sound project intended to function more practically, not just artistically. Through Neuhaus's Sirens project, though never inaugurated, we will see how the public listens and how their listening is controlled while their temporal and spatial dimensions are continuously altered. We will see how the acts of walking or driving through a city becomes variable due to the shift in spatial and aural perceptions of the individual.

Siren Redesign Project Background and Logistics

On December 3, 1974, Neuhaus filed nonprofit paperwork for HEAR, Inc. (Hybrid Energies for Acoustic Resources, Inc.). It is likely Neuhaus used HEAR, Inc. as a platform to apply for grants and other funding to help create his *Times Square* piece, but to also acquire the permissions and materials needed for the Sirens Redesign project. The paperwork happened to be filed the day before his *New York Times* op-ed piece was printed, suggesting Neuhaus was thinking about noise in the city during the time he was brainstorming the nonprofit and the *Times Square* work.[236] By 1978, Neuhaus embarked on the self-assigned task to redesign siren sounds for emergency vehicles.[237] He felt sirens had a large impact on the way urban spaces function, how drivers and pedestrians communicated, and how general urban dwellers felt and physiologically perceived sounds. For Neuhaus, redesigning the sounds became a puzzle with unlimited outcomes. He saw siren sounds as having many problems, the most important one being they were "impossible to locate" and caused "sonic hysteria."[238] He recalled:

> Universally people say that they cannot tell where a siren sound is coming from until it is upon them. Unable to find the sound and becoming more nervous by its approach, many drivers simply stop and block traffic until they figure out what to do. Others ignore the sound until they are directly confronted by the vehicle, sometimes with lethal results. Obviously, it is not enough just to let people know there is a police car moving somewhere in the city. They need much more information if they are to know what to do.[239]

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[236] Calvin Tomkins, "Hear," *The New Yorker,* 64 (October 24, 1988), 116. Through HEAR, Inc. Neuhaus applied for funding through the Rockefeller Foundation, National Endowment for the Arts, and other private donors. As early as 1972, he was thinking about a sound project in Times Square, connecting contextually and environmentally to urban sounds.
[237] Max Neuhaus, "Sirens."
[238] Ibid.
[239] Ibid.

Here, Neuhaus comments upon the confusion associated with hearing siren sounds and the potential scenario of car crashes at intersections because drivers do not know whether to pull over, slow down, or keep going. He also suggests the emotional intensities affiliated with the sonic sounds:

> Police and firemen, reacting to the frustration of sounds which don't work, have demanded the development of louder and nastier ones. They have reached the point of saturation. And they still don't work.[240]

In the early 1980s, Neuhaus met with members of the NYC mayor's office and the NYC Police Department to explain his theories and propose his plans for redesigning siren sounds.[241] Through much convincing, Neuhaus obtained two police cars to experiment on. His liaison became Owen Greenspan, a NYPD patrol officer and member of the NYPD Applied Technology Unit.[242] Greenspan met Neuhaus through Paul Canick, who, at the time, was the Deputy Commissioner for Administration of NYPD with responsibilities involving administering the department's budget and purchasing. In an interview with me, Greenspan recalled:

[240] Max Neuhaus, "Sirens."
[241] Ibid.
[242] For information about Greenspan's career, please see: http://www.search.org/owen-greenspan-national-criminal-history-record-authority-and-advocate-of-improved-data-quality-to-receive-searchs-top-practitioner-honor-for-2016/ (Accessed October 31, 2016)

> Paul had an interest in technology and was himself an engineer… He oversaw large expenditures for the upgrading of the 911 police communications system and radio communications. I believe he took on the Siren project and it was assigned to me through him. I'm not sure if Max approached him or if there was an external connection. Max had some sound exhibits around the city and Paul might have met him there, but I just don't know. NYPD was frequently approached with all sorts of ideas…often they were dismissed. But Max's project was not. Here we had someone who said they wanted to redesign the sounds to make them more unique, pleasing and distinguishable from other city siren sounds (e.g. fire vehicles, ambulances, etc.) Police agencies typically bought siren equipping from private sector companies or as part of "police packages" mounted on Radio Motor Patrol (RMP) vehicles ("police cars"). Max's project must have been interesting enough for Deputy Commissioner Canick to agree to allow Max access to police vehicles and siren equipment for assessment, evaluation, and experimentation.[243]

Greenspan continued:

> Even with NYPD willing to cooperate with Max [Neuhaus] to access a police vehicle, it wasn't going to just allow Max to get behind the wheel. There would be legal issues, liability issues, and it is never wise to drive a marked police vehicle on public streets if you are not a member of the police department. We likely borrowed one or more vehicles from the Department's Motor Transport Division for Max to use.[244]

Having obtained test cars, Neuhaus went to Floyd Bennet Field (Brooklyn, NY) where he would complete his first major task of the Sirens project: experiment with the pre-existing siren sounds and their distances of sounds.[245] He wanted to understand how the pre-existing siren sounds worked. Neuhaus brought multiple artists to help video/audio record and document his experiments at Floyd Bennet Field. These artists assisting was a solution where everyone benefits; Neuhaus had extra help from the people who knew how to work with recording equipment and the artists had material for their art projects. Neuhaus was also interviewed about his sirens redesign concept during the

[243] Interview with Owen Greenspan (October 24, 2016).
[244] Ibid.
[245] Floyd Bennet Field was NYC's first municipal airport. At the time of Neuhaus's experiments, it had open air lanes to drive the test cars on. It is currently a park.

experiments and after by these artists. These artists were involved in two differing two art projects, both documenting the Sirens Redesign experiments at Floyd Bennet Field during the spring of 1981: 1) a twenty-minute NPR *All Things Considered* radio segment about the project called "Emergency Sounds: New Song For The Siren," which was created by the Airworks Group and 2) a four-minute video segment included in the cable art show "Art What?" for Manhattan Cable TV by Herr Lugus and Wolfgang Staehle.

The Airworks Group

In 1981, the Airworks Group produced a NPR segment on Neuhaus's sirens project called "Emergency Sounds: New Song for The Siren." The three artists associated with the Airworks Group were: Brian Flahive, Ray Gallon, and Julia Prospero.[246] They formed Airworks Group in the late 1970s and had their works played not only on NPR, but on WNYC throughout the early 1980s. In an interview with me, Gallon explained the Airworks Group would commission "artists to create works for radio packaged with interviews and so on."[247] Their piece on Neuhaus aired shortly after they joined him on his Floyd Bennet Field experiments in 1981. The group met Neuhaus through Charlotte Moorman.[248] In an interview with me, Prospero recalled:

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[246] Airworks Group ceased to exist beyond the 1980s. Today, Propsero is a retired art administrator and Gallon is the cofounder of the Transformation Society. Flahive is deceased and his obituary may be found here: http://www.legacy.com/obituaries/nytimes/obituary.aspx?n=brian-d-flahive&pid=134475010 (Accessed November 4, 2016).

[247] Interview with Ray Gallon (September 20, 2016).

[248] Neuhaus had been involved in experimental performances with Moorman during the 1960s. See: Murph, "Max Neuhaus and the Musical Avant-Garde."

> I don't remember how we started hanging out with Max, but we used to go to his studio and drink. In those days, we all drank a lot. Ray was involved with Charlotte Mooreman and I think it was through Charlotte that we met Max. He told us about the Siren project and we [the Airworks Group] said we were very interested in recording for our radio show. We went out to test the sirens with him several times at Floyd Bennet Airfield. We drove around and used the siren sounds and Max's explanations of the project…I thought it was the coolest thing.[249]

Once meeting Neuhaus, the Airworks group joined him on his experiments. Gallon elaborated on the logistics of getting Neuhaus to agree upon doing the Airworks Group show and helping drive the test cars:

> [Neuhaus] agreed to do [the Airworks radio show] but he didn't like to have recordings of his stuff because he said they were to be appreciated in [their] place…He basically said, 'if you're going to record, then you're going to help out.' So, he did these tests at Floyd Bennet Field, which was no longer in service. The old runways were long enough we could drive and do Doppler effects. We all went down to the police station motor pool and signed out three police vehicles. We had signs that went on top of them that said, 'test vehicle'…Of course even though we had "test" signs on the vehicles, everyone thought we were real police. People would stop us and ask, "I parked over there is that ok?" – it was really funny.[250]

Gallon further explained the experiments at Floyd Bennet Field:

> We were recording sounds of various tests. Basically, what Max had done was taken a synthesizer and connected it to the speakers of the normal siren of the police car. Because he wanted to test under real conditions: what would it sound like in a police car reproducing sirens used in a police car. In the [Airworks Group] radio piece, we demonstrate how people can play with a police siren and make all kinds of weird noises.[251]

Prior to the Floyd Bennet Field experiments, Gallon explained that Neuhaus brought the Airworks members along on an experiment with firetruck siren sounds:

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[249] Interview with Julia (October 24, 2016).
[250] Ray Gallon interview.
[251] Ibid.

> We also had a mechanical siren…that was on a firetruck; we rode on the truck, actually on a call…The driver of the firetruck said they used the siren to "push traffic."[252]

Notice the driver's description of the siren being used to "push traffic," suggesting the sonic event expresses a physical and aural dominance over the pedestrians and other passing drivers. We could consider this a "smaller" dominance, comparable to how officers use uniforms, batons, not to mention guns, mace, or even LRADs to take control of situations.

Neuhaus's objective of creating locatable sounds was reiterated by all the interviewees. Prospero noted:

> NYPD sirens always feel far too annoyingly loud…The sirens are just too invasive. I'm very sad it never came to anything. They still haven't solved the problem in NYC. I felt it was a very important project. I was glad that Max had a chance to be in history, even though nothing was instituted. He started the ideas rolling. He had such an interesting view on audio and how people react to sound.[253]

Neuhaus's concern for "locatability" connects to Feld's concepts involving acoustemology, which was discussed in Chapter One. Feld defines acoustemology as "an exploration of sonic sensibilities, specifically of ways in which sound is central to making sense, to knowing, to experiential truth."[254] Feld understands the interplay of sound and place, the public's experiences and memories of them being as "reverberant as they are reflective."[255] He sees the acoustic space as not only dimensional but also temporal; sounds may be heard "moving, placing points in time." The interplay of the sonic and

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[252] Ray Gallon interview.
[253] Julia Prospero interview.
[254] Steven Feld, "Waterfalls of Song An Acoustemology of Place in Bosayi, Papua New Guinea," *Senses of Place*, 95-6.
[255] Ibid.

visual influences the sensing, experiencing, and knowing of place.[256] Like Feld, Neuhaus was very aware of the place of auditory space as "the dispersion of sonic height, depth, and directionality" and space-time inevitably sounds in and as "comingness and goingness."[257] Neuhaus's creation had to fix the current model to help in the communication scheme, understanding what Feld describes as [siren] sounds being "forward, backward, side to side, and is heard in trajectories of ascent, descent, arch, level, or undulation."[258] Neuhaus's invention helped in questioning the intensity of the emergency, affecting the duration, location, and intensity of sound, as well as influencing the relationship between emergency vehicle driver and the public listener.

Gallon mentioned Greenspan's involvement and what the sounds would mean for NYPD:

> We recorded from inside and outside of the car, getting stationary positions and movement. There were a lot of people involved in the project in that both the police and fire departments were sanctioning the research Max was doing. There's a part when Owen Greenspan is talking about what the police department might do to actually implement the sound, which they never did. The basis for the project was because the electronic sirens that are used today are extremely difficult to locate in an environment like NYC. So you hear them but you can't find where they are. And the point is you want to get out of the way but you don't know where to go because you don't know where the sounds are. So the point was to make them less startling and easier to find.[259]

Gallon also recalled Neuhaus creating a modified alarm clock to show as an example of how he could design things better for the human's psycho-acoustic needs, but we do not know if Neuhaus actually showed this in the siren redesign proposals in the NYC mayor's office or NYPD offices:

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[256] Feld, 98.
[257] Ibid.
[258] Ibid.
[259] Ray Gallon interview.

> And Max used as an example of how psycho-acoustics functions, an alarm clock that he designed where the alarm clock produced white noise. And he set it to eventually get to your threshold of hearing. You set it for a time you want to wake up. And something like twenty minutes before you want to wake up, it would gradually ramp up until it reached your threshold. And at the time of awakening it would brutally cut off. And that's what would wake you. And instead of a sound startling you, instead, you would gradually wake up. This was one of the psycho-acoustic phenomena he had been studying.[260]

Neuhaus's Sirens Test Assisted by Airworks Group and Documented by Herr Lugus, Joachim Riedl, and Wolfgang Staehle

Documentation of the Airworks' trip out to Floyd Bennet Field may be seen on a three and a half-minute video segment of a thirty-minute show called "After Art" by Herr Lugus, Joachim Riedl, and Wolfgang Staehle. The "After Art" sirens segment may be seen here and on the videos housed in the Max Neuhaus collection at Columbia University.[261] Begin at 33:50 into the video to only view the clip involving Neuhaus's Floyd Bennet field experiment. This segment shows the Airworks' members escorting Neuhaus on the field and assisting with the siren tests. The members also asked him questions and shot footage of Neuhaus testing the sounds coming from the police cars, the same ones Greenspan obtained permission for him to use. Figure 4.1 shows the Airworks Group and Potato Wolf artists assisting with the tests while Figure 4.2 shows Neuhaus driving the test car.

[260] Ray Gallon interview.
[261] Herr Lugus, Joachim Riedl, and Wolfgang Staehle, "After Art," an episode of *Potato Wolf*, https://archive.org/details/XFR_2013-07-17_1A_01 (Accessed May 17, 2017). For the segment of Neuhaus, please start at 33:50.

Figure 4.1: Airworks Group and Potato Wolf artists assisting with Neuhaus's Sirens tests at Floyd Bennet Field in 1981.[262]

[262] Images include Ray Gallon, Julia Prospero, Herr Lugus, and others. Screenshots taken from "After Art." Top image screenshot at 35:05; Bottom image screenshot at 35:25.

Figure 4.2: Neuhaus driving the test police vehicle[263]

[263] Screenshots taken from "After Art." Top image screenshot at 34:45; Bottom image screenshot at 35:10.

At the beginning of the Sirens footage, Neuhaus explains how the project aims to "develop alternative warning sounds" for police cars, ambulances, and firetrucks, providing a solution to the "problems created by present emergency vehicle sounds:"

> The idea of the project is to modify existing siren equipment with new sounds, utilizing the existing equipment, but adding synthesis circuitry, which will make these new sounds. The project is really twofold: an aesthetic approach to the problem and a scientific approach. I'll be using a computer controlled sound synthesis system from this car and changing the sounds coming out of that [second car] by remote control. This system allows me to try many things and compare them. I can set up situations…save them, and compare them immediately with a past situation or a new situation. It's a way of keeping track and having a great deal of flexibility in trying sounds. It's important for us to really deal with the reality of the situation as well as the laboratory situation. To be outside [in] as real life situations as possible…trying very simple sounds to get very basic ideas of how sounds outdoors coming from moving vehicles act.[264]

He does this while standing at the vehicle, which may be seen in Figure 4.3. In Figure 4.4, Gallon is seen recording and assisting Neuhaus.

Figure 4.3: Neuhaus explaining the system to manipulate sounds on the police vehicle[265]

[264] Airways Group documentation of Neuhaus experiments, VHS, Max Neuhaus Papers, Columbia University Rare Manuscripts and Books Library, NYC. Box 21, Tape 3.
[265] Screenshot taken from "After Art" at 36:20.

Figure 4.4: Gallon assisting Neuhaus in the police vehicle with recording equipment[266]

In addition to Neuhaus's statements, a woman's voice is heard explaining some background and even fiscal plans for the project. This voice may be Julia Prospero. She states:

> Initial support for the project has been an enthusiastic. Planning grants from the NEA and the New York State Council of the Arts have funded preliminary research and on site testing. The NYPD has encouraged the project by providing lab facilities, research assistants, and test vehicles.[267]

To show this support, a spokesperson from the NYPD comments: "Heightening public responsiveness to emergency vehicles is important…this may be brought about with the sensitivity to the psychological and sensual well-being of all who are within ear shot will truly be an act of social progress."[268] The woman then goes on to discuss the social

[266] Screenshot taken from "After Art" at 36:55.
[267] Airways Group documentation of Neuhaus experiments, VHS, Max Neuhaus Papers, Columbia University Rare Manuscripts and Books Library, NYC. Box 21, Tape 3.
[268] Ibid.

response to sirens and show how Neuhaus's project, through HEAR Inc., intends to aid in these issues:

> The aura of panic and tension created around a city by emergency sirens is a constant psychological irritant. Behavior, attitudes, and emotions are unquestionably affected by the intrusion. Research has established there is a direct link between sound and human emotions and that we are highly sensitive to invasion of our acoustic privacy. The Society of Automotive Engineers conducted a study which concluded that reliance on present audible warning devices is not justified, yet there has been virtually no investigation into alternative sounds which could be more effective, less destructive and easier to live with. HEAR Incorporated has embarked on a program of research, development, and testing to attempt to correct this neglected area of public safety by combining the latest scientific and technological resources with the insight of the humanities.[269]

The full transcript of the experiment commentary documentations may be seen in Appendix C.

It seems the members of Airworks Group and the Lugus, Riedl, and Staehle team did not artistically collaborate or know each other well. Their common denominator was Neuhaus and the groups just happened to be working on separate documentations of the sirens project at the same time. Neuhaus used his younger artist friends to get the word out about his project. The Airworks Group created a NPR segment while Lugus, Riedl, and Staehle created the "Art What" TV segment.

[269] Airways Group documentation of Neuhaus experiments, VHS, Max Neuhaus Papers, Columbia University Rare Manuscripts and Books Library, NYC. Box 21, Tape 3.

Herr Lugus, Joachim Riedl, and Wolfgang Staehle's "Art What?"

As previously mentioned, the three and a half-minute video segment of a thirty-minute show called "After Art" by Herr Lugus, Joachim Riedl, and Wolfgang Staehle was part of a larger series called *Potato Wolf* that aired weekly on Manhattan Cable TV. Herr Lugus was the group's audio-visual engineer, Joachim Riedl was the journalist, and Wolfgang Staehle was the producer. Staehle was a member of another group of artists known as the "Collaborative Projects" or "Colab," that organized the *Potato Wolf* series.[270] In an interview with me, Staehle described the Colab as a group of about forty artists from the lower eastside who banded together to secure gallery spaces and funding for art projects.[271] Colab formed as an avant-garde collective in the late 1970s and still produces work today.[272] Staehle recalled:

> …in 1980 very few people had cable TV. Most of our other friends didn't have it so [the work] had to been shown in a bar somewhere downtown. I was a member of a group of artists called "Collaborative Projects" …One part of the activities a cable TV show called "Potato Wolf" that was once a week. Anyone who was interested in producing or creating a show could sign up to do half an hour late at night, Tuesdays if I'm not mistaken. It was produced in some small studio on 23rd street in New York City. Because most would record a live performance or whatever in front of the camera, my friend Lugus and myself thought it might be nice to produce a magazine format show. We pre-produced it. At the time, I was an assistant for a video professor at the school for visual arts so I had access to equipment and editing equipment. So, we produced this magazine…there were three shows. "After Art" – and then the follow up show was called "After What"...[273]

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[270] Wolfgang Staehle (b. 1950) is an artist known as a pioneer in the internet art communityb(founding the art project, *The Thing*) and for video streaming and capturing the collapse of the World Trade Center on September 11, 2001. For more information about Staehle, see: http://www.wolfgangstaehle.info/index.php (Accessed November 4, 2016).

[271] Interview with Wolfgang Staehle (October 17,) 2016).

[272] For more information about past and current Colab artists and artwork, see: https://collaborativeprojects.wordpress.com/ (Accessed November 4, 2016).

[273] Wolfgang Staehle Interview.

Lugus and Staehle called their show a "magazine" that resembled more of a collage of artistic ideas rather than a narrative piece, with the Sirens segment being just a snippet of the larger collage. Lugus recalled:

> We thought the Sirens project would make a great contribution to the show, so we met up in Max's studio to record an interview. I was the camera man. We did the show with our own money; we had very little production money to spend. Max told us about the upcoming tests he was going to do with the New York City police department and we got to go with him to the Floyd Bennet airfield to drive these real police cars back and forth to hear their sounds.[274]

Lugus also explained how Neuhaus analyzed the siren sounds, which involved a computer Neuhaus built:

> What Max did was bring his Forth language [programming] computer. This was basically a homemade device with a separate 6-inch monitor. He had a touch screen pen to go along with it, which I found so impressive… Max was just getting used to using his sound generating computer – today we could just use iPhones to do similar things with a 99 Cent downloadable app. I was amazed by his computer – that was big programming back in the 1980s, and I was very inspired by the purpose of the project.[275]

Lugus continued:

> He placed this computer inside the police car and interfaced it with the existing siren box. There was also a recording set up with two microphones that recorded the passing police cars in stereo so that he could later on listen and judge what he wanted to do to with the siren sounds. He was out there just documenting sounds. The point of all this was that the locatability of an emergency vehicle through its sirens in NYC was too difficult for anyone within the jungle of acoustic reflections in the city. If you had an ambulance coming from behind you, you wouldn't know where the sound was coming from; you wouldn't know it was behind you. The whole purpose was to develop new sounds and sound patterns to make things more locatable for people on the streets. Eventually sound devices would be installed in intersections of high traffic areas that would communicate with the police car sirens so that their sounds could help in identifying where the source was coming from, utilizing phenomena like the Doppler Effect and interference. That was the big project. What you see on the ["After Art"] video was still in its absolute infancy.[276]

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[274] Interview with Herr Lugus (October 23, 2016).
[275] Ibid.
[276] Ibid.

Greenspan also recalled the issue with locality of the sirens:

> …sirens certainly can be an issue. If you have a siren on and you come up to an intersection, people may not recognize the location of the siren and could be crashes. Max's siren redesign could have had safety benefits. I'm not an engineer, but NYC sound bounces off buildings, so directionality is definitely a challenge.[277]

Reports of crashes and accidents because of locality have been well documented by scientists, which Neuhaus referenced in the "Art What" video.

We see from the "After Art" video a visual documentation of Neuhaus's Floyd Bennet Field experiments as well as interviews with Neuhaus himself. "After Art" shows how Neuhaus was analyzing sounds to later invent a new siren sound. Lugus, Riedl, and Staehle saw the project as something worth including in their art show, perhaps as an initiative that bridged the boundaries between art, sound, and social function. Throughout the footage, Neuhaus justifies his work by citing data on emergency vehicle sirens, traffic/collision reports, and locality issues for both the pedestrian and other drivers. Not only does this video and the NPR segment serve the artists that created them, but serves Neuhaus in getting the information out about his project, undoubtedly in hopes for future funding and positive endorsement.

[277] Interview with Owen Greenspan (October 24, 2016).

***All Things Considered* Interview:**

[For the full transcript of this *All Things Considered* interview, see Appendix D].

In addition to the Airworks' NPR segment, another NPR segment premiered about the sirens project, on *All Things Considered* with Neuhaus interviewed by Noah Adams.[278] A recording of this segment may be found in the Max Neuhaus Papers, but unfortunately the cassette case was mislabeled, using the Airworks' title and confusing the two NPR segments.[279] I would estimate this *All Things Considered* segment took place in the late 1980s since it includes excerpts of the new siren sounds Neuhaus later developed, while the Airworks Group would have never heard the final product. The sounds heard on the *All Things Considered* segment have bell-like qualities, differing from the sirens we still hear today. Neuhaus described his new sirens in relation how listener would experience it and from which direction:

> It's not so much the importance of the emergency but how the emergency vehicle relates to you. We're actually not just projecting a sound 360 degrees around this car; we're projecting a sound shape that has different characters at different vectors from the car, in other words from different directions from the car. You can hear the back of the car as opposed to the front of the car. The front of the car sounds more urgent than the back of the car...[280]

Neuhaus goes on to describe not only has a different timbre than present sirens, but has different patterns. His new siren did not utilize continuous sound; rather, it alerts its listeners by using many bursts of sound with some silences in between:

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[278] For more information about Noah Adam's NPR career, please see: http://www.npr.org/people/1936703/noah-adams (Accessed May 16, 2017).
[279] Max Neuhaus Papers, Columbia University Rare Book and Manuscript Library, Box 38 CD 25.
[280] Ibid.

> The second problem, which is documented as the most dangerous one, is that two drivers of two different emergency vehicles going to the same emergency around a blind corner can't hear each other. And frequently they hit each other and fatal accidents are caused. The location and this problem actually tie together in a solution. We locate sound sources by the way they begin. So, a sound with many beginnings lets us automatically be able to find it much easier than any kind of continuous sound. The reason two drivers can't hear eachother in two different emergency vehicles is because that the sound is continuous. Their sound is much loader in their car than any other sound could be. So, by making bursts of sound with silences in between we solve both of those problems. We give a lot of beginnings and we allow some silences.[281]

In addition, Neuhaus suggested the new siren do not have to be as authoritarian as present sirens. Rather, it should be a guide for the listener to know which direction an emergency is coming from:

> In general, there's no reason the sounds have to sound alien and artificial. A level of urgency can be gotten across without making a sound from outer space. If you're twenty feet in front of the car it's a very uncomfortable sound but if you move ten feet out of the direct path of the car, then it's not an uncomfortable sound. It's building a contour, I guess, of what I call urgency. I've always thought that if there was a visual element in our city as obnoxious as the current siren sound, then it would never have lasted. Sound is a tremendously powerful element at determining how we feel. It's very easy for us for example for us to sit in a room with a color on the wall we don't like. Most of us would try to leave a room with a sound we can't stand. But somehow we allow this color to color our lives.[282]

In the interview with Staehle, he voiced his concern for Neuhaus's new siren being not controlling enough when he stated:

> [The Sirens] sounded much too friendly for the New York cops. You're always used to aggressive hauling on the streets constantly. And the [beeps] and those things were cute… when I heard it at the airfield I thought there was no chance the NYPD would use this .[283]

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[281] Max Neuhaus Papers, Columbia University Rare Book and Manuscript Library, Box 38 CD 25.
[282] Ibid.
[283] Wolfgang Staehle interview.

As seen in the NPR "Emergency Sounds: New Song for The Siren" and the television collage "Art What?," Neuhaus's experiment were documented by his colleagues. After testing these siren sounds, Neuhaus went on to manipulate, modify, and create new sirens based around distance, pitch, patterns of bursts/silences, and loudness, which we hear in the *All Things Considered* interview. His goal was to create sirens that interacted with its environment. If a vehicle was moving towards a pedestrian, the siren would get higher in pitch; if it was moving away, the siren would get lower. The faster the vehicle was going, the faster the burst of sounds. He even took into consideration how the sirens would interact with the density of a city and its buildings full of windows and glass. Nevertheless, how did Neuhaus get from the Floyd Bennet Field experiments to his final product?

By 1988, Neuhaus found financial support from the International Conference on Design in Aspen. He obtained enough funding to spend two months near Salton Sea in the California desert.[284] A documentary housed at in the Max Neuhaus Collection from 1989 shows some footage of Neuhaus in the desert running siren tests.[285] In the documentary Neuhaus stated:

[284] Neuhaus, "Sirens" essay.
[285] Documentary on Sirens Project (1989), Max Neuhaus Papers, Columbia University Rare Manuscripts and Books Library, NYC. Box 18, Tape 4.

> …I see the sounds that we have by accident in dense cities color the city with a kind of hysteria, but we are so naive about sound, generally the public mind is naive about sound, that is it never occurred to anybody that there could be something different. It's possible to get ones' attention without being hysterical. In many ways if we think about social communication, it's much more effective to communicate un-hysterically. One of the silliest aspects of the current sounds would be silly if it wasn't tragic is that they're all continuous sounds. And for the driver of the car going to an emergency, he can hear nothing except the sound of this siren at the top of his car, which means he can't be warned at a blind corner about the arrival of another emergency vehicle going to the same place. Some of the most traffic accidents where all the officers in two police cars have been killed just result from the fact that there's no space in the sound. It's such an obvious idea.[286]

Here, Neuhaus discusses the continuous sound model in the *All Things Considered* interview, where he argues it would be better to have a siren that would instead utilize bursts of sounds with silences. He continues in the documentary:

> So, we've tried to make sound patterns where are easy to locate; that kindof utilize the built-in mechanisms we have in here [points to brain] to find things. And also, we're doing a very special thing, we're projecting one sound out the front and one sound out the back. The front sound is more urgent than the back sound, so even when the vehicle is out of sight, a hearer can tell how much danger he's really in or what's the likelihood of this vehicle interfering with his path.

Because access to the actual redesigned Siren is unavailable, it is difficult to know the precise mechanics and technology of the devise. What we know about Neuhaus's redesign comes from his essays, interviews, and the videos and recordings from his experiments. Neuhaus was clear he wanted a the siren concept to be simple: as the emergency vehicle turns towards the listener, it would give the allusion of sounds sweeping up; as the emergency vehicle turns away from the listener, the sounds sweep down. This would help the listener know where vehicle and sound was coming from.

[286] Documentary on Sirens Project (1989).

Neuhaus's weeks in the California desert involved listening and altering the sounds of sirens through his computer, which may be seen in Figure 4.5.

Figure 4.5: Neuhaus near Salton Sea, California (1989)[287]

Once he had his siren redesigned, Neuhaus had to test his sounds in a city to see how they worked, so he went to downtown Oakland. Under the guise of making a movie, he commandeered a section of the city for several evenings, hiring off-duty local police and fire personnel as drivers.[288] Neuhaus interviewed these drivers and was relieved to hear positive feedback. The drivers all acknowledged the need for a better siren system like the one Neuhaus created. One officer in the documentary stated: "People stop all the time when they hear the sirens…half the time they don't know if they should pull over or just

[287] Photograph from the Max Neuhaus website, http://www.max-neuhaus.info/soundworks/vectors/invention/ (Accessed May 24, 2017).
[288] Neuhaus, "Sirens."

stop where they're at…that's where problems run into."[289] A second officer responded "[hitting the brakes is] the natural reaction of everybody…they drive along and they look in their rear-view mirror and they hit the brakes…"[290] Another officer even commented on how he felt while driving with the new siren:

> It's very pleasant driving the car from what I'm used to. Previously, in other types, inside of the car is unbearable. But this is very pleasant. You can drive and concentrate. This is a good system.

The police officers and firemen felt a decrease of tension while driving with the new sirens as compared to the old. Nevertheless, Neuhaus's sirens never took off. Even when in 1989 the New York City Police Department asked to test out the new sirens in their vehicles, no manufacturers would take on Neuhaus's project, leaving it to dismantle.

Neuhaus reflected on the role of siren sounds for the urban dweller by saying: "The passage of a siren through a city is one of the largest sonic events in daily life. In dense urban centers, it usually occurs more than one hundred times a day. In cities like New York, it is almost always present."[291] After the experiments, Neuhaus concluded that even the electronic sirens of his time were created from old-fashioned systems. He felt "instead of searching for better sounds, the existing sounds were simply copied and the limits of the old sirens were passed on to the new generation:"[292] He explained:

[289] Documentary on Sirens Project (1989).
[290] Ibid.
[291] Ibid.
[292] Neuhaus, "Sirens."

> In New York, before the turn of the century, the firemen themselves pulled the wagons carrying pumps and ladders, while one of them ran ahead through the congestion shouting and blowing a trumpet. After the turn of the century, the mechanical siren was invented – the slow rising and falling sound which we associate with air-raid warnings. It was mounted on the wagon and activated by cranking a handle. When fire trucks became motorized, someone had the idea of putting a whistle on the end of the exhaust pipe and letting the engine-exhaust gasses blow it. It made such a horrendous shriek that it was finally outlawed. With the arrival of electricity, the mechanical siren was motorized. The operator made it sound with a pedal on the floor; when he pressed it, the sound would begin to rise; when he released it, the pitch would fall. In the 1960s, when it had become practical to make loud sounds electronically, our present-day siren arrived. The sounds of the mechanical siren and horns were synthesized electronically and projected from loudspeakers, mounted on the roof of the car.[293]

This connects to Mike Goldsmith's concept of noise in the city from his book, *Discord* as discussed in the literature review. Goldsmith discusses how noise was used to control others through various battles and actions, dating back to the Greeks and Chinese.[294] Neuhaus comments:

> Looking at the history of these [siren] devices, it becomes clear that the sounds themselves have never actually been designed. They are, instead, the product of whatever could be found to make a loud noise.[295]

Neuhaus's distaste of making just another "loud noise" resonates with Hillel Schwartz's aforementioned "Four Part Narrative of Noise" and Attali's concepts of power dynamics of involving noise and deconstructing old codes to foster true creativity within social functionality.

Sirens may be used to engrain hysteria or fear into the listener. It creates a lack of communication between the two parties. What about people with hearing disabilities? What about the Californian officer who test drove Neuhaus's new sirens? He recalled

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[293] Neuhaus, "Sirens."
[294] Mike Goldsmith, *Discord: The History of Noise* (Oxford University Press, 2014). See Chapter 3, which discusses the use of noise in battle, noise in science, and noise in action.
[295] Neuhaus, "Sirens."

feeling more calm with the new sirens as opposed to the current versions. If Neuhaus's sirens would have been implemented in all police and emergency vehicles across the nation, perhaps officers would feel sonically less anxious, approaching situations and emergencies with a clear mind, potentially diminishing the police brutality of our day.

The Sirens project connects to resent research on mobile sounds. In the *Oxford Handbook of Mobile Music Studies*, editors Sumanth Gopinath (music theorist) and Jason Stanyek (ethnomusicologist) address societies "on the move" and the sounds "in motion" or "in flux" with it. In the third chapter of volume two titled, "Of Sirens Old and New," musicologist Alexander Rehling analyses the power sirens have over humans, from the ancient siren songs of mythology, to the invention of the 19th century siren by Charles Cagniard de la Tour, the Weber electrical siren from 1885, and "The Curdler" anti-riot sonic weapon from 1981.[296] Rehling discussed how composers Henry Cowell, Karlheinz Stockhausen, and Edvard Varèse used or were influenced by siren equipment in their work as well as how theorists Horkheimer and Adorno critiqued siren songs within capitalist structures. Rehling acknowledges the electrical siren being used not merely as "a device warning of approaching dangers, but the mechanism that is liberated began to represent a distinct danger in its own right."[297] For example, the use of sonic weapons during protests or war with UN studies from the 1960s-1970s revealing the sound weapons created physiological effects such as chest pain, gagging, and blurred vision.[298] Even with "non-violent" devices such as "The Curdler," which, when sounded, produced

[296] Alexander Rehding, "Of Sirens Old and New," *Handbook of Mobile Music Studies Volumne 2,* ed. Sumanth Gopinath and Jason Stanyek, (Oxford University Press, 2014).
[297] Rehding, 92.
[298] Ibid, 93.

an "unpleasant throbbing sensation in the crowds" so that the crowds would "panic and disperse."[299] Such devices were not intended to "violently harm," but were incredibly unpleasant and will be discussed more in Chapter Five.

In the book, *Thinking in an Emergency* (2011), historian Elaine Scarry reminds our nations and their citizens that they have "both the responsibility and the ability to protect one another," both within the boundaries of their own nation and across national boundaries.[300] She reveals the realities of "emergency politics" and emphasizes the ethical concern dealing with the equality of surviving an emergency. Drawing on an array of philosophies and theories, Scarry proves that thinking and rapid action during an emergency are compatible. Practices that many dismiss as habit or protocol instead help in revealing how an emergency may unfold, the weaknesses in working together, and the role everyone, including nations or governments, during the emergency. Scurry sees how regular citizens are often undermined by their nations and these citizens could reclaim power by breaking habits in response to protect one another.[301] She proclaims that all people must think and deliberate, rather than to "give up thinking" in an emergency, especially when authorities fail to actively guide its people in a given crisis.[302] This may be compared to the communication endeavors in Neuhaus's Siren redesign. The original siren was a habitual protocol to control traffic/pedestrians during an emergency, but perhaps also sonically frighten and make people aware of authority. Neuhaus's redesign

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[299] Rehding, 93.
[300] Elaine Scarry, *Thinking in an Emergency*, (W.W. Norton & Company, Inc., 2011), xi. This book was published as part of the Amnesty International Global Ethics Series by the United Nations' General Assembly.
[301] Ibid, 108.
[302] Ibid, 9.

may have been an effective way to break the original practice. Yet, its continual association with the original siren may be part of the reason why it was not manufactured on a national level.

Neuhaus's commentary on the sonic events in daily life may be seen not only in his "Sirens" project but throughout his musical career and every sound installation he created. Ulrich Loock, a curator of the Kunsthalle in Bern, wrote "listening [and] perceiving in Neuhaus's work is an activity, a question of orientation, of differentiating, of exploring, of shifting…"[303] Neuhaus's concern for the public's relationship with the existing siren resonates with Michel De Certeau's ideas on the tactical uses of power in urban space. The original model transmitted from an authority's vehical reveals the alarming control it had over its listeners. With the sweeping and changing sounds of Neuhaus's redesigned Siren, we see temporal and spatial dimensions altered; the act of walking or driving through a city becoming variable due to the shift in spatial and aural perceptions of each individual.[304] The redesigned Siren is intended to have a more meaningful conversation between the signal and its receiver. When Neuhaus heard siren sounds from Italy, France, and Spain, he commented:

> Siren sounds in Europe and the rest of the world are not hysterical, but one must admit they are a bit banal. These more melodic sounds seem to have been determined by the instinct of amateur musicians on the engineering staffs of the siren manufacturers. Perhaps they got so carried away with creative rapture that they forgot to engineer them. The European sounds share all the functional problems of American sirens; they are also very difficult to locate.[305]

[303] Loock, 92.
[304] Michel de Certeau, "Walking in the City," *The Practice of Everyday Life* (University of California Press, 1984), 91-92.
[305] Neuhaus, "Sirens."

Greenspan said he appreciated Neuhaus because he exemplified the skills of technology transfer, when one takes an old technology, develops it to make it better, and disseminates it to the masses. Gallon also commented on how Neuhaus had the talent for "anticipating" trends before they became popular. Gallon continued:

> Max's work is really important from my point of view because it combines a number of things that had been the preoccupation of American composers from the second half of the 20th century – the thing that Max did was create a total synthesis of these things. He's interested in one at the same time: acoustic space, the sound environment (ecological and acoustic), artistic expression, and therefore composition (the word compose does not imply anything original, but you're working with material that's already exists)…Max managed to combine all of those things: the ear of a musician, the mind of a sound designer, the spatial conception of a sculptor…and what was really interesting to me about Max, although he was this incredibly egocentric person, he wanted his works to be anonymous. He wanted them to be discovered. I always thought that was interesting about him, a sortof cognitive dissonance. The other thing I'd say about Max is he was great fun to have a beer with and to just jaw with. We would talk about all kinds of things, usually about music or something similar.[306]

[306] Ray Gallon interview.

End of the Sirens Project

On March 24, 1989, Neuhaus and Frederick G. Reinagel,[307] under the non-profit, Siren Sounds, Inc., submitted a US Patent application titled "Emergency Vehicle Audible Warning System and Method."[308] The Patent was officially approved on April 30, 1991 as #5,012,221.[309] In October of 2001 Neuhaus sued Sound Alert Technology for plagiarizing his sonic concepts.[310] Police departments never officially used the sirens, nor were they heard beyond the *All Things Considered* interview and Neuhaus's documented experiments. While the project was backed by the NYPD and officers in Oakland, the product never got manufactured. Even with the patented product, Neuhaus never had the opportunity to socially change the sounds we hear within a dense urban space. He ended his "Sirens" essay by stating: "Although you can lead a horse to water, you cannot make him drink."[311]

Throughout this chapter, I have been citing an essay Neuhaus wrote in 1991 called "Sirens" where he reflected on the project history and concept. Later, he updated the essay for the journal *Kunst + Museum Journaal* and it was published in 1993. Neuhaus also drew sketches depicting how his sirens would work in a cityscape. These

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[307] Perhaps Neuhaus's lawyer.
[308] "Patent Application and Pictures of Claims," Max Neuhaus Papers, Box 11, Folder 9, Columbia University Rare Book and Manuscript Library, New York, New York.
[309] Max Neuhaus and Frederick G. Reinagel. Emergency vehicle audible warning system and method. US Patent 5,012,221. Filed March 24, 1989 and Issued April 30, 1991. http://patft.uspto.gov/netacgi/nphParser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearchbool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=%22Emergency+Vehicle+Audible+Warning+System+Method%22&OS= (Accessed February 6, 2017).
[310] Letter to Lawyers. Max Neuhaus Papers, Box 11, Folder 10, Columbia University Rare Book and Manuscript Library, New York, New York. Sound Alert Technology was patented in the UK, for more information, see: (http://sound-alert.co.uk/)
[311] Neuhaus, "Sirens" essay.

sketches, which may be seen in Figure 4.6, were exhibited March 18 – 22 April 2007 at the 66 East Gallery in New York City. His drawings were part of an exhibition titled "Sirens: An Evolution from Water, through Water, to Water." If we consider Neuhaus beginning this project in 1978-2007, it would have spanned his entire career. One could also argue themes that made Sirens Redesign possible, such as noise and listening in the city began in 1974 with his op-ed piece or even earlier with his first 1966 listening walk. Perhaps, the Sirens Redesign was Neuhaus's magnum opus.

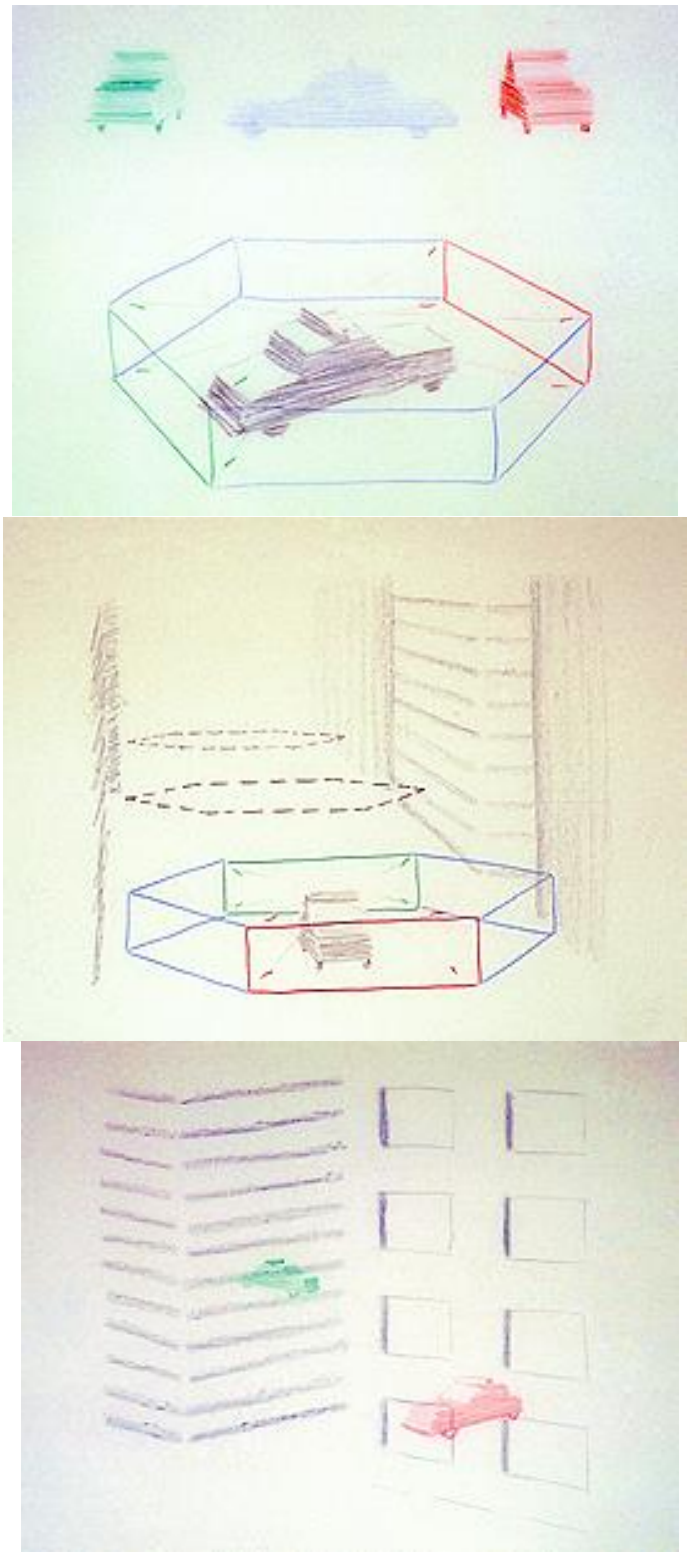

Figure 4.6: Max Neuhaus, Siren Sketches, 1991[312]

[312] Max Neuhaus, *Siren Sketches*, 1991. Permissions from Silvia Neuhaus.

Table 4.1: SIRENS TIMELINE

1966 *Listen* series begins (first "Listening Walk")

1974 NYT op-ed published, Non-profit HEAR, Inc. founded, *Times Square* began

1977 *Times Square* installed

1978 Sirens Project Begins

1981 May – Floyd Bennet Field Experiments

1981 Airworks Group airs NPR Segment and "Potato Wolf" airs TV Segment

1981 Gallon states siren sounds were tested in Oakland

1986 Neuhaus Bell Labs lecture on sirens

1988 California desert/Oakland experiments

Late 1980s *All Things Considered* segment was aired

1989 Documentary (housed at Columbia University) on sirens created

1989 US Patent application submitted

1991 Sketches of the Siren Project completed

1991 Neuahus's "Siren" essay completed

1991 US Paton accepted as #5,012,221 (April 30, 1991)

1993 "Siren" essay published in *Kunst + Museum Journaal* (Amsterdam) vol. 4, no. 6

2001 Law suit against Sound Alert Technology

2007 Sketches shown at 66 East Gallery in New York City

CHAPTER FIVE: THE FURTHER CHALLENGES OF NOISE

I will arise and go now, for always night and day
I hear lake water lapping with low sounds by the shore;
While I stand on the roadway, or on the pavements grey,
I hear it in the deep heart's core.
-W.B. Yates[313]

The goal of this chapter is to re-assess and theorize the implications of Neuhaus's and Schafer's works and their integral relationship to noise abatement policies through the lens of more contemporary theories of noise. As seen in the introduction, noise's relationship to society has been conceptualized in many ways across the disciplines. In the 20th century, the United States was the forerunner of research with the EPA's Office of Noise Abatement and Control and the establishment of the *Noise Control Act* in 1972. I argue that there is a disconnect between the ways in which noise is addressed by technical and science-based researchers (scientists, doctors, engineers, etc.) versus those in the humanities and social sciences (geographers, social theorists, anthropologists, historians, etc.). Both areas acknowledge that the advancement in technology made the environment louder, "requiring" noise abatement. Interestingly, technology also enabled the sonic explorations for composers like Varèse, Cage, Stockhausen, Schafer, and Neuhaus, implicitly connecting these artists with public debates about noise. This chapter will delve further into the studies of noise from technical and social perspectives and integrate how these ideas intersect with the work of Schafer and Neuhaus.

[313] W.B. Yates, "The Lake Isle of Innisfree," 1888, https://www.poets.org/poetsorg/poem/lake-isle-innisfree (Accessed December 16, 2017).

Noise Abatement

Historian Emily Ann Thompson provides a fascinating history of noise in New York City during the turn of the 20th century in her *The Soundscape of Modernity: Architectural Acoustics and the Culture of Listening in America, 1900-1933*. She captures the transition of sounds in urban areas becoming more motorized and amplified in such a concentrated city, already growing from the boom in globalization and migration. Thompson also traces NYC's abatement history beginning with Julia Barnett Rice's Society for the Suppression of Unnecessary Noise (1906)[314] and the installment of the Noise Abatement Commission (1930).[315] The commission tested the decibels of street sounds, funded by Bell Telephone Laboratories,[316] AT&T, and other entities. The goal was to identify and measure the sounds across the city and print their results in the *New York Times* for the public to see.[317] City zoning was used in the war against noise as a way to legislate the landscape; to control "not only its physical appearance by also the behavior of those who inhabited it."[318] By geographically "separating the different social functions that unplanned cities naturally superimposed – residentially, commercial, industrial – city planners sought to rationalize the urban environment in a way that would

[314] The society worked to help protect hospitals and schools from street noise.
[315] Emily Ann Thompson, *The Soundscape of Modernity: Architectural Acoustics and the Culture of Listening in America, 1900-1933* (MIT Press, 2004).
[316] Neuhaus worked at Bell Laboratories in New Jersey from 1968 to 1969. By these years, he had exited the world of performing contemporary music and went to Bell Labs to learn "how to construct electronic circuits that generated sound." Neuhaus's colleague, composer James Tenney, also worked at Bell Labs earlier in the decade to continue exploring electronics within experimentation. For more information see: Murph, "Max Neuhaus and the Musical Avant-Garde" and Calvin Tomkins, "Hear," *The New Yorker* 64 (October 24, 1988), 114.
[317] Thompson, 158.
[318] Ibid, 125-126.

improve the performance of each sector."[319] The goal was to present a "antidote to urban moral decay and social disorder."[320] Measuring the sounds supported segregation throughout the city, but it also helped in transforming public perception of noise and heightening awareness, even having whistle blowing traffic police replaced by traffic lights to help with the flow of transportation sounds. The trend of noise abatement, however, soon was lost in the shuffle of urban issues especially with economic strife of the Great Depression and the political turmoil of WWII on the horizon.

Figure 5.1: Noise Abatement Commission of NYC measuring truck, 1930[321]

[319] Thompson, 125-126.
[320] Ibid.
[321] Ibid, 161. Truck managed by sound engineers from AT&T and the Johnson Manville Company. Permissions from MIT Press Subsidiary Rights Manager.

As discussed in the introduction, by the 1970s with the *Clean Air Act*, noise was put on the same plane as atmospheric pollution connecting noise abatement with anti-pollution, thus the concept of noise pollution was born. Robert W. Collin's book, *The Environmental Protection Agency: Cleaning Up America's Act* (2006), summarizes the history of the EPA and their implementation of twenty-nine acts, the *Clean Air Act* (1970) being the most pertinent for this project.[322] Collin's book briefly mentions the *Noise Control Act* (1972), in conjunction with the *Clean Air Act.* The focus of the act was to help establish coordination for federal research and activities within noise control, establish Federal noise emission standards, and provide information to the public regarding noise reduction impacts.[323] This act intended to reduce noise pollution in urban areas and minimize noise-related impacts on psychological and physiological effects on humans, wildlife, and landscape, while leaving minor noise threats up to local and state governments. Findings of the Environmental Protection Agency backed the *Noise Control Act*. The EPA pled before Congress that 30 million Americans were exposed to non-occupational noise high enough to cause hearing loss and 44 million Americans lived in homes impacted by aircraft or highway noise.

Began as a monograph in 1950 under the same title, psychologist Karl D. Kryter's *The Effects of Noise on Man* (1970) investigates how the ear digests sound, how speech is masked by noise, hearing impairment and hearing loss, perceived noise and its

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[322] Robert W. Collin, *The Environmental Protection Agency: Cleaning Up America's Act* (Greenwood Press, 2006).
[323] Environmental Protection Agency, "Summary of the Noise Control Act," http://www.epa.gov/laws-regulations/summary-noise-control-act (Accessed January 29, 2016).

annoyance, environmental noise, and psycho-physiological effects of noise. He begins the book by defining noise as "signals that bear no information and whose intensities usually vary randomly in time" and states that "as far as man's auditory system is concerned, there is no distinction to be made between sound and so-called noise."[324] Kryter's book deals with noise could really being referred to the "unwanted effects of sound" and the intensity of sound as it relates to speech, hearing, communications, and the environment.[325] The same year, Clifford R. Bragdon wrote *Noise Pollution: The Unquiet Crisis* (1970).[326] Bragdon was a professor of city planning in the college of Architecture at the Georgia Institute of technology in Atlanta. His scholarship dealt more with identifying and "quieting the crisis" of noise within urban spaces.[327]

Henry Still's book, *In Quest of Quiet: Meeting the Menace of Noise Pollution, Call to Citizen Action* (1970), has a chapter titled "The Sound of Music…"[328] In this chapter and throughout the book, Still romanticizes a "quiet land and a quiet of life," which is more beneficial than the chaotic crumble of hi-fi sounds and children quarreling. To Still, noise is a sound without value. His chapter on music deals with sounds that are "good" and "bad," based upon taste and decibel levels. Still states: "Rock, electronically amplified to unbearable levels, deafens a generation of young people before their time"

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[324] Karl D. Kryter, *The Effects of Noise on Man,* (NYC: The Academy Press, 1970), 1.
[325] Ibid.
[326] Clifford R. Bragdon, *Noise Pollution: The Unquiet Crisis,* (University of Pennsylvania Press, 1970).
[327] Bragdon, "Quieting the Crisis: Some Solutions," *Noise Pollution: The Unquiet Crisis,* 173-190.
[328][328] Henry Still, *In Quest of Quiet: Meeting the Menace of Noise Pollution, Call to Citizen Action* (Harrison, PA: Stackpole Books, 1970).

without trying to understand the music itself.[329] Noise and rock will be discussed further in Chapter Six. Edward B. Magrab's *Envrionmental Noise Control* (1975) offers a series of engineering lectures dealing with the mathematics and concepts of acoustics, hearing, and perceived sounds. Magrab includes some commentary on the Walsh-Healey Act and other policies, but primarily focuses on the engineering required to control various sounds.[330] The following year, *The Impact of Noise Pollution: A Socio-Technological Introduction* (1976) fused engineering methodologies with economic and environmental policy.[331]

Patrick Cunniff's aforementioned 1977 book, *Environmental Noise Pollution*, was published the same year as Schafer's *Tuning of the World* and Attali's *Politics of Noise*. Similar to Magrab (1975) and *A Socio-Technological Introduction* (1976), Cunniff's research focuses on how to measure sound and provides information on the physics, mathematics, and decibel analytics, required to determine ways to diminish sound. Developed out of a University of Maryland course on noise pollution, Cunniff breaks down equations to help the reader better understand the theories behind the methods. He only spends a few pages explaining the "annoyance" of sound. His few statements connect to the social constructs of noise, but lack in in depth philosophies. For example, the first sentence of his chapter on "Outdoor Community Noise," he states: "The type of community generally reflects its environmental noise climate…wealthy communities are

[329] Still, 46.
[330] Edward B. Magrab, *Envrionmental Noise Control* (John Wiley & Sons, Inc., 1975).
[331] George Bugliarello, Ariel Alexandre, John Barnes, and Charles Wakstein. *The Impact of Noise Pollution: A Socio-Technological Introduction.* (Pergamon Press, 1976).

quieter than poor communities."[332] He then goes on to show figures and statistical indicators of these communities without digging into the socio-economic reasons as to why his statement is true. A few years later, Clifford R. Bragdon published another book, *Noise Pollution: A Guide to Information Sources* (1979), which references over a thousand sources pertaining to noise pollution.[333] His bibliography is divided into eight main sections: (1) physiological effects; (2) behavioral effects; (3) abatement: engineering and architectural controls; (4) abatement: governmental and administrative controls; (5) community noise; (6) environmental impacts; (7) acoustics; and (8) education. The sounds that Bragdon found to affect a "community" the most were not social sounds, but were primarily transportation and traffic sounds. This shows us two things: 1) transportation is what people complained about the most and 2) transportation is what scholars researched the most leading up to this publication in 1979. Bragdon includes road, air, rail, freight, and water transportation in this section as well as other noise sources that deal with construction equipment, military weapons, and even hazards associated with children's toys.

While this dissertation's focus is primarily on noise within North American cityscapes, research has been conducted across the globe in recent years. In the preface to the aforementioned *Environmental Urban Noise*, Amando García states:

[332] Patrick Cunniff, *Environmental Noise Pollution* (John Wiley & Sons, Inc., 1977), 128.
[333] Clifford R. Bragdon, *Noise Pollution: A Guide to Information Sources* (Michigan: Gale Research Company, 1979).

> Environmental noise has become one of the greatest sources of nuisance in developed countries. This type of noise, briefly defined as unwanted sound, fills everything and affects everybody. People are constantly exposed to varying noise levels in their everyday lives, for instance, when working using transport, resting at home or during leisure activities.[334]

He concentrates his research on noise in urban spaces and found that 25% of the Europeans living in urban cities are exposed to noise levels over 65 decibels. While García acknowledges the loud sounds from nature (volcanos, hurricanes, storms, etc.), he remains steadfast that the most aggressive sounds are related to human activity and inventions.[335] In this order, he finds road traffic to be "the most important and generalized noise source in all urban areas" of developed countries, followed by air traffic, railways and industry, construction, and sirens/security signals.[336] García's research not only provides the data needed to understand the effects of noise on urban dwellers, but also provides equitable solutions for protecting everyone's hearing. This connects to the WSP's survey as mentioned in Chapter Three (see Figures 3.5-8).

García states "technology is able to solve most of the problems related to noise," but the economic cost and social repercussions of the solutions "limits or prevents their practical applications."[337] He continues, "The formulation of an effective policy to control urban noise should be based on techniques of planning, management, and economy." Not only could road traffic, air traffic, and other industrial areas be improved by governments, but community noise could be improved by upgrading wall, door, and floor insulation in apartments/homes, work places, and bars/venues/nightclubs/sporting

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[334] Amando García, ed. *Environmental Urban Noise* (WIT Press, 2001), i.
[335] García, 2.
[336] Ibid, 3-5.
[337] Ibid, 183.

events, to help everyone live a more quality life. García also suggests methods involving noise tax charges to corporations and individuals who fail to have vehicles or equipment properly maintained.[338]

Noise Historiography: Bridging the Divide

Ten years later, ecologist John Stewart addresses what noise means for world citizens of the 21st century in his book, *Why Noise Matters: A Worldwide Perspective on the Problems, Policies and Solutions* (2011).[339] Stewart's team bridges the divide between technical and social fields by providing research from a variety of backgrounds (environmentalism, law, politics, and philosophy). In reference to US noise, he states:

> The US has a history of activism against noise going back nearly 100 years. And, today, it has more anti-noise pressure groups than anywhere else on Earth and almost certainly the most rules and regulations covering noise. Yet...it continues to be a very noisy place.[340]

The last chapters of the book deal with neighborhood noise, "piped music," and "making change happen" regarding noise. In the piped music chapter, author Nigel Rogers discusses "muzak" or elevator music as noise and what that means for the listener. The last chapter of the book outlines how noise is inevitable and cannot be avoided moving into the future because it is a by-product of growth, industrialization, mobility, and the consumer society. While Stewart never goes into this direction, his idea of noise as a by-

[338] García, 205-220.
[339] John Stewart, et al. *Why Noise Matters: A Worldwide Perspective on the Problems, Policies and Solutions* (Earthscan, 2011).
[340] Stewart, 27.

product of growth connects to theories on the outcomes of capitalism and works by historical geographers and urban political ecologists.

With the rise in technology and globalization, the approach to regulating noise or sound has become more complicated. Recently, Hillel Schwartz and David Hendy have approached the canon of noise asking who, what, when, where, why, and how-type questions. Who was making the noise? Who was calling it a noise? In what context did the noise occur? When did the noise occur? Where did the noise occur? Why is the sound considered a noise; why isn't it just called a "sound"? How would once describe the noise? Which groups of people consider this sound a noise and which groups would not? Schwartz is critical of the fact that "noise" is often divided into two types of definitions: (1) a more objective term that investigates the decibels levels or high volumes of a sound, and (2) the subjective one that is based around personal preference and social constructs. We see even musicians like Cage discuss these contradicting definitions on an artistic level. One man's noise is another man's symphony; Cage leaves the window open to hear new things. In his *Taxonomy of Noise,* Schwartz defines a "Four-Fold" history of noise:

1. The chronicle of changing soundscapes as each era and culture lives within its own ambience of sounds.
2. The earmarks of sounds as pleasant or obnoxious; how each era, culture, and rank hears or does not hear and welcomes or disdains the sound around it.
3. The career of noise as variously apprehended; how each era, culture, occupation, or discipline reconstitutes the notion, the nature of noise.
4. Narratives of noise making and noise breaking; how noise in each era, culture, and class, has been denounced or defended, defiantly produced or determinately deadened.[341]

[341] Hillel Schwartz, "Taxonomy of Noise," Lecture, Massachusetts Institute of Technology (MIT), Cambridge, MA, (Fall 2010), http://www.zonebooks.org/sound/schwartz_sound_03.mp3 (Accessed April 21, 2017).

In these four points and throughout his works, Schwartz sees there is no definitive definition of noise that is not wrapped up in classist/subjective structures influenced by capitalism/industrialization.[342] Schwartz continues to define "Three Types of Noise (For English Speakers):"

1. Sounds so faint we must strain to hear them and doubt ourselves into hearing of them or argue among ourselves about their audibility or use them to tease/torture. (i.e. "The Noise of Almost Nothing")
2. Sounds that are annoyingly indefinable.
3. Sounds that are identifiable and intrinsically upsetting.[343]

With the three types of noise, it is impossible to not consider several physiological and psychological components, such as: the aging ear and hearing disabilities and emotional implications of silence/noise (associations with angels, ghosts, aliens, etc.). Schwartz notes what is considered unwanted sound is specific to generation, culture, ethnicity, political affiliation, religion, etc. He sees individuals and groups being upset from sounds because they are afraid, or relating the sound to a traumatic event, the sound is unfamiliar or inappropriate for a certain situation, or the sound is constant, feels like it will not end and drains hope. Schwartz explains how the mind relies on sound to situate itself and the ears have mechanisms to protect us from decibels that are too loud, which is why we cannot clearly hear some sounds.[344] This is a concept that Neuhaus relies heavily on during his Sirens project, which I discussed in Chapter Four.

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[342] A political concept Tom Kohot also elaborates on in his "Noise Pollution and the Eco-Politics of Sound: Toxicity, Nature and Culture in the Contemporary Soundscape," *Leonardo Music Journal* (25): 5-8, 2015.
[343] Schwartz, "Taxonomy of Noise."
[344] Ibid.

Noise and the Turn towards Children's Literature

Towards the end of Schwartz's *Making Noise,* there is a fifty-page bibliography of children's books pertaining to noise and sounds, both fiction and nonfiction.[345] Noise pollution was an especially popular topic of children's books during the 1980s and 1990s. The books focused on educating young minds about what noise is and its effects on the environment. One could argue that these books suggest ways of disciplining the listening the noise-making practices of children. Donna Bailey's *What We Can Do About Noise and Fumes* is an example of a nonfiction, educational children's book dealing with noise pollution. This further connects to Schafer's music education books but also his own illustrations used in his books. Published in 1991, Baily's book was part of a Franklin Watts Press children's series dealing with environmental issues of the time such as litter, recycling, water waste, energy, etc. Each book was intended to outline the cause of the topical issue and discuss issues while providing projects the children could complete to better understand the issue.

Bailey opens the book with a white family walking their dog outdoors, noticing how much people often enjoy the "fresh air and the country sounds" of the countryside. She continues by stating these sounds are becoming lost in the noise of busy towns made by machines and traffic. Her book illustrates how we measure sound waves through frequency as seen in Figure 5.2.

[345] See: Schwartz's "Noisy Children's Books Bibliography," *Making Noise*, available for download on MIT Press, https://mitpress.mit.edu/books/making-noise, (Accessed January 8, 2018).

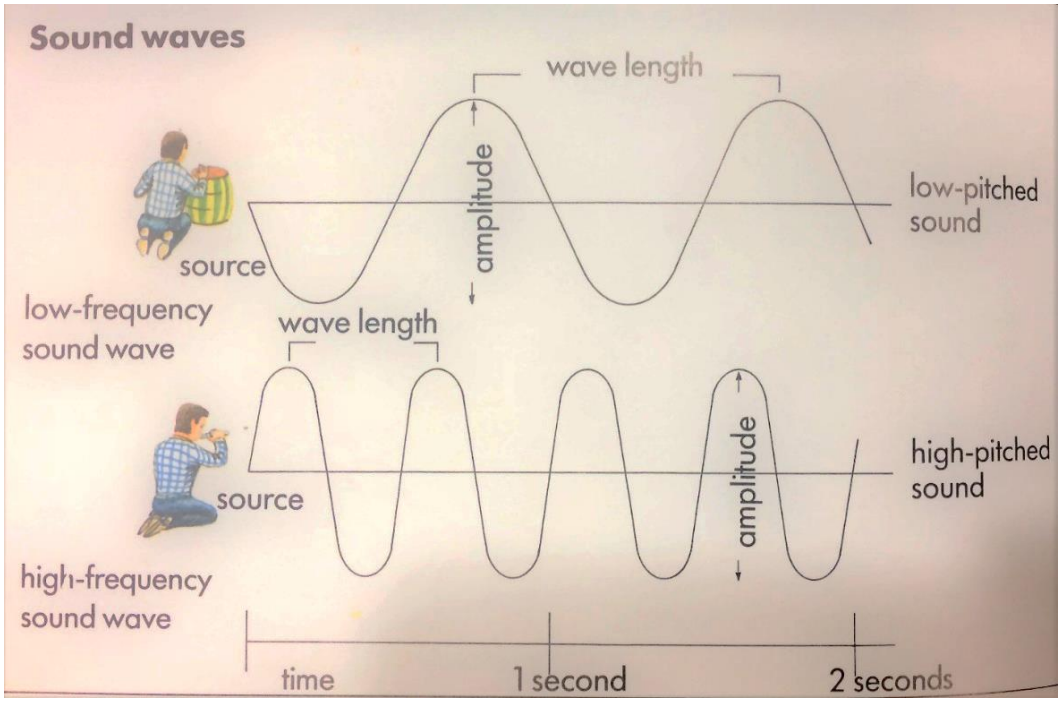

Figure 5.2: "Measuring Sound Waves"[346]

Bailey also discusses how we measure the loudness or intensity of a sound through decibels (dBs) and the threshold of audibility (also called the threshold of hearing). This is the point at which sound starts to be heard per person. Because the lowest and highest decibel each person can hear is situational, so is their physical and mental reaction to the sound, interfering with their threshold of feeling.[347] This is illustrated in Figure 5.3.

[346] Donna Bailey, *What We Can Do About Noise and Fumes* (Franklin Watts Press, 1991), 8.
[347] Bailey, 11.

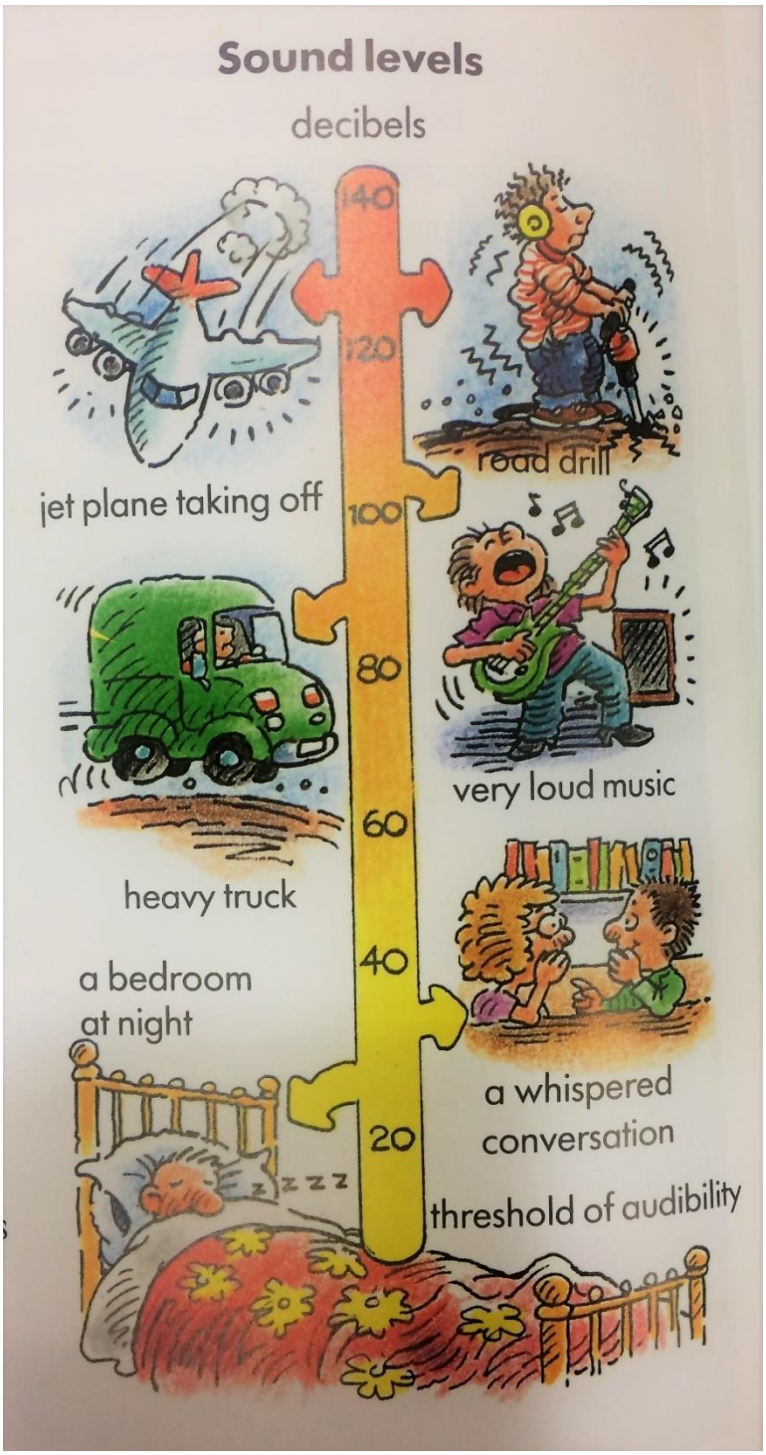

Figure 5.3: "Sound levels and decibels"[348]

[348] Bailey, 10.

Bailey acknowledges "when sound is unwanted we call it noise, but the difference between a pleasant sound and an unwanted noise can depend on who is listening to it."[349] She then encourages the reader to be cognizant of wearing earphones when listening to music or drawing the curtains at night when watching television to not disturb the neighbors. At the end of the book, Bailey offers a glossary of terms and definitions, and activities for children to do to explore sounds around them. Examples include making a list of sounds around them for ten minutes in the morning, afternoon, and night, comparing this list with a friend; taking a sound survey of friends to see what kinds of sounds they like and dislike; grouping sounds into "natural" and "unnatural" sounds, etc. These activities are very much in the vein of Schafer's activities described in *Ear Cleaning* (discussed more in Chapter Three) and beyond. Furthermore, Bailey also echoes Schafer by glorifying nature sounds over urban noises and promotes the notion of noise as an environmental issue, but is still earnest in her attempts at having children notice and being mindful of the sounds that surround them as well as those they may impose on others. This children's book, Schafer's *Ear Cleaning* and other works from Schwartz's massive bibliography demonstrates how this dual approach to conceptualizing noise was targeted towards children on a mass scale.

[349] Bailey, 12.

Discussions of Noise and Nature

In Marie Suzanne Thompson's dissertation, "Beyond Unwanted Sound: Noise, Affect and Aesthetic Moralism," she breaks down noise into two definitions: "subject-oriented" and "object-oriented." "Subject-oriented" noise is when the listener constitutes a sound as unwanted, undesirable, detrimental or unpleasant; and "object-oriented" noise constituted through acoustic qualities.[350] To move beyond the limitations of these definitions, Thompson applies theories from Michel Serres and Gilles Deleuze to construct a more "non-dualistic *ethico-affective*" definition of noise. This involves understanding the complexities of how sounds may be perceived by a variety of people or groups; then, how those sounds are judged as noise. Rather than referring solely to the negative, subjectivity of sound or a type of sound, Thompson redefines noise as a "productive, transformative force" and a "component of material relations." This alternative definition is "intended to be broad enough to allow for noise's variable manifestations – loud and faint, audible and inaudible, perceptible and imperceptible – while also avoiding a collapse into a relativist endpoint where noise can be anything to anyone."[351]

This resonates with Schwartz, who also discusses the delay between the sonic action and the cognition of what is heard.[352] Both Schwartz and Thompson understand that there is a delay or transformation between when the noise is made and how the listener comprehends the noise. This concept of noise in terms of "natural" and

[350] Marie Suzanne Thompson, "Beyond Unwanted Sound: Noise, Affect and Aesthetic Moralism," Ph.D. Dissertation (Newcastle University, 2014), 5.
[351] Ibid, 6.
[352] Ibid.

"unnatural" sounds is connected to definitions of nature itself. Numerous scholars, such as Smith and Conron have grappled with the definitions of nature, which has influenced how ecomusicologists have approached studying sound and music in its relationship to nature and the environment.

Within ecomusicology, [353] Aaron Allen and Kevin Dawe's recent work, *Current Directions in Ecomusicology: Music, Culture, and Nature* (2015) is the first book to explain the field and offer perspectives of ecomusicology while providing a range of theories and methods within its chapters, most of which engage with issues of sustainability or environmental crisis.[354] This is relevant since most literature pertaining to noise abatement and noise pollution positions it as a serious environmental problem. Jeff Todd Titon's 2013 article, *The Nature of Ecomusicology*, spends a great deal of time explaining the changing views on nature as seen by economists, scientists, and humanists. He sees nature as continuously developing, resulting in many reactions and more specializations. Titon explains Kevin Dawe and Aaron Allen's earlier works dealing with the paradox between socially/culturally constructed view of "nature" and the scientific/economic rationality of nature. These scholars seem to be against an exploited

[353] As mentioned in the "significance of topic" section, ecomusicology is the merging of ecocriticism and musicology; an academic field integrating the study of music/sound, culture/society, and nature/environment. Although it has been vigorously growing within the last decade, basic ecomusicological ideas may be drawn to Charles Seeger and the emergence of Ethnomusicology as well as to the rise of environmentalism in 1970s America (influencing not only an artist's response to their environmental situation, but also cultures as a whole and researcher's methodologies). Often, ecomusicological discourse prompts complex challenges affiliated with music, sustainability, and political and socioeconomic concerns.

[354] Aaron Allen and Kevin Dawe, ed. *Current Directions in Ecomusicology: Music, Culture, and Nature* (Routledge, 2015).

anthropocentric and economic view of nature, favoring a socially constructed view of nature. However, Ana Maria Ochoa-Gautier has cautioned against ecomusicological scholarship that takes the non-human environment as primary subject because this approach risks separating "humans" from "nature."[355]

This creates another layer to defining nature as compared to Neil Smith's theories. In his *Uneven Development*, he explains: (1) how humans have viewed nature from an external prospective, that is, as something which exists outside of society; (2) how humans have viewed nature from a universal prospective, as something which includes them; (3) how nature has been approached within science as something to be studied or manipulated; and (4) how the poetics or imagery of nature symbolizes hope, promise, power, matriarchy, nostalgia, divinity and much more.[356] Smith asserts our understanding of nature cannot be understood when separating society from it. He also sees capitalism as being the keystone for how nature is viewed in its complexities and contradictions.[357] Titon defines ecomusicology as the study of music/nature during a time of environmental crisis and admirably advocates the co-presence of place, sound, animals, and humans, which will allow for sustainable life on the planet.[358] These developments and critiques

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[355] Ana Maria Ochoa-Gautier, "Acoustic Multinaturalism, the Value of Nature, and the Nature of Music in Ecomusicology," *boundary 2*, Vol 43, Issue 1 (2016), 107-141.
[356] Neil Smith, *Uneven Development: Nature, Capital, and the Production of Space* (University of Georgia Press, 1984).
[357] Smith, ibid, 7.
[358] Jeff Todd Titon, "The Nature of Ecomusicology," *Música e Cultura: revista da ABET* (Vol 8, No 1), pg. 8-18. In his blogs, Titon continues his views on the co-present and examination of sound/place regarding David Henry Thoreau. He speaks about how Thoreau fully experienced the pastoral when he would play his flute integrated with the sounds around him at Walden Pond. Thoreau's sounds were not a representation of the pastoral as Beethoven's *Sixth Symphony* was. Thoreau listened and observed continuously, writing about the penetration of sounds within nature: animals, insects, birds, wind, rain,

within ecomusicology reveal that our human relationship to the environment and with "nature" could still be further theorized.

Another tendency in the literature about noise is to contrast noise with silence. For example, social theorist Hillel Schwartz and historian David Hendy question how silence gets compared to noise, often being idealized over noise, and connected to notions of "serenity," "quietude," and "peace" within a natural setting. Art critic Tom Kohut takes these idealized notions of nature a step further when he questions the separation of urban/ modern sounds with rural/nostalgic sounds and argues that nature has often been used as a weapon of power during noise abatement's history, reflecting the larger structure of social control. He unpacks the "utopia of the natural sound" romanticized by Schafer. Many scholars have followed suit, including audio culture scholar David Toop and cultural theorist Steve Goodman have criticized this idealized view of nature and also see nature as a weapon of power connected specifically to Schafer.[359] Kohut asserts that noise pollution was fabricated to ensure regulations of sound would further disconnect people from their space, place, themselves, and each other. For example, he states:

bells, whistles, wood chopping, etc. Thoreau wrote sound (not just music) is the "language which all things and events speak without metaphor." Titon seems to agree with Thoreau and advocates the sustainability of these sounds.

[359] David Toop, *Sinister Resonance: The Mediumship of the Listener* (Bloomsbury, 2011); Toop, *Ocean of Sound: Aether Talk, Ambient Sound and Imaginary Worlds* (London: Serpent's Tail, 1995); Steve Goodman, *Sonic Warfare: Sound, Affect, and the Ecology of Fear* (The MIT Press, 2012).

> As with the difference between a pleasant perfume and an ungodly reek, the difference between melodious sound and a noise is a social difference: *They* are smelly and noisy, while *we* are clean and quiet. However, there is a further characteristic that unites odor and noise: Specifically, the difficulty in determining its source and the concomitant difficulty in *making it go away*.[360]

In Karin Bisterveld's history of noise abatement and popular social order, the author argues that lower classes are seen as "indifferent to noise" and their hellish relationship with noise goes beyond legal, scientific, and engineering strategies because the lower class became "desensitized" to noise. Kohut is similar to Smith in seeing nature used as a weapon of power. To summarize, nature is often associated with idealized views of silence, quiet, and peace by those privileged enough to experience it as such; noise is then seen as a pollutant, a toxin that harms utopian nature, contaminating the ideals of the ruling class. Even further, this raises the question if ecomusicologists, associated with the Schafer/acoustic ecology lineage: is silence idealized and/or is noise/noise pollution included as responsible for environmental crises as other issues.

Noise and the Private vs. Public Debate

Another concern that has been addressed in the literature has to do with how sound defines and mediates the public and private spheres. This issue raises many questions. How do we treat sounds created or controlled by private sectors (i.e. construction companies, retail stores, restaurants, etc.) that certainly affect the public and vice versa? What does it mean when private corporations sponsor or fund the research

[360] Tom Kohut, "Noise Pollution and the Eco-Politics of Sound: Toxicity, Nature and Culture in the Contemporary Soundscape," *Leonardo Music Journal*, Issue 25 (December 2015), 5.

behind noise pollution. What does it mean when an individual uses the privacy of their home or car to play music loudly, but does so in a way that impacts those around them, subjecting him/her to a complaint involving the police? Additionally, how often do complaints about loud music playing from a car or a home become implicated with biases about youth, race, gender, class, etc.

Another major issue has to do with how music/sound in urban spaces affiliated with tourist areas can become considered noise for locals. Take for instance the heart of New Orleans, where brass bands, parades, and street performers perform not only to make money from tourists, but to continue local traditions and cultural expressions. The French Quarter Citizens, a neighborhood association for the "preservation of residential quality," invest in keeping the noise levels down in their neighborhood. Their "Stop the No¡se" campaign allows for their members to pay to have an expert to "measure the nuisance" in their area.[361]

From 2012-2015, the FQC along with other city organizers and businesses from the French Quarter, advocated for quiet hours and restricted decibel levels during certain zones, times, and days. The French Quarter residents and business owners wanted: "…a single administrator, responsible to the Mayor, Council, and public, accountable for all aspects of the [noise] program; regular reporting to the Council and public; making 85 decibels the upper permitted limit (Federal OSHA requires ear protection for employees exposed to higher levels over the work day); establishing more objective standards for

[361] "Stop the No¡se," The French Quarter Citizens website, http://www.frenchquartercitizens.org/stop-the-noise-help-keep-the-vc-in-the-vieux-carre/#!prettyPhoto (Accessed December 20, 2017).

sound measurement; and other provisions aimed at diminishing the impact of sounds disturbing residential enjoyment."[362] The city noise ordinances, however, were never officially ironed out to their request, and the New Orleans City Council ended up taking on a new initiative through the New Orleans Health Department called "Sound Check."[363] This program encouraged musicians, business owners, and listeners to be aware of the decibel levels they are creating around them and are digesting themselves.[364]

"Sound Check," is the private company hired by the city which provides service by going out to a location to examine sonic safety of areas by request. This initiative raises many public health questions, but also connects directly to economy, music making, tourism, and racial/classist implications. Often, the musicians playing on the streets in the French Quarter are black/creole locals, living off tips. If they are restricted to hours, zones, and decibels, then their "income" is affected. Also, many tourists come to New Orleans just to hear the street bands and parades. With new regulations, parades cannot be spontaneous, but have to be registered and the fees keep increasing. To celebrate life, death, or marriage through parading, has now become a very expensive thing in New Orleans. Because of these changes, there have been increases in musicians'

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[362] "New Noise Ordinance in Final Stages – We Hope," French Quarter Citizens website http://www.frenchquartercitizens.org/new-noise-ordinance-in-final-stages-we-hope/ (Accessed December 20, 2017).

[363] For an overview of the years the New Orleans noise ordinance were under review, see: http://www.nola.com/politics/index.ssf/2012/04/french_quarter_noise_ordinance.html; http://www.nola.com/politics/index.ssf/2014/02/furor_over_noise_ordinance_con.html; http://www.nola.com/politics/index.ssf/2015/03/new_orleans_noise_sound_music.html; https://www.bestofneworleans.com/gambit/the-new-orleans-sound-ordinance-is-back/Content?oid=2783842 (Accessed December 20, 2017).

[364] "New Orleans Sound Check," City of New Orleans website, https://www.nola.gov/health-department/sound-check/ (Accessed December 20, 2017).

unions and advocacy for local, musicians of color.[365] Such conversations about noise regulations and their effects on musicians ties us into the next section of this chapter, which deals with how musicians have defined and used noise in their works, both within Western Classical music and popular music. These examples also connect to Schafer's early Canadian by-law work with the WSP. I wonder if Schafer and his WSP researchers considered how increasing noise regulations and/or modifying a soundscape could potentially alter a city's sonic identity, such as these recent policies in New Orleans?

Noise, Silence, Class, and Racial Divides

Examples of how the ruling class have exploited nature and place to gain control over others may be seen in the work of Jules Boykoff. In "The Leaf Blower, Capitalism, and the Atomization of Everyday Life," Boykoff uses the leaf blower as a "spatial metaphor" to explore how "technology can reorganize space and alter social relations" with the goal of creating anti-social experiences.[366] In 2006, leaf blowers existed in over 6 million USA homes, not to mention institutions, stores, and companies, with the goal of landscaping and keeping the grounds or yard neat. The blowers typically spill 17 million gallons of gasoline onto the ground in one summer season, which can seep into the soil, water, or evaporate into the air.[367] Boykoff explains the USA, a capitalist society which involves leaf blowers, as one which cuts off people from their physical environment and

[365] For example, WWOZ's "Musicians' Resource List" offers information on housing, grants, unions, medical care, and instrument care: https://www.wwoz.org/musician-resources (Accessed December 20, 2017).
[366] Jules Boykoff, "The Leaf Blower, Capitalism, and the Atomization of Everyday Life," *Capitalism Nature Socialism*, Vol. 22, No. 3 (September 2011): 95-113.
[367] Ibid, 95.

from each other because not only do the sounds from the machine are used to suppress these relationships, but the people wealthy enough for a leaf blower are usually middle class and/or higher. Leaf blower owners need to have the lawn space, money, and time to use the machine; they either use the machine themselves or they hire someone else to take care of the landscaping for them. They also help pass "the social buck" since many times the owner blows debris into their neighbor's yard having an "out of sight, out of mind" mentality, causing more pain on the other person than themselves.[368] Boykoff relates this "passing of the social buck" back to capitalism, seeing the worker as an "other" or nonhuman, reminding us the worker is only meant to produce, often upholding the grunt of situations, with the causer of the grunt not having to intervene because it's just the way it is.

Another example of the manipulation of nature, sound, and social relationships occurs in the 2016 Jeep Grand Cherokee commercial. The thirty second video begins panning over snowy topped mountains, with year woodwinds and strings playing elongated harmonies around a Dminor[13]. A man's narrating voice enters describing scenes from nature, "The cool of the day…," just as we see an image of the black Jeep Grand Cherokee approach, driving through the mountains. The voice continues saying "the scent of the trees…and the sounds from all sides of an orchestra performing entirely for you," as we see a tall waterfall with the Jeep driving up near it. A man drives the Jeep while a woman stares out the vehicle in awe at the waterfall, the music has changed from elongated harmonies to pizzicato arpeggios in the strings. The forward movement of the

[368] Boykoff, 99.

music leads the Jeep through a tunnel where it exits, now in the middle of a city. As the vehicle passes by a construction zone and the sound of a worker using an industrial tile saw, the narrator proclaims, "The Jeep Grand Cherokee, with active noise cancellation to turn any street into a symphony." The woman rolls up her window to block out the sight and sound of the construction zone and cuts on the stereo to play classical music. The commercial ends with the couple driving away from the city, the orchestra paying a tonic chord, and the narrator stating, "the most awarding, rewarding SUV ever."[369]

Seen and heard are divisions between nature vs. the city, silence (or serene classical music) vs. noise, and middle class (Jeep driver) vs. working class (Construction worker). We may also argue it is patriarchal, where the man is driving and selecting the destination while the woman is to simply comply and go along with the ride. Her internalized misogyny has taught her to appreciate the sights and sounds of nature over the city. She paused to admire the waterfall. This symbolizes her gratitude and respect for nature and perhaps for her male driver who drove her to this location and likely purchased the Jeep. We are left to wonder what other areas of her life the male driver has created for her, with and without her permission. She also shuts out the industrial sounds of the city because she knows it would annoy him. She carries his emotional labor; therefore, it annoys her too and as his passenger or server, she "solves the problem" of drowning out the noise for him by cutting on the stereo.

[369] To view, see: 2016 Jeep Grand Cherokee Commercial, https://www.youtube.com/watch?v=3YQ1XTARVms (Accessed December 16, 2017).

Several contemporary writers have taken to the notion of silence as being better than noise, wilderness is better than city life. These are ideas Smith and Cronon discuss coming to be through capitalist and bourgeois thought. Erling Kagge is a hiker and documented his thoughts on natural sounds in his, *Silence: In the Age of Noise.* He states:

> Noise is also connected to class divisions. Noises made by anyone other than the person being disturbed by them…set the foundation for disparities in society. People in the lower classes are usually forced to tolerate more noise in the workplace than those in the upper classes, and their homes are poorly insulated against their neighbor's noise. Wealthy people live in places with less noise and better air, their cars run more quietly, as do their washers and dryers. They have more free time and eat cleaner, healthier food. Silence has become part of the disparity that gives some few people the opportunity to have a longer, healthier, richer life than most others.[370]

Kagge discusses a variety of things involving sound and technology engendering anxiety and negative feelings. In regard to sound as a commodity, he believes:

> … silence is the new luxury. Silence is more exclusive and long-lasting than other luxuries…silence is the only need that those who are on the constant lookout for the latest luxury can never attain.[371]

He continues:

> Silence is not first and foremost important because it is somehow better than noise, even if noise is often associated with negative events such as commotion, aggression, and violence. Noise comes in the form of distracting sounds and images, and as one's own fleeting thoughts. We lose a bit of ourselves along the way…Noise in the form of anticipating a screen or keyboard is addictive, and that is why we need silence.[372]

Kagge describes his emotional relationship with sound shaped by whatever environment he is in, whether in the desolate artic while hiking or at home in European metro cities.

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[370] Erling Kagge's *Silence: In the Age of Noise,* (Pantheon, 2017), 67-68.
[371] Ibid, 66.
[372] Ibid, 46.

Either way, he finds himself having to "shape" his "own silence…order to shut out other sounds[373]

Similar to Kagge, Gordan Hempton's *One Square Inch of Silence: One Man's Quest to Preserve Quiet,* is an autobiographical discussion on silence in nature as a hiker. Hempton calls himself a "purist" trying to find sounds from heaven within nature. He feels silence is endangered and in order to preserve it, he must scout of sites for "pure soundscapes." Hempton is an acoustic ecologist, making recordings of all of his visits, known for his recordings of every continent except Antarctica on his website. Through his book, he documents his development of "One Square Inch," the quietest place he has witnessed in the Hoh Rain Forest of Olympic National Park. He has created a monument at this quiet area, but nothing legally has been done to protect this quiet place from noise intrusions. Hempton believes that by preserving one inch of silence, the surrounding environment is healed. His book documents his travels across the United States to find other places as quiet, opening with the following statement:

> Fighting noise is not the same as preserving silence…our typical anti-noise strategies – earplugs, noise cancellation headphones, even noise abatement laws – offer no real solution because they do nothing to help us reconnect and listen to the land.[374]

As an acoustic ecologist, his work ties to the lineage Schafer bestowed forth, but his work also negatively reiterates assumptions connected to glorifying silence and dismissing urban communities.

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[373] Ibid, 26-27.
[374] Gordan Hempton, *One Square Inch of Silence: One Man's Quest to Preserve Quiet* (Atria Books, 2010), 1.

Through looking at Boykoff, Smith, and others, we know how geographers, social theorists, and even advertisers have approached the class politics of space and place. How can we, however, apply their offerings to explore understand how noise abatement and noise regulation further segregates us? How have some people been more entitled to the protection from adverse sound level exposure than others? People or systems of power control "noise," or the sounds the oppressed make. People or systems of power define these sounds as noise. Local businesses and governments ran by powerful people paid more attention to the rising sounds in urban spaces during the industrialization. Especially with factories and mechanical work environments, the *Walsh-Healey Act* helped in improving labor standards, such as ear protection, for those surrounded by high decibel levels for prolonged periods of time. These enforcements began to transfer out onto the streets and skies of cities by the 1960s. Guidelines related to sound transmission were primarily proposed at the municipal, state, or provincial level. When the *Noise Control Act* passed, it led the gateway for other state and national governments to pass similar regulations or update their preexisting ordinances.[375] The act influenced many states and cities on their planning and zoning decisions, some positively effecting transit systems and housing programs. Many European countries emulated the *Noise Control Act*, such as the Netherlands, France, Spain, and Denmark. Capital gain played a large part in European countries later developing strict regulations around decibel levels from hybrid vehicles, kitchen appliances, and so on, while the U.S.A did not. Of the US states,

[375] Japan passed the first national noise control act with its scope primarily focused on occupational and construction noise.

the west coast regions have had the most local innovations centered around motor vehicle sounds.

Schafer and Neuhaus both would have appreciated these later innovations involving diminishing the sounds of appliances, vehicles, and such. Both spoke of the "bureaucratic"[376] or the "imperial"[377] implications of western political systems when experiencing the auralities of everyday life. They saw how policy (or lack of policy) influenced people. Neither, however, spoke of how noise policies might influence the intersectional experience – how forms (and overlappings) of race, gender, sexualities, class, age, abilities, cultures, etc., may experience sound/noise.

Local or city ordinances give police officers the power to investigate noise complaints and deal with the offending noise source, usually through shutting down the situation and/or fines. However, it is important to consider the privilege and social dynamics that may play out in urban noise complaints. Consider the upper-class dweller who can afford to live outside of town in a quiet, gated community – they are paying to have a "quiet" area to live in. In comparison, areas with a great deal of apartments, where tenants may congregate in the halls, stoops, or stairwells to avoid a cramped apartment, are associated with public noise, perhaps even approached by the police or enforcement. On the other hand, consider the hipster moving to a gentrified area calling the police to complain that their new home is louder than what they were used to. How are the people claiming sounds as noise different from the people they are accusing of being noisy? Do we see issues of race and class emerge when we look more closely? If the obligation of a

[376] Neuhaus, "BANG, BOOooom, ThumP, EEEK, tinkle."
[377] Schafer's *The Book of Noise*, 16.

city or a community is to protect its citizens from adverse environmental influences, then what happens when there is sonic injustice?

During a Black Lives Matter demonstration in Ferguson, MO on August 18, 2014, police used LRADs (Long Range Acoustical Devices) to disperse peaceful protestors and force them from disturbing the public. The development of LRADs occurred after the 2000 terrorist attack on USS Cole in Yemen as a warning device. It was then re-purposed as a device [or weapon] that could control situations to "eliminate the risk of collateral damage."[378] It forces its listener to stop whatever they are doing because they are in such sonic pain. It can produce sound around 150dB, which is 20dB louder than a gunshot and may cause permeant hearing damage even during short term exposure.[379] The ear drum can break at around 160dB. Musicologist Will Cheng states:

> LRADs leave protesters with little choice but to cover their ears with both hands. There's a brutal irony here given how one of the rallying cries of Black Lives Matter is precisely, "Hands up! Don't shoot!" Many protesters in the above-mentioned Ferguson video already had their hands raised above their heads to signal their weaponless status and to decry police killings of unarmed individuals. Police actions that force protesters to cup their ears effectively strip the hands-up-don't-shoot gesture of its symbolic charge. The raising of hands transforms from a deliberate sign of willful pacifism into a reflexive show of self-preservation. So beyond the capacity of LRADs to inflict harm, the devices pervert the protesters' choreographies of resistance. They also drown out protesters' words and music, overriding free speech and rendering dialogue among assemblies inaudible. [380]

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[378] Will Cheng, "Sound Cannons Versus Black Lives," *Huffington Post*, https://www.huffingtonpost.com/william-cheng/sound-cannons-versus-blac_b_11653218.html (Accessed December 6, 2017).
[379] Ibid.
[380] Ibid. Cheng's additional thoughts involving this issue may be seen in his book: *Just Vibrations: The Purpose of Sounding Good*, University of Michigan Press, 2016. https://quod.lib.umich.edu/u/ump/14078046.0001.001 (Accessed December 6, 2017).

Cheng points out the power dynamics at play when using the LRADs in Ferguson. After the use of LRADs at a protest involving Staten Island grand jury's failure to indict the officer involved in the death of Eric Garner, attorney Gideon Orion Oliver sent the NYPD commissioner a memo requesting a halt in using the devices on behalf of the protestors who were injured by them.[381] Juliette Volcier's *Extremely Loud: Sound as Weapon* (2013), deals with USA's military control through sound during the 20th and 21st centuries. As Volcier points out, the United States still sees hearing damage caused when using sound guns or in torture chambers as "non-lethal weapon" techniques. Sounds are also explored when used to scare the enemy (explosions, shockwaves, etc.), enhance interrogation, limit communication, or pump up the soldiers for battles.[382] Steven Friedson has also worked on music for torture, especially regarding the use of headphones for prolonged periods of time on prisoners of war.[383] With devices [or weapons], such as sound guns, headphones, or LRADs, being used by control forces, the protestor's constitutional rights are at question and the human treatment of prisoners may be questioned, especially in regard to the ethical use of sound.

In some cases, the courts have claimed constitutional vagueness in association with noise. For example, in the State of New Jersey v. Clarksburg Inn (2005), the Inn

[381] Cheng, "Sound Cannons Versus Black Lives."
[382] Juliette Volcier and Carol Volk, *Extremely Loud: Sound as a Weapon* (The New Press, 2013)
[383] Steven Friedson, "The Music Box: Songs of Futility in a Time of Torture," The Research Centre for the Study of Music, Media and Place (Memorial University of Newfoundland), Lecture on February 20, 2017. https://www.youtube.com/watch?v=I4-uvj80J9g (Accessed December 11, 2017).

appealed noise violation claims because the ordinance in question was "vague and overboard," and therefore, unconstitutional:

> The "defendant contends the language of the ordinance as ambiguous...Defendant claims that the terms "loud," "unnecessary," and "unusual" are subjective and lack any objective component. Also unclear are the terms and phrases "likely to annoy," "disturb," injure," or "endanger the comfort, repose, health, peace, or safety of others."[384]

The US Supreme Court dismissed free speech in the Madsen v. Women's Health Center, Inc. (1994) case. Noise limitations were eventually placed on protestors outside of an abortion clinic because the sounds affected the well-being of the patients.[385]

In 2011, Tom McGrath, a motorcycle riding lawyer, filed a suit against Myrtle Beach to relax their noise ordinances regarding bike weeks. Motor vehicles once limited to a level of 89 decibels while the engine was running at idle speed, was raised to 99 decibels, aligning with national standards. To McGrath, this would help local businesses and restaurants by allowing more bikers to park idly at their establishments. McGrath stated: "what's noise to some people is music to others." This also connects to the issues arising during Black Bike Week in Myrtle Beach and beyond, with businesses refusing services to black bikers and using the noise ordinances as their excuse to not serve them.[386] With the increase in decibel level, they cannot use the ordinance as an excuse for their racism anymore.

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[384] http://caselaw.findlaw.com/nj-superior-court-appellate-division/1149837.html (Accessed October 9, 2017).
[385] "Madisen v. Women's Health Center, Inc." Oyez. https://www.oyez.org/cases/1993/93-880 (Accessed December 6, 2017).
[386] "NAACP 'Operation Bike Week Justice' Myrtle Beach, South Carolina" http://www.naacp.org/latest/naacp-operation-bike-week-justice-returns-myrtle-beach/ (Accessed December 6, 2017).

Another challenging aspect of taking a "sonic offense" to court is to consider where these cases fall in the law. Some issues might be work or health related, but the more "gray," public or private sound nuisance perhaps due to social indifferent which may cause an injury, are part of Tort law. These civil wrong doings, whether intentional or accidental, are difficult for lower income folks to afford to press charges, which might leave them feeling no hope in the need for sonic justice. This particularly could become interesting and within Tort Law territory when considering sound within neighborhoods or streets compromising zoning laws, gun laws, and so forth.[387] The unconcern for all people when considering these ordinances is evident. Many people do not know what their neighborhood regulations, city ordinances, or state laws are in regard to sound or noise. These often vary from city to city, town to town, and state to state, with the federal expectations overhead to give some guidance.

It makes one question if noise abatement was really intended to help all, or was it meant to sonically divide? Regarding siren sounds, even Neuhaus asked if sounds of emergency vehicles were meant to help in the case of an emergency or were the meant to cause moral panic and scare the people? If everyone agrees that loud sounds can harm you and that decibels need to be monitored, how does this happen in a nonbiased way? As we saw in *The New Soundscape*, Schafer would have been against the use of loud sounds as a weapon, but he failed to see how noise abatement could be weaponized against people of color, low class, the homeless, and other disenfranchised people. Noise is a force that can alter the way people live or chose to go about their daily lives. It is

[387] "Tort of Nuisance," https://legal-dictionary.thefreedictionary.com/Tort+of+nuisance (Accessed December 9, 2017).

subjective and conveniently shifts meanings/outcomes per person, per situation. We see through unjust situations, like the noise violations during Black Biker week or the use of LRADs at BLM protests, the convenience of noise is manipulated for the sake of perpetuating control over, in these cases, non-white (but also, non-heteronormative and non-male) others. Noise regislations are the reactions to the ideas that noise is tied up with the "unwanted" and "bad." It is classified within the larger social elite that ideologies nature and silence for only the elite to enjoy. When Neuhaus was redesigning the sirens, he was intending for the device to help all listeners to understand and not harm. He wanted ambulances and other emergency vehicles to reasonably communicate to the public when an egregious situation was happening. The LRADs may have started off as a warning siren, but it was re-purposed to harm others, which Neuhaus would have completely been against.

CHAPTER SIX: THE COMMUNITY OF NOISE, A CONCLUSION

"Noise matters more than anything else" and has "always been laden in meaning."

-David Hendy[388]

> *"The is no power without the control of noise and without a code for analyzing, marking, restricting, training, repressing, and channeling sound, be it the sound of language, of the body, of tools, of objects, or of relationships with others and with oneself... Totalitarian theorists all aimed to reserve for the power a monopoly on the broadcasting and reception of noise. The French monarchy's repression of regional music, white music executive's ostracism of black musicians, the Soviet's obsession with peaceful, national music, the systematic distrust of improvisation: all of these show the same fear of the foreign, the uncontrollable, the different."*
>
> -Jacques Attali[389]

What would it look like if those in power let go of their power, fear, and need to control the reception of noise? This final chapter aims to take aspects learned from Neuhaus and Schafer to create a method for embracing the community of noise around us, a sound pedagogy for all, or aural advocacy/activism. I will do this by looking at a few ways other artists embraced sonic symbols of class struggle and noise, namely noise rock bands like Sonic Youth, and review a soundwalk/soundmapping activity I led in Lexington, KY.

Many artists from the 20th century have used noise to their advantage to help them express emotions and/or identities. Noise opened the sonic possibilities for composition and performance; it was seen as new, fresh, and modern. Something originally associated with lack of control or pain, was reimagined as sonic pleasure, a sonic subversive experience, which relates to David Huron's psychological theories in his book, *Sweet*

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[388] David Hendy, *Noise: A Human History of Sound and Listening* (Ecco Press, 2013), 325.

[389] Jacques Attali, "Forward" to *Music and Marx: Ideas, Practice, Politics*, ed. Regula Burckhardt Qureshi (Routledge: 2002), x-xi.

Anticipation: Music and the Psychology of Expectation.[390] In Chapters One and Two, we discussed the Futurism and Experimentalism regarding noise and Schafer and Neuhaus.

Moving beyond the legacy of these two artists, noise was facilitated into noise rock and by contemporary of Schafer and Neuhaus. Noise was used as a musical resource to explore sonorities as well as mediate urban conditioning. Similarly, urban dwellers of the 1970s and 1980s mediated their space by wearing headphones to condition themselves within their city. Shuhei Hosokawa's "The Walkman Effect" deals with this by examining the realities experienced while wearing headphones.[391] Especially in a city, wearing headphones allowed for one to block out external sounds, covering them with more noise, becoming an internalized ritual of "ethereal transmission."[392]

The next section of this chapter will briefly consider artists in the generation after Schafer and Neuhaus interested in sound, the environment, and noise. The emergence of noise rock during the 1970s with urban bands like The Mars and Sonic Youth, and even the contemporary philosophies behind Pauline Oliveros' *Sonic Meditations*, all dealt with how the artists were defining sound/noise, experimenting with sound/noise, and using their experimentation to embrace their identity. Sonic Youth and The Mars both had strong female presence in their rock bands, using the sounds of New York City to influence their performances.[393] They did not separate themselves from the urban

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[390] David Huron, *Sweet Anticipation: Music and the Psychology of Expectation* (MIT Press, 2006).
[391] Shuhei Hosokawa, "The Walkman Effect," *Popular Music*, Vol. 4 (1984), 165-180.
[392] Ibid.
[393] Throbbing Gristle was an English noise band formed around 1976, also with a strong female presence (Cosey Fanny Tutti) with political aesthetics. See scholars Simon Reynolds (2005) and Marie Thompson (2017) for more information.

soundscape, which is also associated with the working or lower classes; rather, they embraced these sounds and identities in their performances.

In the early 1980s, the band Sonic Youth acquired a copy of *Sounds of the Junk Yard*[394] and their guitarist Lee Ranaldo recalled how the album achieved in 1964 what many noise rock bands attempted to incorporate live on stage later in the 1980s.[395] The first track of Junkyard involves a live recording of an "acetylene torch, cutting apart an automobile engine" by photographer Michael Siegel.[396] Heard is the fullness of the torch when it is first ignited with subtle waves in dynamics and slight changes in timbre and range as it moved against the car's material and open air. The listener is invited to use their imagination in envisioning the torch cutting apart the engine or invited to just listen to the sounds as sounds themselves.

Sonic Youth guitarist Lee Ranaldo recalled:

> In the very early '80s, after we'd all moved to NYC and begun Sonic Youth, this record — *Sounds of the Junk Yard* — came to my attention somehow. It was one in a series that the wonderfully adventurous Folkways label was doing…of natural sound recordings, made possible by the advent of more portable recording technologies…John Cage was quoted somewhere as saying that he'd rather listen to the sounds coming in his window than the same record over and over, and we listened to these recordings in that spirit…[397]

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[394] *Sounds of the Junk Yard*. Folkways Records FX 6143, 1964. LP. *Sounds of the Junkyard* was included on Lester Bangs's list of "top ten noise albums of all time" in his *Village Voice* (1981) article, "A Reasonable Guide to Horrible Noise." Bangs included *Sounds of the Junk Yard* alongside recordings by Lou Reed, Yoko Ono, The Mars, and several other rock acts

[395] Lee Ranaldo, Review of *Sounds of the Junk Yard* by Michael Siegel, 1964 (October 31, 2006) http://www.wonderingsound.com/review/sounds-of-the-junk-yard-various-artists-Smithsonian-folkways/ (Accessed February 15, 2017).

[396] Liner notes from *Sounds of the Junk Yard*.

[397] Ibid.

Sonic Youth was officially formed spring 1981 by Thurston Moore (guitar, vocals), Kim Gordon (bass, guitar, vocals), and Ranaldo (guitar, vocals) in NYC.[398] In their early career, the experimental guitar band was associated with the downtown "No-Wave" art scene, carrying over DIY aesthetics from punk. Moore described their band's music as "atonal, chordless, noise rock played by weirdo personalities."[399] Sonic Youth became known for using a wide variety of performance techniques such as feedback,[400] prepared guitars, amplifying drills or other objects, and nontraditional guitar tunings. Composer and experimentalist Glenn Branca (1948-2018) released their first albums. In the 1982, Moore and Ranaldo performed in premiere of Branca's piece *Indeterminate Activity of Resultant Masses,* which Cage negatively reviewed as "fascism."[401]

> Regarding Sonic Youth's interest in noise and the city sounds, Ranaldo said:
>
> I found myself frequenting many construction sites around NYC, early-version Walkman® in hand, recording pile drivers, truck horns, etc. Glorious NOISE seeped into our mindsets back then, reprogramming our synapses — it was all around us city-dwellers and, as this record shows, at the junk yard as well.[402]

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[398] They had a series of drummers until 1985 when Steve Shelley joined.
[399] Stevie Chick, *Psychic Confusion: The Sonic Youth Story*, Omnibus Press (2008), 27.
[400] As we saw with Neuhaus, feedback was an important technique for his performances and albums during his percussion career. Lou Reed's *Metal Machine Music* (1975) is another important album for feedback and experimentalism, leading into the noise scene. It is worth noting later, in 1991, Neil Young and Crazy Horse released *Arc*, a live album of feedback and guitar/vocal fragments from the beginning and endings of songs. The idea was born in the late 1980s, but it was Thurston Moore who encouraged Young to make the entire album. Sonic Youth was an opening band for Young during the early 1990s.
[401] Cole Gagne, "Glenn Branca," Oxford Music Online (Accessed June 4, 2018). Branca's life and work is much worthier than a footnote. He was a remarkable experimentalist known for his use of extreme volume, extended guitar techniques, and beyond. I hope more scholarship will be devoted to his artistic output into the future.
[402] Ibid.

While Sonic Youth gigged and played in festivals as early as 1981, they did not release their first full-length album until 1983 with *Confusion is Sex*. They did, however, release a collage of live performances from 1981-1983 on their album *Sonic Death*. It was originally a cassette released by Moore on his own label, "Ecstatic Peace!."[403] Many of the tracks on the album appear only as fragments with no breaks in between. There is no track listing. Most of the tracks are variations of tunes from their first releases. At this early state, the band could not afford to travel with separate instruments for tuning, so the listener can hear the musicians change tunings in between songs.[404] Passages from *Sonic Death* involve pulses of the bass with underlying triplets remind me of driving sounds from a moving train and its rhythm on the tracks; the intermittent screaks from the guitars and even the voice resembling the sounds of the breaks.[405] These sections suggest the rhythmic rumbling of a truck engine Siegel captured at the junkyard. In both *Sonic Death* and *Junkyard* one hears the underlying rhythms of some sort of imagined or actual machine sound. One also hears distortion. Sonic Youth amplified their instruments, used feedback, and yelled into the microphone, making it hard to decipher the vocal text. On the second track of *Junkyard* involving loading a truck, you noticed a voice speaking but you could not make out their words because the sounds of the truck engine and environment around the voice are unintentionally overpowering it.

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[403] "Sonic Death," http://www.sonicyouth.com/mustang/lp/lp2.html (Accessed February 20, 2017).
[404] David Browne, *Goodbye 20th Century: A Biography of Sonic Youth*, Da Capo Press (2008), 62.
[405] A particular passage that show this occurs around 09:55 into the recording. On the original cassette, this fragment was 17:00 minutes into the recording.

Distortion in Sonic Youth happens on purpose; in the junk yard, distortion just happens. Similar to Schafer and Neuhaus, Sonic Youth took inspiration sonorities people typically tune out in everyday life and challenges them to reconsider how they experience and listen to the sounds around them. This is a similar theme found in artistic works by Pauline Oliveros. She is often connected to Schafer because of her compositions and concepts involving deep listening. Oliveros's experiments with sound also connect deeply to her identity, as she was openly queer and feminist. In 2007, Martha Mockus wrote a biography in close communication with Oliveros titled, *Sounding Out: Pauline Oliveros and Lesbian Musicality* chronicling Oliveros' life through a feminist lens, addressing her musical performances as a form of queer critique. Oliveros' *Sonic Meditations,* dedicated to the ♀ensemble and Amelia Earhart, includes meditation No. XXIII, titled "Pure Noise." The directions are as follows:

> Sing the purest tone possible, that is, with the fewest partials, in a comfortable register. Gradually change the quality of this tone to include more and more partials until it approaches or becomes a noise band. Continue as long as possible going from pure tone to noise band with each breath.
> Variation: Reverse the above process.[406]

With this meditation, the group vocalizes the purest tone in each person's register, gradually changing the quality of the tone until the group becomes a "noise band." The first goal is to create a pure tone, without vibrato, controlling any tendency to fall flat/sharp or to create specific harmonies with others (partials), and to remain at the center of the pitch. Then, each person alters their pitch it to the point in which a pure tone is vocally distorted, becoming noise; the group becoming a noise band. The process of

[406] Pauline Oliveros, No. XXIII "Pure Noise" from *Sonic Meditations,* (Smith Publications), 1974.

distortion would be up to the individuals of the meditation and the concept of distortion connects Oliveros' even to Sonic Youth. While Sonic Youth was using distortion in their electronic rock music, Oliveros was using it acoustically in her attempts to have her practitioners heighten their awareness of the sounds around them and the sounds they make. The title "Pure Noise," suggests noise is as pure as any sound, is simply a sound, and further challenges the practitioners on their feelings towards defining noise. Further, the *Sonic Meditations* where conceptualized during a time Pauline Oliveros was "turning inward" from fear, when the Vietnam War protests were at its height and Robert Kennedy was assassinated. Musicologist Kerry O'Brien sees Oliveros' use of listening to heal and her practice and sharing of such practices serve as a form of activism.[407]

In the introduction to *Blissed Out: The Raptures of Rock*, popular music critic Simon Reynolds questions the true aesthetics of noise and wonders if musicians desired noise in their work, then does it still function as noise?[408] One may ask themselves this in the case of the Walkman, if covering up noise with more sound creates a sense of relief; or if the noise itself becomes more a "background meditative noise." Questions around disqualifying noise creates a subversive paradigm. Sounds that heal must be considered over the sounds that harm. In addition to musicians using noise to connect to their

[407] Kerry O'Brien, "Listening as Activism: The 'Sonic Meditations' of Pauline Oliveros," *The New Yorker* (December 9, 2016), https://www.newyorker.com/culture/culture-desk/listening-as-activism-the-sonic-meditations-of-pauline-oliveros (Accessed May 24, 2018).

[408] Simon Reynolds, *Blissed Out: The Raptures of Rock* (Rock's Backpages, 2011). See, also: Stanley Cohen, *Folk Devils and Moral Panics: The Creation of the Mods and Rockers* (Routledge, 1980). Cohen's work offers an interesting look at the disapproval and panic from the masses regarding amplified rock music and its connecting trends, primarily in the 1960s.

identity and/or experiment, non-musicians may also use noise for socio-political expression. For instance, many communities break their silence for political and radical reasons through protest and use noise to raise their voice. This was seen in the Black Lives Matter example in Chapter Five where sounds that harm (LRADs from police violence) contrast with sounds that may heal (protesters or motorcycle gatherings). These conversations about individual and social interactions within a sonic space brings us to the third portion of this chapter, the soundwalk in Lexington, KY. Following the walk, we discussed sonic identities, questioned the sonic identity of Lexington, and considered the communities in which are brought together aurally in our city.

Soundwalking in Lexington, KY

On February 9, 2018, I initiated a soundwalk through downtown Lexington, Kentucky. Participants invited included students and faculty from the University of Kentucky's Musicology, Ethnomusicology, Anthropology, and Geography divisions, but also members from local organizations such as Kentuckians for the Commonwealth, Kentucky Worker's League, Central Kentucky Chapter of Standing Up for Racial Justice, and other local groups. The goal was to have folks walk through neighborhoods to absorb the sonic environment around them. The walk was followed by discussions on the sounds, a sonic mapping of the area walked based around Bernie Krause's terms "geophony," "biophony," "anthrophony," and reflections on ways sound could reflect the community. This part of the dissertation serves as a reflection on areas for which the soundwalk was successful and could improve. Scholarship dealing with soundwalks tend to focus on technicality, the sounds themselves, coming from a privileged mentality. I

will rely on an interview I conducted with Hildegard Westerkamp to delve further into ways to expand soundwalking so that sound pedagogy may be available for all, not just those aware. I will offer ways in which to involve more people in soundwalks, to listen together, and learn from community sounds during political tension. How participants could think on people from all backgrounds, from marginalized groups and privileged groups, perceived and affected by sound/noise throughout their town.

I met my participants in the lobby of the central public library around 4pm on a Friday afternoon. Seventeen people attended the walk, many of which were affiliated with the University of Kentucky's Musicology/Ethnomusicology division; I was incredibly grateful for the handful of those outside of the university in attendance. Of the seventeen people, over half were white and/or were women. The age ranged from one child, many graduate students, professors, to a retiree. Before the walk, I greeted everyone and discussed the expectations of our afternoon together. I explained we were going to be walking through downtown as a group to listen the sounds around us. With this, I encouraged all to silence their phones and refrain from talking while we walked. Since it was an intentional walk through areas of construction, plus not wanting to assume anyone's abilities, I indicated it would be slow-paced. The members were encouraged to stop and listen to any sounds of interest, but to try to stay with the group and to be safe. I asked their permissions to take pictures and recordings, mentioning I would be periodically checking decibel levels throughout the walk. Finally, I explained after our walk, we would transition into activities and encouraged them to remain quiet as we returned to the library.

The walk itself was short due to restricted time at the library. We began outside of the library, walking down Main Street towards Triangle Park, and then took Vine Street back to the library. What would typically be maybe a ten-minute walk, took us about twenty-three minutes. I wanted to make sure we were not rushing, stopping at the crosswalks instead of jaywalking (which I admittedly do often), with several minutes spent walking around Triangle Park. Lexington's downtown is mainly home to banks, the Fayette County Court House, some bars/restaurants, hotels, and probably most famously, Rupp Arena (where the UK Men's Basketball team plays). Also along our route was Cheapside Pavilion, the newly renovated Lexington historical courthouse, and a ten-year construction project of a hotel and retail dual office space called, CentrePoint, which has been (un)lovingly nicknamed "The Pit" by many locals.[409]

[409] A reference to the television show, *Parks and Rec*. To read more about the controversial CenterPointe project, see: "Investor Named for CentrePointe. Office Tower and Hotel to go up Soon." *Lexington Herald-Leader*, http://www.kentucky.com/news/local/counties/fayette-county/article178245121.html (Accessed February 12, 2018). Also, to view a video of the nine-year developments, see: http://www.kentucky.com/news/local/counties/fayette-county/article178689841.html (Accessed February 12, 2018_.

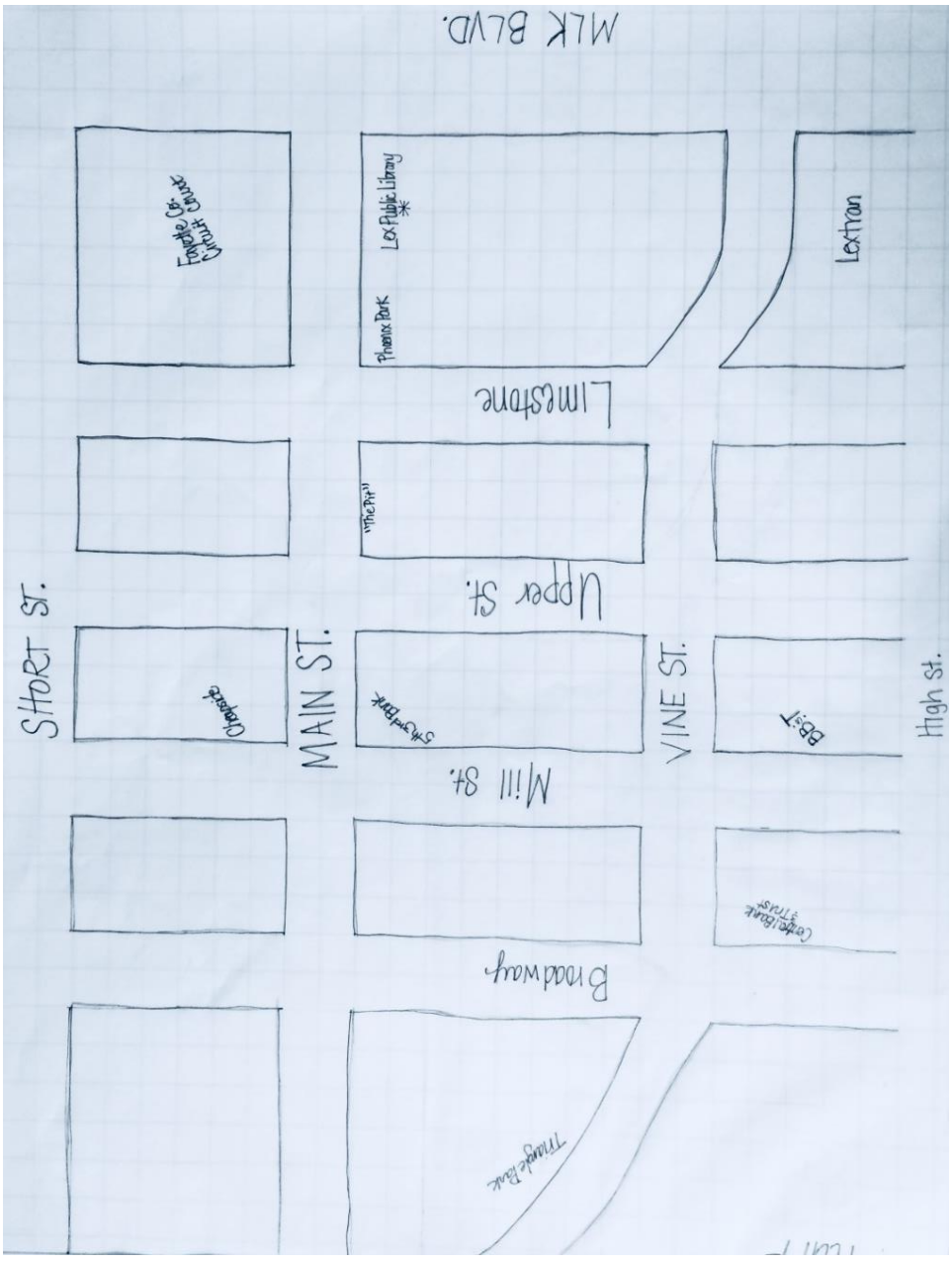

Figure 6.1: Drawing of Downtown Lexington[410]

[410] Drawing created by Megan Murph and soundwalk participants.

As we exited the side doors of the library opening out to Phoenix Park, we were greeted by street sounds and the construction zone of CentrePoint, encompassing the entire block of Limestone/Main/Upper/Vine. The sounds included the humming and rumbling of cars and trucks waiting at the stoplights or engines revving as they pass by, the beep and vocalizing "wait" of the crosswalk signal, the wind blowing, footsteps, the sounds of arms swinging against coat materials. At the construction zone, the low rumbling of trucks and machines were constantly heard with sporadic rhythms of a tinkering hammer on metal intertwined with a hammer on wood. The waves of traffic washed around us; the sounds of automobiles within a few blocks radius began to blend into the traffic sounds heard directly beside us. The traffic and construction rumbling underpinned our walk. Within moments, my ears adjusted and this rumbling became "background noise." I would then mainly notice sounds that emerged from or shifted within the sea of engines.

My experience as listener and leader was intense. I found my listening heightened more than I was expecting, probably because I was leading a group on this activity and I wanted to take it seriously. I also frequently checked behind to me to make sure no one got too far behind or stuck at a cross walk. The intersections contained the most volume since more traffic, buses, and motorcycles were pass, but also drivers played their music. This consisted primarily of classic rock and country, creating an interesting fade affect as the music drifted out of the cars and into the soundscape. Walking by bars playing music to entice potential customers created a similar affect. There were many differences in sounds between the intersections and the interior blocks. I was particularly surprised that not many people were out on the streets for a late Friday afternoon; I thought we would

have seen more people leaving work and getting ready for the weekend. In many areas, it felt as if our group were the only people on the block. I heard no animals, birds, or creatures on our walk. It was surprising to not hear/see anyone walking dogs. The afternoon was particularly gusty. Wind blew by us at intersections when we did not have buildings to protect us. This caused zippers, hair, earrings, and other small items things dangle or move, causing subtle audible flutters.

Figure 6.2: Soundwalk Participants waiting at Crosswalk at Main Street and Broadway[411]

[411] Photographed by Megan Murph (February 9, 2018).

When we arrived at Triangle Park, I was disappointed the cascading waterfall fountains were still shut off for the winter because I was looking forward to hearing the installation. Triangle Park was founded in 1982[412] at the intersection of Main Street and Broadway; behind the park rests one of Lexington's most cherished buildings: Rupp Arena.[413] The park's water installation and recreational existence highlights the city's dedication to Rupp and basketball culture, promoting this area as a cornerstone of Lexington. Gravel paves parts of Triangle Park, so hearing my feet walk on these rocks instead of cement was another aural surprise. The wind caused my jacket to billow open, igniting its metal clasp to hit a lamp post as we walked by, creating a resonant "ding." As we left Triangle Park and wrapped back around towards the public library, passing the back of the CentrePointe construction zone, I began to feel the monotony of the engine rumbles and lack of people in the cityscape. I felt very connected to my fellow walkers because we were in this sonic activity witnessing everything together. By the time I saw the library and the end of the walk in (hear)sight, I was eager to verbally reconnect with them. This left me wondering about how I personally leaned on the essence of the group for support and long for this sense community when I walk in solitude daily. If this downtown sonic scene of traffic, construction, and not a lot of people represents Lexington, what does that say about our community and sonic identity?

[412] "Welcome," http://triangleparklexington.org/ (Accessed February 18, 2018).
[413] Rupp was built in 1976 as part of the Lexington Center, which is connected to many hotels and local businesses. http://www.lexingtoncenter.com/ (Accessed February 18, 2018).

I periodically checked the decibels (dB) throughout the walk. Generally, the downtown area averaged around 68-71 dB for the twenty-three-minute activity.[414] When we first exited the library with the construction zone not even half a football field away, checking in at 71 dB. As we walked away from the library and towards Triangle Park, the reader never really dipped below 66 or 68 dB, the traffic sounds being constant in the background. At Cheapside and Triangle Park, where it felt the quietest, read around 68 dB. The loudest moments read at 88 dB, when transit buses hit their breaks.

Figure 6.3: Soundwalk Participants walking down Vine Street.[415]

[414] The walk was short to allow time for discussion at the library before it closed.
[415] Photographed by Megan Murph (February 9, 2018).

Returning to the library, our group reconvened for conversations and activities involving the walk. I remember Westerkamp telling me:

> The discussions [after the soundwalk] are just as important as the soundwalk because hearing other people talk about an experience we all just had completes the soundwalk. The group discovers sounds and learn from each other yet can reflect on our own role, our own ear, and brains behavior.[416]

First, I encouraged the participants to remain quiet and write on a sheet of paper all of the sounds they remember hearing and where they were located. Then, I asked the group to free flow write about any feelings or impressions they experienced connected to the sounds heard while walking through downtown Lexington. After about ten minutes of writing, I opened the floor for conversations by simply asking, "How are you feeling?" and "What did you think?" Conversations around the walk were open, fluid, and bounced around many topics. I enjoyed how many mentioned the mindfulness of the walk making them aware of how sound played a role in their life, especially how one relies on a combination of visual and aural signals, not just the visual. Several participants mentioned hearing rhythmic synchronicities and phasing between sounds of the construction zone intermixed with the pulse of walking, heels of shoes, or the crunch of leftover salt from snow on the sidewalk beneath the feet. Some walkers talked about liking or disliking the construction sounds. One person talked about how much louder Lexington is compared to Paris, France and how they equate a quiet city to a civil city; potentially meaning Lexington is not as civil as Paris is. Another international participant commented on how quiet Lexington is. I would imagine especially compared to dense areas as Mumbai, Mexico City, or Tokyo, there is massive sonic difference.

[416] Interview with Hildegard Westerkamp (October 10, 2017).

Having never done a soundwalk before, one person shared having a bit of anxiety because of the tension of being quiet and having to accept the sounds coming at them from the environment. This person, however, found relief when coming to the crosswalks signs because they heard deliberate signals of communication to "walk" or "stop." This comment reminded me of Neuhaus's concern with how sounds in a city communicate with their dwellers and the web of emotions that may emerge for the listener. Further connecting to Neuhaus's work were the participants' comments on sirens. While we did not hear any sirens directly beside us, they were constant sounds in the distance, blending into the "white noise" of traffic. They also explained how they react to sirens, one stating: "When I hear a siren driving around Lexington, I have to figure out where that siren is coming from – behind me, in front of me, beside me, do I pull over or keep going?" Understanding what to do next is another concern for driver or walker hearing a siren. All the listener knows is they must get out of the way of the emergency, but they are not sure in which direction to move.

Distant sounds were another area of conversation. Like in Pauline Oliveros' *Sonic Meditations*, walkers discussed trying to gauge how far they could hear sounds as they walked away from them. Many were surprised that they heard few sounds of verbal communication during the soundwalk. When people were around, for example, unloading items in front of hotels, they were not talking and very quiet. Other than these instances, the participants agreed there were hardly any people out, no babies in strollers, and no birds or other animals within the space. If we had done the same walk on a summer day or even a few hours later, we would have likely seen more folks on the street pub crawling and enjoying the nightlife.

After our initial conversation we moved into the soundmapping activity[417] where the group worked together to draw on the map to document the sounds heard. Then, we talked about the differences in these sounds based on Bernie Krause's terms: *geophony* (sounds of the earth, which were highlighted in blue marker), *biophony* (sounds from living organisms), and *anthrophony* (sounds from humans, which were highlighted in red marker).[418] Bernie Krause is a soundscape ecologist who sees/hears all three of these phonic areas present in a soundscape.[419] Anthrophony was the biggest category for our map because all the mechanical sounds it includes. Some walkers felt there needed be a differentiating category within anthrophony to separate acoustic sounds humans make (talking, breathing, sneezing, etc.) and the mechanical sounds humans make (by driving trucks, machines, etc.). A participant asked, "What is this activity telling us about our world or ourselves?" in regard to how Lexington (or any city) has changed within the last 150 years. The city would probably be just as "loud" but filled with different sounds like horse and buggy, street merchants, and so on. The rising dominance of human created

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[417] While my group did not record any sounds, I used sound mapping for pedagogical purposes. "Sound maps" are tied to Schafer, the WSP, and acoustic ecology in general. Ofcourse, researchers have been creating sound maps for archival purposes as a way for people to hear or look at the geography around them in a new way. Sound maps also remind me of artists interested in how sounds move or migrate, such as in Annea Lockwood's sound map albums (*Sound Map of the Hudson River*, 1989; *Sound Map of the Danube*, 2008).

[418] Bernie Krause, "Voice of the Natural Sound," https://www.ted.com/speakers/bernie_kraus (Accessed February 19, 2018). For more information, see his: *The Great Animal Orchestra: Finding the Origins of Music in the World's Wild Places* (Back Bay Books), 2013; *Voices of the Wild: Animal Songs, Human Din, and the Call to Save Natural Soundscapes* (Yale University Press), 2016; and *Wild Soundscapes: Discovering the Voice of the Natural World* (Yale University Press), 2016.

[419] Earlier in his career, Krause was involved with Paul Beaver, a pioneer in electronic and rock music. They released several albums influenced by nature under the band name Beaver & Krause, including *In A Wild Sanctuary* (1970, Warner Bros. Records).

sound but also, we are also environmentally evolving because of this ecological dominance: species are going extinct because their habitats are forever changed.

Another question that came out of our soundmapping activity was, "what sounds are difficult to label or place into Krause's categories?" This dissolved into conversations about being sensitive and aware of the context of a landscape when listening to it – for one to know when they are in a city (developed) versus a suburban or rural (undeveloped) space. This led me to think about when in an urban landscape, why would we subject it to natural ideals, yet at the same time, why would we try to separate a city from the country as if the city is not a part of the environment. These are thoughts further connect to Smith and Cronon's ideas on nature and its social production. The use of Krause's categories during the post-soundwalk had its pros and cons. One major benefit is it helped the participants think about where the source of a sound is coming from and our personal tendencies to pay attention to one sound over another. Some participants really disapproved of human made sounds, longed for balance, and were nostalgic for more nature based sounds, which reminded me of Schafer's teachings. How would we avoid this tendency when leading soundwalks if we wanted to think of a sound environment as a whole and is that needed in sound pedagogy?

One walker brought up the microphones amplifying an underground creek that runs through Lexington.[420] In 2011, American sound artist Bill Fontana (b.1947) created *Surface Reflections*, a sound sculpture and video installation revealing the hidden sounds of Town Branch in Lexington. The sound sculpture may be heard between Fifth Third

[420] Also discussed was how one could hear creek sounds in the basement of Singletary on UK's campus.

Bank building (Financial Center) and the parking lot next door. The sounds reflect off the glass of the building's façade towards Lexington's Old Courthouse in Cheapside Pavilion.[421] This creates a "spatially interactive experience" for those walking from varying directions.[422] The sounds from the flowing creek intermix with the sounds of the courthouse bell, which at the time, rang every hour, allowing the listener to question time:

> A live microphone placed in the clock room wirelessly transmits to the sound sculpture on the parking garage across the street. The bell's sounds pass through a digital matrix of cascading delays that expand the sound and flow out of the eight-channel loudspeaker system with the same compositional structure as the sounds from Town Branch.[423]

Fontana manipulates and delays sounds from the creek to further toy with the concept of time.[424] He sees the creek as geological time and the clock as mechanical time.[425]Additionally, the reflection of the old courthouse onto Financial Center's façade was recorded for the temporary video installation, juxtaposing visuals from the creek and downtown with sounds from the creek and bell.[426]

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[421] I will be referring to this area as "Cheapside" or "Cheapside Pavilion" because that is what most locals refer to this area as. Fifth Third Bank technically now owns the space and they titled it "Fifth Third Bank Pavilion."
[422] "Surface Reflections by Bill Fontana," LEXARTS, http://www.lexarts.org/participate/public-art/Bill%20Fontana/ (Accessed February 19, 2018).
[423] "Surface Reflections by Bill Fontana"
[424] Rich Copley, "Artist's project brings sound of underground downtown stream to surface," (July 27, 2011) *Lexington Herald-Leader*, http://www.kentucky.com/entertainment/visual-arts/article44117538.html (Accessed February 19, 2018).
[425] "Artist brings Town Branch Creek to Ground Level, and Beyond," (March 2, 2012) *Smiley Pete*, http://smileypete.com/business/2012-03-02-artist-brings-town-branch-creek-to-ground-level-and-beyond/ (Accessed February 19, 2018).
[426] "Surface Reflections by Bill Fontana."

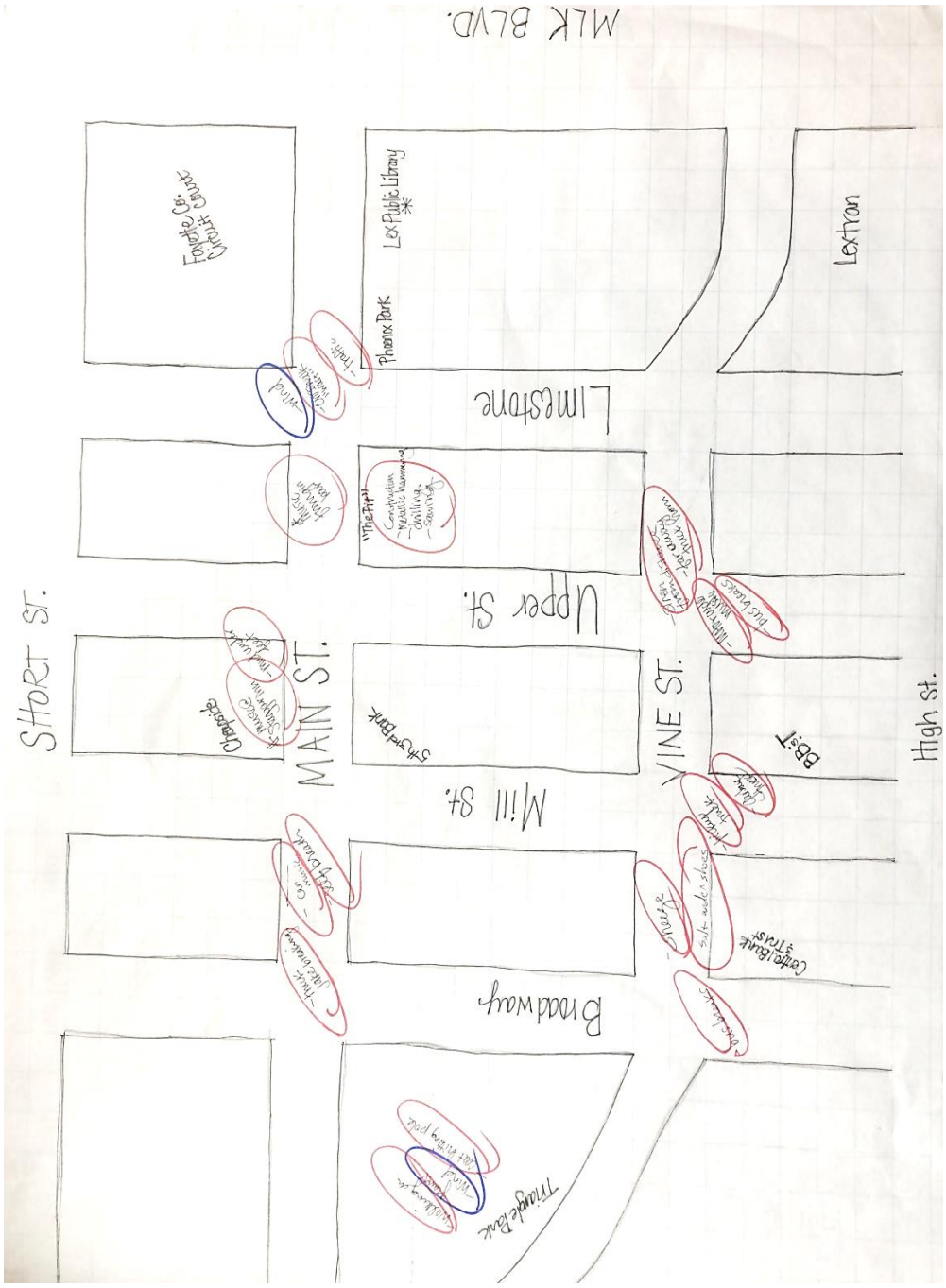

Figure 6.4: Soundmapping activity[427]

[427] Drawing created by Megan Murph and soundwalk participants.

Cheapside Pavilion was once the location of where thousands of people were publicly bought and sold as slaves. In the 19th century, it was known as the Cheapside Auction Block; today, it houses the Lexington Farmer's Market. By the late 1840s, Lexington was the center of slave trading in Kentucky and by the 1860s, one in four residents in Lexington were slaves. In 1887, the state of Kentucky commissioned and paid for a statue of John C. Breckenridge, slaveowner, Confederate Secretary of War, and James Buchanan's Vice President, installed at the former courthouse lawn beside Cheapside Pavilion. Also installed was a statue of Confederate General John Hunt Morgan, paid for by the Daughters of the Confederacy and the state of Kentucky in 1911.[428] These monuments blatantly showed support of slave ownership and were placed on the National Register of Historical Places in 1997. In 2015, a campaign called "Take Back Cheapside" protested to have the statues removed from the area and promote "a more full and accurate telling of [the] city's history."[429] After two years of protests, actions, and negotiating, the city council voted on relocating the statues from Cheapside. On October 17, 2017 at 6:30pm a crew began the removal of the statues to the Lexington Cemetery.[430]

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[428] "History," https://www.takebackcheapside.com/history (Accessed February 12, 2018).
[429] "Campaign," https://www.takebackcheapside.com/campaign (Accessed February 12, 2018).
[430] "Lexington Cemetery and City Finalize Deal to Move Confederate Statues," *Lexington Herald-Leader*, http://www.kentucky.com/news/local/counties/fayette-county/article185131113.html (Accessed February 12, 2018).

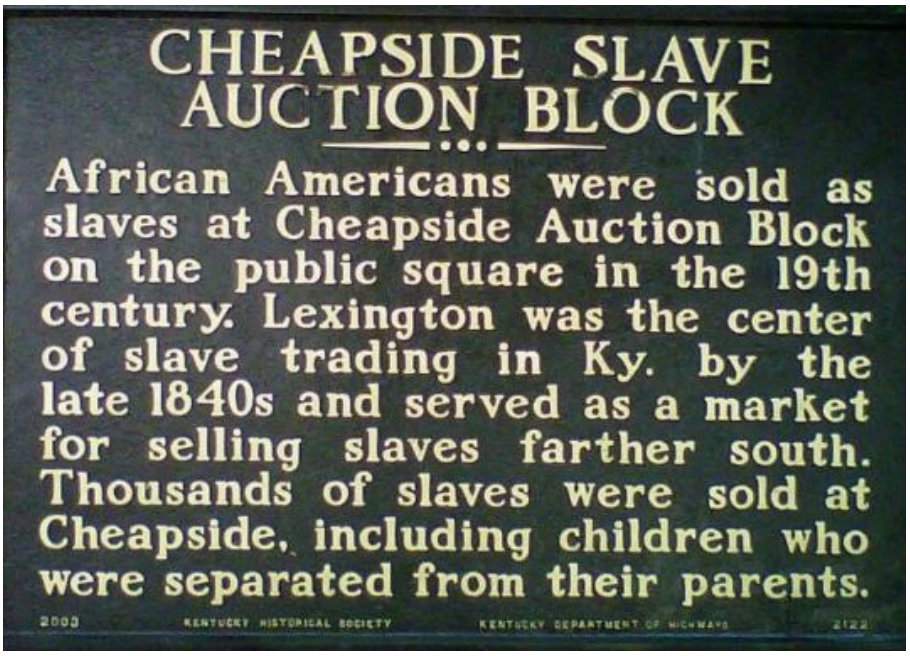

Figure 6.5: Cheapside Historical Marker[431]

Figure 6.6 below shows protestors in front of Cheapside Pavilion in 2016, with their backs to the confederate statue and Fifth Third Bank. In front of them is where the slaves would have been auctioned. To their right is where the Lexington Old Courthouse stands. These protestors stand where Fontana's *Surface Reflections* was installed, adding to the sounds of protest (group chants, shouts, etc.). The manipulated creek and bell sounds of Fontana's work, along with the traffic sounds and the other elements create an historical perspective of the sonic identity of Lexington. One participant from the soundwalk spoke of appreciating how I prompted them to "be aware and accept the sounds as they came in" which allowed her to be less irritated as she normally would be. Soundwalks help listeners be more open to sounds outside of their own community. They

[431] Cheapside Historical Marker, https://www.takebackcheapside.com/fullscreen-page/comp-j6dq38zi/546b9467-5900-4277-b4cf-b0cb78fb01ca/1/%3Fi%3D1%26p%3Dcc16%26s%3Dstyle-j6dqcmuu (Accessed February 12, 2018). Permissions from Debraun Thomas.

also help listeners avoid making assumptions about sounds based on social biases and become more cognizant of the ways in which groups might sonically identify, especially those in marginalized communities. This openness to sound has the power to change one's relationship with the whole of their social world. The same participant above, however, did say that there are sounds he/she would never be able to accept, like sounds of gunshots or sounds of violence, which connects to our discussion on Cheapside and to LRADs at BLM protests. When weapons emit terrifying sonorities or sounds are used as a weapon, this seems to be a red line that can negatively affect a community.

Many cities show off their proud monuments, parks, or gardens by adorning them with water features, sometimes installing musical or sound works, or insinuating the need for quietude. Often, such monuments pay respect and help canonize local figures. While absorbing the sounds around these relics, it might be interesting to think about how many of the monuments are of great leaders from various backgrounds, especially since up until recently, the majority of US monuments standing in city centers have perpetuated white male history. This ties into questions of how our special and sonic environments are entangled with issues of race, class, gender, and beyond.[432] While a monument's power is primarily thought of as drawing from its visual symbolic and physical materiality, it can draw from the aural as well. A city's placement of importance to a particular monument or a neighborhood is not only seen, but heard when they are highlighted by water features or protested against by activists.

[432] One example, issues involving removing Confederate statues around the United States. See: http://www.cnn.com/2017/08/15/us/confederate-memorial-removal-us-trnd/index.html (Accessed December 2, 2017).

Figure 6.6: Take Back Cheapside Protest in the Pavilion[433]

Ethnomusicologist and soundscape researcher Andra McCartney argues that merely walking through a landscape is a political act within itself.[434] Soundwalking for the sake of political consciousness heals the ailments of Schafer's term, *schizophonia,* or the mental dislocation of sound and environment.[435] Through soundwalking, we deliberately connect to our sounds and environment to learn more about how to be better politically and socially engaged. While the WSP under the leadership of Schafer are most

[433] Take Back Cheapside Protest, https://www.takebackcheapside.com/fullscreen-page/comp-j6dq38zi/546b9467-5900-4277-b4cf-b0cb78fb01ca/1/%3Fi%3D1%26p%3Dcc16%26s%3Dstyle-j6dqcmuu (Accessed February 12, 2018). Permissions from Debraun Thomas.
[434] Andra McCartney, "Soundwalking: creating moving environmental sound narratives," *The Oxford Handbook of Mobile Music Studies*, Volume 2 (Oxford University Press, 2014), 212-237.
[435] See: Schafer, *The New Soundscape,* 1969.

celebrated regarding soundwalking and recording, McCartney proves the creative practice is one in which varying people and groups participate. She states:

> A soundwalk can be done individually or in a group. It can be recorded or not. It can be resituated in the same location or translated into other media forms with little or a great deal of sound processing. Soundwalk artists maintain differing attitudes toward the place in question, sounds recorded, processed used, audience of the walk itself, and the audiences of interpretive pieces based on soundwalks. Their intentions may be aesthetics, didactic, ecological, political, communicative, or some combination of these.[436]

McCartney discusses the use of hiking trails and the wilderness locations for soundwalking to privilege, for the ability to walk in rough terrain or to own a car to get to a forest becomes inaccessible to many. She states, "if someone plans walks in their own neighborhood, this can facilitate a focus on local concerns and politics."[437] This connects to my decision to lead a soundwalk just blocks from my apartment and have discussions around the local events involving "The Pit" and Take Back Cheapside.

Environmental artist Andrea Polli's chapter, "Soundwalking, Sonification, and Activism," connects the political and social dimension of soundwalking.[438] Polli discusses the qualitative and quantitative modes of listening in soundscapes versus western classical music by stating:

> "…one very important quantitative aspect of soundscape listening is the volume of a sound. The practice of acoustic ecology involves the work of environmental activists who measure the decibel levels of soundscapes in order to promote noise reduction. Even in these cases, the quality of the sound must be taken into account. For example, the sounds of laughing children may reach the same decibel level as the sounds of traffic, but the former is usually considered more acceptable in a healthy urban sound environment than the latter."[439]

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[436] McCartney, 212.
[437] Ibid, 213.
[438] Andrea Polli's "Soundwalking, Sonification, and Activism," *Routledge Companion to Sounding Art* (2017).
[439] Ibid, 84.

Both McCartney and Polli research in soundwalking challenges the listener to consider the internal, private experience of the sounds perceived within a social, external, public space. Through the walk, listeners are connected through an acoustic community, yet they are having a personal experience.[440]

Author George Prochnik said, "Soundproofing is terrific like bulletproof jackets are terrific," but "wouldn't it be better still if we wouldn't have to worry about getting shot all the time."[441] Similarly, historian David Hendy stated, "Yes, for noise can only be successfully addressed if we engaged with it in the public arena as a whole."[442] Noise helps to understand the social conditions throughout history and reinvigorate our human senses, take pleasure in human engagement, embracing social sounds to perhaps bring us closer together while also helping us find our true creativity. As Hendy points out, talking about noise in an objective way is not the most productive for it is a subjective issue.[443] The real conversations need to be around sound's social role and the power of sound and its control. In capitalist societies, the question of control will never go away; it will just keep changing over time. Sounds or "noise" will follow pockets of overcrowding, poverty, and social neglect. Hendy points out, "if we want to really insist on looking for a grand pattern in the history of noise, we should look for it not so much in terms of rising

[440] Mark Grimshaw, "The Privatization of Sound Space," *Routledge Companion to Sounding Art* (2017).
[441] George Prochnik, *In Pursuit of Silence: Listening for Meaning in the World of Noise*, (Anchor Press, 2011), 197.
[442] Hendy, 325.
[443] Ibid.

volume levels but rather in terms of the growing inequalities in people's access to quiet."[444]

Perhaps listening to sounds can be an avenue for finding liberation in the way Westerkamp felt once being exposed to new listening practices. She explained listening before and after being introduced to Schafer's ideas:

> My listening was very much focused on classical music and my ear training I found was very scary and felt challenged by it often and felt it was a bit oppressive the way I was educated. When Schafer came along and said, 'let's listen to all of the world and let's expand our ears through the environment and think about the quality there,' I was completely inspired. It freed me and absolutely liberated me from whatever was oppressive about music education.[445]

Not only could listening help the listeners feel liberated (and not just from western music education), it could help them feel united or connected to a group their listening with. Fostering a listening practice, could help the listener create a deeper relationship with themselves, others, and their environment. They might also find a sense of calm, which is often an immediate benefit of soundwalking as Westerkamp describes:

> When we start a walk, everyone is coming from different directions…you can feel people's distraction when they arrive. They're looking at where we are, still coming from somewhere else, kind of trying to get adjusted to listening to the sounds around them…There's often a point, depending on what happens in the soundscape and within the chemistry of the group, you can actually sense when we are all listening together. Something settles in the group…it's very interesting because it creates a sense of calm. People slow down, their bodies slow down. They're not in a hurry anymore, not goal oriented anymore. They're clearly in touch with the sounds around them and their environment through this process of listening. The worry has disappeared and they feel safe within the context to just listen.[446]

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[444] Hendy, 329.
[445] Interview with Hildegard Westerkamp (October 10, 2017).
[446] Ibid.

This relaxation or sense of calm reminds me of the awareness and serenity felt when practicing the nada yoga, or the yoga of listening to the inner sacred voice, which includes internal and external sounds.

In nada yoga, the listener is open to things heard and unheard, which resonates with Christina Kubisch's artwork, *Electrical Walks* (2004-2017). These walks she deems "electromagnetic investigations in the city," require the listener to wear special, sensitive wireless headphones that allow aboveground and underground electromagnetic fields to become amplified and audible.[447] The waves are present everywhere (via cell phones, computers, surveillance cameras, ATMs, wireless internet, neon lighting, public transit, vending machines, etc.). Previously hidden sounds, they are made audible through headphones allowing the soundwalker to experience areas in new way. Kubrisch's work plays with the perception of reality, she states: "nothing looks the way it sounds…and nothing sounds the way it looks."[448]

Andra McCartney discusses *Electrical Walks* stating one could argue the electrical walks are "not really soundwalks at all" since they deal with electrical waves outside the range of human hearing.[449] This would contradict with nada yoga concepts since the listener may be sounds from the "divine," leaving me to wonder what exactly is in the "range of human hearing" and what is not? Especially when we consider sacred sounds or "invisible" electronic sounds, why does the source matter if it heals or brings joy to the listener? Sound artist China Blue's work deals with such questions by

[447] "Electrical Walks," http://www.christinakubisch.de/en/works/electrical_walks (June 4, 2018).
[448] Ibid.
[449] McCartney, 226.

exploring the "inner world and transcendence of the mind and technology."[450] *Cassini's Dreams* (2018) is her art work that brings to life the unheard and mysterious sounds of Saturn's rings using raw data from the 1997 Cassini probe, a twenty-year slingshot mission to the planet.[451] Being certainly out of "range of human hearing," China Blue interprets the Saturn sound data for her audience to enjoy along with visuals from the Cassini mission.

Westerkamp trusts soundwalking as not only a reminder to slow down and destress, but a reminder to dedicate oneself to the act of listening. She explains:

> I can go about my daily life and completely forget about this type of mindful listening because of stress and being in a hurry, but when you do this practice, you notice the listening has left you and you try to rope yourself back into a more mindful tact of listening. That appeals to me and applies to being in relationships just as much as being in the environment. That kindof mindfulness we need to apply everywhere…People are seeing it as a practice in themselves to be reminded. A soundwalk is a wonderful discovery of certain places of the city. You're not only discovering the sounds, but you're more present, you're seeing, smelling, hearing things you normally don't in your daily life. That kindof experiences grounds you much more in your community and living space, having a very positive impact, because it just grounds you a bit more to where you live.[452]

In addition, soundwalks or sound exercises could be a way for folks in new cities or people filling disconnected to a place get to know it better. For Westerkamp, she was a German new to Canada and soundwalking "was a way as an immigrant, to get to know the city from a very different perspective."[453]

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[450] "China Blue Biography," http://www.chinablueart.com/china_blue_biography_contact/ (Accessed June 4, 2018).
[451] "Cassini's Dreams," http://www.chinablueart.com/cassinis-dreams/#more-1329 (Accessed June 4, 2018).
[452] Westerkamp Interview (October 10, 2017).
[453] Ibid.

The past several quotes, primarily from women artists, have touched on the healing benefits of sound practices like soundwalking and sound meditations. Such auditory exercises have helped listeners feel present, calm, united to others and/or environment, untangled from the ties of oppression, curious and open-minded about their surroundings, and eager to continue the listening practice. It is time to share these positive outcomes to create a sound pedagogy for everyone to engage in.

Conclusion

Throughout the dissertation we have considered the complex divides between urban/rural and the subjection of all urban sounds as "noise" as well as the power dynamics involved in controlling city sounds, especially in comparing the output of Schafer (Chapters Two and Three) and Neuhaus (Chapters Two and Four). Both men wore multiple hats as artists, writers, sound designers, communicators, and champions of environmental sounds in their own way. We acknowledged Neuhaus's Sirens redesign project as one that lasted decades, spanning his career (if you consider his Sirens a part of his *Listen* series and include the sketches, it spans 1960s-2000s). Schafer's *The Book of Noise*, along with his subsequent publications and WSP endeavors connected to his lifelong artistic and scholarly goal of having humans listen to their environment to create a better experience on earth.

Neuhaus and Schafer had access to resources needed to create the works and concepts they did. If they were not born as white men, their stories, works, and outlook would have undoubtedly been different. They saw how policy (or lack of policy) influenced people. Neither, however, spoke of how noise policies might influence the

intersectional experience – how forms (and overlappings) of race, gender, sexualities, class, age, abilities, cultures, etc., may experience sound/noise. While Schafer spent some time addressing "imperialism"[454] in *The Book of Noise*, lobbied for more regulations, and devoted time towards environmental justice work throughout his life; and while Neuhaus stood against the "bureaucracy"[455] that was the New York City noise enforcement in his *New York Times* op-ed, it took later artists and scholars to take their concepts even further. Scholarship on Schafer is vast, but his influence on the acoustic ecology and sound studies world has proven there is still so much more to research. As far as Neuhaus, my hope is this dissertation is the catalyst for any scholar interested in sound. This is much to consider about the impact of his work on the public and I look forward to seeing more research on Neuhaus. This chapter is a form of activist sound pedagogy, not only in leading the soundwalk, but also in bringing in more female artists and thinkers into dialogue with your work on Schafer and Neuhaus.

Potential future directions of this scholarship could explore how noise policy has affected marginalized sound artists, musicians, and/or communities of listening (streets, venues, and beyond), especially when applying the layers of intersectionality. I appreciate histories on local music scenes, such as Matt Gibson's "A Song Without Music or Music Without Song: Noise Music and Lexington's Modern Avant-Garde" (2014). Here, Gibson creates an ethnography of Lexington's noise scene, interviewing several musicians, including members of the band, Hair Police.[456] I would also be interested in

[454] Schafer's *The Book of Noise,* 16.
[455] Neuhaus, "BANG, BOOooom, ThumP, EEEK, tinkle."
[456] Matt Gibson, "A Song Without Music or Music Without Song: Noise Music and Lexington's Modern Avant-Garde," University of Kentucky's *Kaleidoscope,* Vol. 11,

seeing more research theorizing noise or "uncontrolled" sounds becoming a "technological meditation;" for example, how masking noise with sounds from headphones creates an internalized practice, perhaps moving towards a "zen of noise."[457] I would argue listening to music through headphones in order to block out other sounds would create the opposite of "zen." John Cage would likely agree because to be "with one" to your environment or surroundings would require listening, being aware, and being at peace with all sounds. In yoga, there is the practice of *Nada Yoga,* or the yoga of sound and listening to the inner sacred sound.

In the introduction to Baird Hersey's book on Nada Yoga, Krishna Das explains if you could be listening through God's ears, "I think you would hear the everything and the nothing at the same time."[458] He continues:

> You would hear all the sound and you would hear the silence in which it is all held…. the unstruck bell, the sound of one hand clapping…That silence is alive and full and empty at the same time. There is nowhere outside of that. There is nowhere to go. It's here, always here. And so are we.[459]

Similarly trying to understand the sacred and/or religious meaning behind noise is Steven Friedson's work compares the physiological impact involving the sonic trance of Ghanaian Rituals and Military torture. On one side is a celebratory experience from African drumming communities and the other is violent, traumatic, music prisoners of

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Article 90 (July 2014), https://uknowledge.uky.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1039&context=kaleidoscope (Accessed February 24, 2018).

[457] See: Bart Kosko, "The Zen of Noise: Stochastic Resonance," *Noise* (Viking, 2006). While Kosko is clear throughout his book that he hates noise, he does explore how noise "helps" all and is a life force within itself.

[458] Krishna Das, "Forward" from *The Practice of Nada Yoga: Meditation on the Inner Sacred Sound* by Baird Hersey, (Inner Traditions, Vermont: 2014), xv.

[459] Ibid.

war are forced to listen to. While these experiences are incredibly different emotionally and ethically, Friedson explains the musical ability to transport the listener [forced or consensual] into a trance-like state, and what this means for the body.[460] Another question that might push this scholarship on sacredness, sound, and politics even further is to investigate how soundwalks or sound exercises may connect with liberation theology or other religious/spiritual organizing strategies.

As discussed throughout, developments and critiques within ecomusicology reveal that our human relationship to the environment and with "nature" could still be further theorized, especially when considering sounds within the urban environment and the blurred areas between music, sound art, and soundscape compositions. Regardless of the specifics of research within acoustic ecology, sound studies, and/or ecomusicology, I advocate for more thinking about what would constitute a "sound pedagogy for all."[461] What do we want our neighborhood, towns, and nations to sound like? I see Schafer primarily as a composer and Neuhaus as a sound artist who also happened to be aural advocates. They publicly encouraged others to rethink about how they listened. With using listening or sound exercises by Schafer and Neuhaus, as a way to heal during political turmoil and/or discuss political topics, like in Pauline Oliveros's *Sonic Meditations*, we may start to think about how aural advocacy may turn into an aural activism. Activism goes beyond advocacy and involves a campaign for aural

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[460] Steven Friedson, "The Music Box: Songs of Futility in a Time of Torture," Music and Culture Lecture Series. March 1, 2017. Research Centre for the Study of Music, Media, and Place, Memorial University of Newfoundland (St. John's, Newfoundland, Canada). https://www.youtube.com/watch?v=I4-uvj80J9g (Accessed May 24, 2018).
[461] See: Paulo Freire, *Pedagogy of the Oppressed* (Bloomsbury Academic Press, 1968/2000), Myra Bergman Ramos, trans.

rediscoveries on a political and social level. Perhaps with having listeners think about (public and privatized) sound in motion and what that means on a social level, we can begin to have an open awareness [advocacy] of aurality in North America. Then, we may perhaps begin to engage, envision, and set into action what we want the aurality of America to become. Sound reaches everyone, and for scholars to research the aural world, we must include a method of teaching about sound, which addresses our social and political situations. This would include dialogue about our personal privileges and struggles to better understand our sonic community. With introspection and group awareness, we will then be able to be aural activists for whatever localities we want to develop.

Appendix A

Interview Transcriptions

The following interviews took place from 2016-2017 via phone, skype, or in person. The interviews are shown in chronological order from when they occurred.

Ray Gallon
September 20, 2016

Ray Gallon: How did you get interested in Max?

Megan Murph: I feel like that's a long-winded story, so here's the short version. I did my master's thesis on his percussion career since I was interested in experimental music. I found out about him in an art history class and realized he did all of this percussion music before he did sound art, which I thought was really neat. So, I went up to Columbia University where his files are held and came across his Sirens stuff and thought it was cool project. Years later, getting into my PhD, I got more interested in sound studies and soundscapes and things like that so I sortof stuck on the Max train, writing one of my chapters on the Sirens project. That's the short version, but I feel like I've been thinking about Max's works since probably 2011 or 2012. I've met his sister and have had conversations with musicians he collaborated with and a small amount of conversations online with his wife (Silvia).

RG: Which wife? Did you ever find Judith Bruk?

MM: No, I have not found a contact with her.

RG: She sortof fell off the radar, at one point anyway, for sure she was trying to.

MM: Ok – I will keep digging and try to talk to her as well!

MM: I'd like to talk more about you! Tell me about yourself: where you grew up, where you studied/what you studied in school, and some jobs/things you did throughout your life. That sortof stuff.

RG: I grew up on Long Island, near NYC, which has a lot to do with the answer to your question because I grew up was a community…well, a village on the North Shore. At the time, it had a population of 3000…called Sea Cliff and it's an interesting town because it has its own history. It has sortof become a dormitory town for NYC but it's not exclusively that. It's always had its own sortof characters, a lot of artists, musicians, and so on. When I grew up, about 1/3 of the population were white Russian royalty, running around, talking about the return of the Tsar, and they actually worked as babysitters. All of my babysitters growing up where these Russian ladies mostly because my mother

spoke both Russian and Polish. My mother grew up in Poland, a part of Poland which is now the Ukraine and she spoke Russian with them. They were much more comfortable speaking Russian than English. They all had [in accent] Russian accents and they would ask me [in accent] "why you do this?" As a four-year-old, I thought the best way to communicate with them was to mimic them and they'd understand me better. They though I was making fun of them but I thought I was trying to communicate.

RG: But the town was also full of these interesting artists, but I never met them until I was out of high school. It was the McCarthy era and most of them were laying low. There was one family close to my parents, the Harris family and Ms. Harris had an enormous influence on my life. First of all, I was a bit stricken by their daughter who was older than me and completely unattainable, but the other things is Ms. Harris was a complete bohemian. She knew I had an interest in contemporary music. She would bring records over; she loaned me Thelonious Monk's record ("Mulligan meets Monk") which she introduced me to as progressive jazz and that blew me away, especially when she said "I love the way he makes the saxophone 'fart.'" This horrified my mother, being a proper lady. She also gave me a gift; John Cage's folkways record called *Indeterminacy*. It was a two volume set and she gave one to me. This was around the same time I saw Cage on Television (you know when he was on the game show, *What's my line*). He did this performance called, *Water Walk* – he banged the radio and threw it off the table because the unions wouldn't let him turn it on and off – this was so theatrical and wonderful – I was absolutely delighted. My parents didn't know what to make of it but I was enthralled. That was a major turning point in my life. And many years later John Cage became a friend.

MM: How did you meet Cage?

RG: I met him doing a radio interview the same way I met Max. In fact, I met him before I met Max, but we didn't become friends until much later. At the same time, I met Charlotte Moorman and Nam June Paik, the radio piece was about him - and we did become friends right away. Charlotte and her husband Frank, both delightful human beings. I spent an hour interviewing Charlotte and then ended up spending the rest of the afternoon with them in their loft on Pearl Street in NYC. She had about every handkerchief or Kleenex any artist had ever sneezed into. And so she would show me all of her Fluxus memorabilia and we just became friends. Later on I curated the audio part of her Avant Garde Festival, but I'm jumping ahead. Basically I grew up on Long Island. I studied music as a kid. I invented modern music one day when I played a whole tone chord on the piano at ten years old. My mom said "what's that?" and I said "it's modern music!" and she screwed up her nose. So ofcourse it took me a while to realize others had invented it already.

MM: So you did study music as a kid?

RG: Yea, I started at 6hr old with the piano and later I also studied oboe and percussion.

MM: Did you study music into college?

RG: No, I stopped in high school but I continued playing music and still do. I still play piano.
MM: Tell me about how you got into radio

RG: I had a friend in high school who was interested in radio. I just liked radio because it was a sound based art or medium and in those days there was a lot of very creative radio on. There was a guy named Gene Shepard who was a storyteller and was so entertaining, he was amazing. Then there was the Pacificia Foundation, sortof a far left organization; they owned stations on the east and west coasts. The one in NY is called WBAI. They were, in those days, very fun, creative, radical progressives. There was a guy on the radio named Steve Post who inspired me to go on the radio and later I became his boss. Others were named Bob Fass and Larry Josephson. I did meet Larry many years later. There was another guy, Bill Mozer and together in school were known as the "radio kids" because we did the notices – so we both went into radio. I got involved with the student radio station at university and became the General Manager at Case Western Reserve University (name change). But I didn't finish my degree there. I was studying sociology of communication, but I was also taking courses in theater. I took theater in high school in addition to music and my teacher was the one who really made me understand discipline. At university, there were some graduate theater students from Canada who told me to study real theater I should go to the University of Alberta. They also poked fun that it was a way to get out of the Vietnam war. Which was a real issue. So when my father gave me a used sports car for my 21st birthday, I and another friend visited the University of Alberta. I got in and discovered I was much more at home in Canada than in the United States. And I stayed in Canada as a citizen after graduation. I graduated with a with degree in Stage Design. I never wanted to be an actor. I was one of the few people in drama school who really didn't care about acting. I hated that we had to take acting classes although they were very useful later in my career as a lighting and sound designer primarily. That's what I did after graduating. I helped found the 2nd professional theater group in Edmonton then moved to Toronto. I took film courses in Toronto and worked with the same people who convinced me to go to Canada in North Bay in the community college there. I was offered the opportunity to become the technical director up there but I didn't want to leave Toronto but I did do workshops up there and we later did theater productions around the country, made films together, and created a performing arts co-op together.

MM: How did that lead you back into radio and meeting Max?

RG: Working in theater was not lucrative, so I had to supplement my income by working for the CBC in Toronto. I did lots of cultural documentaries. I did something very similar to what Glenn Gould did but I didn't know about his work at the time. It was all during the 1970s. Gould's compositional documentaries "Quiet in the Land" or "The Idea of North" – he did a series of documentaries about cultures in isolation. They really are compositions because he discovered the studio as an instrument. It was an obvious thing

for him to do, to play the studio like he played the piano. I had the same idea without knowing his works. In fact, the piece I did about Nam June Paik, I had the same studio engineer that used to work with Gould. He was a remarkable person. Including him telling me at one point during the mix – he started doing something that I hadn't asked him to do. But when I went back and listened I realized we hadn't gone far enough. So he asked if I had my reels, I said "yea," and he started cutting up my masters. He said "I hope you have copies of your originals because you'll want them if you don't like it." But when he started mixing, I realized it was genius. He was confident enough to do that and know he was right. I was doing radio and theater in parallel. And working in Toronto. I convinced someone to let me do this piece on Nam June Paik. Somewhere towards the end of the 1970s the CBC was changing its radio format in a way I was uncomfortable with. And I thought I had to do something, so I finally decided to leave Toronto. I resolved to two choses, to go to New Zealand, which needed radio producers, or NYC where I would have the pressure of being in NYC. It was around that time working with Nam June. I did an interview with Charlotte and she asked if I knew Nam June's technician and I said "no" and she said "well, when you go to Japan, you will." I remembered people think like this in New York…she reminded me that everything was possible in NYC. It was Charlotte Moorman who actually made up my mind. Later, I would send her postcards from Europe and tell her I was there because of her. I met Nam June Paik's technician much later not in Japan, but New York. I made it to Japan after Charlotte died. I wrote her a letter on a piece of rice paper and let it fly from the top of Kyoto's super modern train station. Let it fly into the wind. It was my symbolic act for her saying I finally made it to Japan. I originally was going to do it from a Buddhist temple, but I thought, "no, Charlotte would want it from this modern building." It was an emotional moment for me. I didn't meet Max until I had moved to New York in the 80's.

MM: How did you meet Max?

RG: Well, NPR was still a fairly new organization and I had tried to do freelance for them in the same way I had done it for the CBC but they thought that they didn't need to pay freelancers because freelancers were "amateurs." In fact, the producer of the series that "A New Sound for the Siren" was for, once told me that s once told that "access to the airwaves was payment enough." Yea, I don't think they operate that way anymore but they did then. In any case, I think I met Max before selling to NPR. It was most likely through Charlotte. Meanwhile, I had formed this production company with Julia Prospero and Brian Flahive. We formed "Airworks" where we commissioned artists to create works for radio packaged with interviews and so on. And so we got this idea to do this piece about Max and finally managed to sell it to NPR Journal. And so we went to propose it to Max. And he agreed to do it but he didn't like to have recordings of his stuff because he said they were to be appreciated in place. But he did allow us to accompany him into the bowels of Times Square to get recordings inside of the chamber. And then what happened was, all three of us got friendly with Max. He basically said "if you're going to record, then you're going to help out." So he did these tests at Floyd Bennet Field, which was no longer in service. The old runways were long enough we could drive and do doppler effects. We all went down to the police station motor pool and signed out

three police vehicles. We had signs that went on top of them that said "test vehicle." And we drove these things out to Queens to Floyd Bennet Flied from Manhattan. And of course even though we had "test" signs on the vehicles, everyone thought we were real police. People would stop us and ask "I parked over there is that ok?" – it was really funny. Actually, on the way back to the motor pool after testing the vehicles, somehow I got separated from Max and Brian. I was driving a car alone and was stopped by a policeman. A real one. He looks at me and says "you got a tin?" I said "I'm not a police officer" and he told me to get out of the car. I did and explained to him what was happening and we had these letters from the police department saying we were authorized. Finally, his partner said he saw something on the precinct bulletin board at the station about that. They let me go but they gave me a hard time.

MM: Were you recording sounds at the field?

RG: We were recording sounds of various tests. Basically what Max had done was taken a synthesizer and connected it to the speakers of the normal siren of the police car. Because he wanted to test under real conditions: what would it sound like in a police car reproducing sirens used in a police car. In the 15-minute radio piece, we demonstrate how people can play with a police siren and make all kinds of weird noises. We also had a mechanical siren, the old fashion kind that I grew up with, that was on a firetruck; we rode on the truck, actually on a call. We were there when a call came in - a ring got stuck on a boy's hand, which wasn't a serious emergency but they let us ride along with them. There was a piece we also did for Jim Metzner "You're Hearing America" – we did a five-minute version for him – which got a lot of attention. So we were doing all of that. We got to ride in the firetruck. The driver of the firetruck said they used the siren to "push traffic." Then we did the Floyd Bennet Field thing. We recorded from inside and outside of the car, getting stationary positions and movement. There were a lot of people involved in the project in that both the police and fire departments were sanctioning the research Max as was doing. There's a part when Owen Greenspan is talking about what the police department might do to actually implement the sound, which they never did. The basis for the project was because the electronic sirens that are used today are extremely difficult to locate in an environment like NYC. So you hear them but you can't find where they are. And the point is you want to get out of the way but you don't know where to go because you don't know where the sounds are. So the point was to make them less startling and easier to find. And Max used as an example of how psycho-acoustics functions, an alarm clock that he designed where the alarm clock produced white noise. And he set it to eventually get to your threshold of hearing. You set it for a time you want to wake up. And something like twenty minutes before you want to wake up, it would gradually ramp up until it reached your threshold. And at the time of awakening it would brutally cut off. And that's what would wake you. And instead of a sound startling you, instead, you would gradually wake up. This was one of the psycho-acoustic phenomena he had been studying. He used this as an example of how we could design things better. Max in many ways anticipated what we now call sound design before it became popular. I used that term as well in the theater but in a completely different context. I meant it to shape the theatrical space with sound. I worked with sound

and light which are intangible elements to model space. I once did a lecture in Paris on sound and light as plastic material.

MM: When you did the radio show, how was it received?

RG: I have no idea honestly. I never received audience feedback.

MM: When you talked to friend or whoever about the project, what was their response?

RG: They were mostly perplexed by it. But then once I explain they say, "Oh yea we could use this."

MM: Did you work with Max beyond this?

RG: We stayed friends quite a while. Max was doing a project in Paris for the metro. My friend Don Forresta was producing that project. It might have been through Don instead of Charlotte I met Max, I'm not even sure. Don was an American diplomat who worked for the US Information Agency in Paris. He created an American Cultural Center – not the American Center. Don introduced all the experimentalist and the Fluxus artists to Paris – he brought Merce Cunningham over to Paris for the first time. He really created a place for American artists in Paris. And it was through him that Max was able to do the Metro project. Max lived in Paris for a while and we actually coincided in Paris; we got together maybe three or four times. I was doing other things. I was still in NY when he finished the Siren project. Max called asking if I wanted to do another piece on him. At the time I was managing WNYC and I had other things going on and I think was brusque with him. Max was extremely egocentric. Basically his main interest was his own work and your main interest should be his own work too. I know another audio artist who's like that as well, but that's another story.

MM: Now you have to tell.

RG: Oh its Bill Fontana. He and I went to university together.

MM: I'm certain Max's sister has made a similar comment. Do you have anything else you'd like to add?

RG: Max's work is really important from my point of view because it combines a number of things that had been the preoccupation of American composers from the second half of the 20th century – the thing that Max did was create a total synthesis of these things. He's interested in one at the same time: acoustic space, the sound environment (ecological and acoustic), artistic expression, and therefore composition (the word compose does not imply anything original, but you're working with material that's already exists)…Max managed to combine all of those things: the ear of a musician, the mind of a sound designer, the spatial conception of a sculptor…and what was really interesting to me about Max, although he was this incredibly egocentric person, he wanted his works to be

anonymous. He wanted them to be discovered. I always thought that was interesting about him, a sortof cognitive dissonance. The other thing I'd say about Max is he was great fun to have a beer with and to just jaw with. We would talk about all kinds of things, usually about music or something similar.

Wolfgang Staehle
October 17, 2016

Megan Murph: Could you tell me about how you become involved with Max's Siren project? What were your memories of making the video?

Wolfgang Staehle: Did you see the video?

MM: I've seen about a five-minute video. I'm not sure if there are other versions…

WS: It was part of a cable television show in New York.

MM: Was that the "After Art" program? Could you tell me more since I'm not familiar?

WS: Yes! Well, if you hadn't lived in downtown NYC at the time then you wouldn't be familiar. Because in 1980 very few people had cable TV. Most of our other friends didn't have it so it had to been shown in a bar somewhere downtown. I was a member of a group of artists called "Collaborative Projects" - with about forty artists – like Kiki Smith, Walter Robinson, Tom Otterness, Coleen Fitzgibbon - a lot of artists in the lower eastside who banded together to basically survive; to get grants and gallery space. One part of the activities a cable TV show called "Potato Wolf" that was once a week. Anyone who was interested in producing or creating a show could sign up to do half an hour late at night, Tuesdays if I'm not mistaken. It was produced in some small studio on 23rd street in NYC. Because most would record a live performance or whatever in front of the camera, my friend Lugus and myself thought it might be nice to produce a magazine format show. We pre-produced it. At the time I was an assistant for a video professor at the school for visual arts so I had access to equipment and editing equipment. So we produced this magazine – they're on the internet archive. There were three shows. "After Art" – and then the follow up show was called "After What." Lugus got hold of this NPR interview with Max. I thought he had interviewed Max himself, but now I think it may have been something else like the NPR journalist.

MM: Were you ever involved with him beyond this video?

WS: No, I was aware of him but the magazine covered many things and this was just one segment within a half-hour show. We did a lot of things whatever was happening downtown at the time.

MM: So what did you think of the Siren Redesign?

WS: I thought it was funny. It sounded much too friendly for the New York cops [laughs]. You're always used to aggressive hauling on the streets constantly. And the [beeps] and those things were cute. I thought it was a part of a NYPD commission. I was not quite sure who was behind it. Do you know?

MM: From what I've gathered so far, Max initiated, but he got permission from NYPD to use the police cars and such. And it never actually got approved to be manufactured or used.

WS: Well, when I heard it at the airfield I thought there was no chance the NYPD would use this. I guess there was some psychological component to it that it was less stressful or something. But I'm not the artist and the artist is no longer there to ask. What do you think?

MM: Well, it's interesting for me situated a few decades later. Lexington [Kentucky] is pretty small, but I live on a street downtown that's near probably five hospitals, so I hear sirens all day. I think it's funny that I've been thinking about sirens a lot when it's all I hear. I also think it's interesting you bring up the psychological component. I've seen some materials where Max mentions policemen who rode around to test out the sirens feeling less anxious. That concept is interesting especially considering police brutality today and what that would mean if we had those different siren sounds in car. What would that mean for police or other people arriving to emergencies, what sort of mindset the sounds would put them in?

WS: That's a good question; I'm sure Max was thinking about that. Do you know the Rolling Stones song "Street Fighting Man?" Keith Richards was in Paris. And the sirens of the French and German police cars [hums sounds] is basically the police at beginning of "Street Fighting Man."

MM: I'll definitely have to relisten to that! May I ask one more question?

WS: Sure

MM: It seems you worked with Max pretty briefly, but do you have any lasting impression of him to share?

WS: The only time I really met him was out at Bennet field. I remember his work at Times Square and I went there. There may have been a few other times, but I just don't remember because the early '80s are just a haze. Lugus had a better connection with him than I did – he was very nice. We were younger, so he liked what we were doing. He sort of patronized us in a way, but I didn't know him very well.

Herr Lugus
October 23, 2016

Megan Murph: Could you tell me a little about yourself; what you do for a living currently?

Herr Lugus: Since leaving NYC in the 1989, I've mainly been a sound engineer, a 'roadie', with major acts. In 1999 I took on a job at the Mandalay hotel as an audio-visual production supervisor, so I'm not really in the art world anymore. I had a history back in the day making my own audio art, even had a review in the *New York Times*, but I got too busy and I do very little in that field now. I've been living in Vegas for the last 27 years. I got involved with the New York City art world while I was working as the head sound guy at "The Kitchen" back in the '80s. Through that I met many people, including my German friend, Wolfgang Staehle. I found a lot of inspiration from the Kitchen that led to my own audio art at the time.

MM: Could you tell me about how you met Max and became interested in the Siren project?

HL: I met Max through Wolfgang. At the time, Wolfgang and I lived together, letting me share his loft on Front Street. He, an Austrian journalist Joachim Riedl, and I decided to do a Manhattan Cable show for Manhattan Cable TV's public access channel, which we called the 'After Art' Magazine. We thought the Sirens project would make a great contribution to the show, so we met up in Max's studio to record an interview. I was the camera man. We did the show with our own money; we had very little production money to spend. Max told us about the upcoming tests he was going to do with the NYC police department and we got to go with him to the Floyd Bennet airfield to drive these real police cars back and forth to hear their sounds. What Max did was bring his "FORTH-language" computer. This was basically a homemade device with a separate 6-inch monitor. He had a touch screen pen to go along with it, which I found so impressive. He placed this computer inside the police car and interfaced it with the existing siren box. There was also a recording set up with two microphones that recorded the passing police cars in stereo so that he could later on listen and judge what he wanted to do to with the siren sounds. He was out there just documenting sounds. The point of all this was that the locatability of an emergency vehicle through its sirens in NYC was too difficult for anyone within the jungle of acoustic reflections in the city. If you had an ambulance coming from behind you, you wouldn't know where the sound was coming from; you wouldn't know it was behind you. The whole purpose was to develop new sounds and sound patterns to make things more locatable for people on the streets. Eventually sound devices would be installed in intersections of high traffic areas that would communicate with the police car sirens so that their sounds could help in identifying where the source was coming from, utilizing phenomena like the Doppler Effect and interference. That was the big project. What you see on the video was still in its absolute infancy. Max was just getting used to using his sound generating computer – today we could just use iPhones to

do similar things with a 99 Cent downloadable app. I was amazed by his computer – that was big programming back in the 1980s, and I was very inspired by the purpose of the project.

MM: Wolfgang mentioned he met Max through you and you mentioned you met Max through Wolfgang, which I think is funny.

HL: Well, Max and I may already have had a mutual social connection. I had a really good Austrian artist friend, Norber Brunner, who in turn was friends with Max's German intern and computer programmer, I don't remember his name, who was an expert with that FORTH programming language. So this assistant became also my friend, which may have been the connection, but I do not recall that for sure. Most of the time Wolfgang provided the content ideas for the show.

MM: Wolfgang described your "After Art" TV Show as a magazine collage and I'm interested to watch it in its entirety, not just the sirens clip, but as a whole. What were your thoughts on the show in general?

HL: You'll see the show was not pre-edited. It was 'winged,' put together live at the broadcast facility and also very low budget. I loved the aura it had, with its spirit of enthusiasm and idealism. We were piss poor and had nothing. Nobody had a real job and we worked where we could to scramble together some moneys. The cost to rent the air time and the equipment, however cheap, was a lot of money to us then.

MM: Were you involved with the COLAB group like Wolfgang?

HL: COLAB was mainly Wolfgang's thing. They did a lot of great stuff with weekly meetings and did the organizing of art projects of their members. Really great, local people where involved and young artists looked up to the older artists. You'll see a German term in the show's credits that I was more involved in, called the 'Stark & Schwach Gesellschaft', or in English, the 'Strong & Weak Company' which was a name under which some of my own projects took place. Everybody I ever knew in NY was creative at that time in one way or another. It was amazing to go out into a bar in the East Village and have conversations about art and things until 4am. It was a very creative time.

MM: Were you ever involved with Max beyond this video?

HL: Other than socially with his programmer intern, no. Max was always a father figure and the 'older guy'.

MM: [talks about chapter in relation to dissertation and defining noise within art]

HL: I remember I was a sound engineer for many clubs and bands, for composers like Rhys Chatham and Glenn Branca. At first their stuff was called 'noise rock' and then evolved into 'drone music'. Those were the guys who wrote music for tens of electric guitars. I produced the premier performance (for the Kitchen) of Glenn Branca's 2nd

symphony, called “Peak of the Sacred,” live at St Marks Church in Manhattan. If you have one hundred guitar’s frequencies filling the air of a space all at the same time, the interaction and interference of these frequencies would begin to create harmonics which may appear to the listener as church bells, choirs and all kinds of heavenly harmonies – out of noise would come new sounds – your ear-triggered mind would begin to hear new things. That’s the beauty of how noise could be turned into sound knowingly, steered by those two guys who created the works. Any sound consists of frequencies as air movements. If you have a lot of these all present at the same time, two sounds will create a third sound with new peaks and valleys in the air movement. Now imagine one hundred electric guitars with six strings each. They used chopsticks to play them in a strumming fashion, loudly amplified, so loud that after several minutes of exposure, the ear will shut down and protect itself and will only allow select sounds to enter your brain. This selection creates this music and the resulting sounds aren’t noisy but beautiful; imagined things happen. Out of noise comes music.

MM: When you told your friends about the Sirens project, what was their general reaction?

HL: I didn’t talk about it a lot since, but I had mentioned it here and there. Because of our recent conversations about Max, just this morning at breakfast, I was explaining it to two Cirque du Soleil actors, triggered by a real event: We had heard an ambulance drive by our diner and we couldn’t figure out where it was coming from. Everyone at the table agreed not having been able to locate this ambulance!

MM: Any other significant memories of Max to add to the conversation?

HL: There’s only one thing that keeps coming to mind: he was a real gentleman. He was very well spoken. I like when people can express themselves and I admired that he could express himself. He was not a geek, he was not outgoing, but including and very focused. That really impressed me.

Julia Prospero
October 24, 2016

Megan Murph: Would you mind telling me a bit about yourself - what do you do now for a living?

Julia Prospero: I'm mainly retired, but I work as an usher in the concert hall, at Tully Hall, Lincoln Center.

MM: That's exciting! Do you have a background in music?

JP: Not really. I've mostly been self-educated in music. I was more in the arts administration side of things, working with musicians and broadcast journalists. Brian Flahive and I were partners for a very long time before the AIRWORKS group got together. Ray Gallon, Brian, and I were the founders. At the time, I also managed a duo act called 'Ear Food.' Ear Food consisted of Dana McCurdy and Brian. Dana's father was Ed McCurdy; a renown folk singer-songwriter, you may have heard of him. I managed and promoted their duo a lot. I was also involved with a music label called Lyrichord, a well-known, early music recording label. Later on I happened to get a job to be the buyer for the Lincoln Center gift shop. So, in a way, I've been involved in music all of my life.

MM: Could you tell me about how you and the rest of Airworks Group meet Max?

JP: I don't remember how we started hanging out with Max, but we used to go to his studio and drink. In those days we all drank a lot. Ray was involved with Charlotte Mooreman and I think it was through Charlotte that we met Max. And he told us about the Siren project and we said we were very interested in recording for our radio show. So we went out to test the sirens with him several times at Floyd Bennet Airfield. We drove around and used the siren sounds and Max's explanations of the project for NPR's All Things Considered. There should be a twenty-minute version of the show that we did.

MM: What was your reaction to the project?

JP: I thought it was the coolest thing. NYPD sirens always feel far too annoyingly loud, European Sirens seem to work better. There should be a better way to communicate an emergency. The sirens are just too invasive. I'm very sad it never came to anything. They still haven't solved the problem in NYC. I felt it was a very important project. I was glad that Max had a chance to be in history, even though nothing was instituted. He started the ideas rolling. He had such an interesting view on audio and how people react to sound.

MM: What was your overall impression of Max as a person?

JP: We was a crazy dude. He smoked and drank a lot. We all did. It was really fun being around Max. I don't have any specific unique memories, but I remember him as a wonderfully crazy artist.

Owen Greenspan
October 24, 2016

Megan Murph: Tell me alittle about yourself now – I know you're no longer in NYPD, are you retired?

Owen Greenspan: I am retired [see link to biography].

MM: Tell me about how you got involved with the Sirens project and how you met Max.

OG: At the time, I was either a member or the only member of the Applied Technology Unit. My rank at the time was either patrolman or detective. But in the Applied Technology Unit, eventually, there was a group of us. Dr. Marvin Berkowitz was the first director. I think that was after the Siren project. Met Max through Paul Canick, who was the Deputy Commissioner for Administration of the NYPD with responsibility for administration of the Department's budget and overall purchasing. . Paul had an interest in technology and was himself an engineer. He had come from the fire department. He oversaw large expenditures for the upgrading of the 911 police communications system and radio communications. I believe he took on the Siren project and it was assigned to me through him. I'm not sure if Max approached him or if there was an external connection. Max had some sound exhibits around the city and Paul might have met him there, but I just don't know. NYPD was frequently approached with all sorts of ideas and notions and often they're dismissed. But Max's project was not. Here we had someone who said they wanted to redesign the sounds to make them more unique, pleasing and distinguishable from other city siren sounds (e.g. fire vehicles, ambulances, etc.) Police agencies typically bought siren equipping from private sector companies or as part of "police packages" mounted on Radio Motor Patrol (RMP) vehicles ("police cars). Max's project must have been interesting enough for Deputy Commissioner Canick to agree to allow Max access to police vehicles and siren equipment for assessment, evaluation and experimentation.

MM: What was your role during all of this?

OG: I was the project liaison. Even with NYPD willing to cooperate with Max to access a police vehicle, it wasn't going to just allow Max to get behind the wheel. There would be legal issues, liability issues and it is never wise to drive a marked police vehicle on public streets if you are not a member of the police department. We likely borrowed one or more vehicles from the Department's Motor Transport Division for Max to use. I have this vague recollection that we did some experimenting with sounds and distances of sounds in Flushing Meadows Parking Queens. It was a large, open park and I'm pretty sure we drove around to do some sound experiments out there.

MM: There's video footage of sound experiments at Floyd Bennet Field, were you involved with that?

OG: It would have been less populated than Flushing Meadows Park so it's possible, I just don't remember. Or perhaps we used both locations. Floyd Bennet Field in Brooklyn housed several specialized units – Emergency Services – with specialized vehicles, which I would have had access to, so it's likely. Over time I used that location to evaluate the suitability of several technologies for their applicability to police operations separate from Max's project. Which is why I think it is likely.

MM: Do you remember other people involved with the project?

OG: I have no recollection that Max brought other people. I can't be sure that he didn't work with others in the police department, though.

MM: What were the experiments like?

OG: I'm not so sure I would call them experiments. I don't recall Max ever getting to the point where he developed a product where we could see how people reacted to the sound. He was accessing the existing vehicles, the frequencies and the intensities, with a view to redesign them for an urban environment; so they could be distinguished from the noise cluster of various alarm sounds in the urban environment.

MM: What was your general reaction to the project?

OG: It's hard to say what my thoughts were 40 years ago. Given my nature, I probably thought it was interesting and had some potential to be beneficial, but I don't know if I'm saying that because my views of the world have changed. If you think about the intent of the project, to create a sound more pleasing and locatable in an urban environment, I'm unsure if he had the background for that. I don't know if he had a grasp for what people would have found more pleasing, but again, this is me speaking 40 years later. I haven't been in a patrol car in a few decades, but sirens certainly can be an issue. If you have a siren on and you come up to an intersection, people may not recognize the location of the siren and could be crashes. Max's siren redesign could have had safety benefits. I'm not an engineer, but NYC sound bounces off building, so directionality is definitely a challenge.

MM: Could you tell me about any other significant memories of Max or your working relationship with Max to add to the conversation?

OG: In the police department, I had this strange job focused in-part on technology transfer, where we looked at things that were used in areas outside of law enforcement that might have been of use in law enforcement. I was aware vaguely of sound art that Max was doing in NYC and considered that a kind of technology transfer. What he was doing in one area as entertainment got transferred into public safety. So that technology transfer sort of intrigued me and I would have appreciated him for that. I think we got along just fine, but I don't remember much about him as a person and we didn't follow up with each other after the project. I got the sense that he was involved with other things and that his primary focus was on art.

Hildegard Westerkamp
October 10, 2017

Megan Murph: Could you tell me about how Schafer became interested in noise abatement?

Hildegard Westerkamp: I think the initial interest in looking into noise had to do with him just being disturbed by some of the noises in Vancouver. As story has it, he was living in a certain area were a lot of sea planes were taking off from the Vancouver harbor and they really disturbed him while he was trying to compose. This got him going thinking about teaching a course on noise at Simon Fraser University. In that process of teaching on noise, he realized the students weren't really all that enthralled or interested in the subject matter. He realized that rather than being morose or against noise, and instead of ranting against noise and fighting it, how about listening to it. This was different from the kindof anti-noise type of approach to the noise problem of the time, which I think was really brilliant. And at some level, this idea was when everything started at some level for the Soundscape Project. Let's start to listen to the soundscape and begin to understand what we are up against and what we are encountering in our environment. It turned around his whole approach. I would think it's a more positive and creative approach to grappling with issues in the sound environment. At the time in the '70s, there was a lot of effort made to studying noise and measuring noise. In Canada, it was in the air to change noise legislation because the old, more general qualitative legislation was just not enough anymore to deal with the more specifics of the more urban noise issues. In Vancouver, in the early 70s anyways, there was an attempt to change the noise bylaw and I got quite involved in that. When he wrote *The Book of Noise*, that was really, I think, his way to articulate noise and how that all fits into the approach to listening to it and to the approach to trying to reduce noise, changing the sound environment. To me, *The Book of Noise* was the first step to grapple with noise issues. The World Soundscape Project had not really started at that point. He had written *The New Soundscape* by that time and he written *Ear Cleaning* already and they were written in the context in his music education books. He wanted to wake up the ears of music educators and say, 'let's expand our ears beyond the music ear cleaning, let's ear clear in terms of the environment.' So, the late '60s, in 1965 he got the position at SFU, a relatively revolutionary university in that time, so in that context he was writing a lot of those things. The WSP officially began in the early 70s. We never know when it really started. I wasn't there until 1973 and they had already done some work by that time. So, all of that stuff, [his publications] happened before the WSP. *A Survey of Community Noise Bylaws in Canada* is credited by the World Soundscape Project. The main group of the Soundscape Project was Murray Schafer, Peter Huse, Bruce Davis, Barry Truax, Howard Broomfield, myself all together from '73 to '74. Truax and myself joined in '73

when the others had already been hanging around. And there were others who were involved also involved but it was more loose at that point.

MM: Could you tell me about your thoughts on the changing soundscape in Vancouver when you first moved there (1968-until)?

HW: Well, at that time Vancouver had a feeling of being much more at the end of the world, really. Whereas now it is a part of the pacific rim, a sortof gateway, in the middle between the European-North American continent and Asia. So, it's become much more of a hub and big city, which its wanted to be ever since 1986 when the Expo happened here. Up to that point Vancouver was a relatively sleepy place. Certainly, coming from Europe, I felt it had this sense of wide open space with ofcourse the beautiful mountains and ocean and relatively quiet. When we were studying the Vancouver soundscape, some of the sounds that are not so prominent or obvious anymore were the harbor sounds, boat horns, fog horns, and trains. They were all very beautiful because we had a company in town called Airchimes that designed all of these horns and the person who ran the company had a very musical ear and he designed very beautiful horn sounds. We had all these beautiful fog horns and signal sounds in the city and the train horn ofcourse still is here. We still hear them, but generally, the city has become bigger and louder and they're not as audible as they were. When I talk to people who live in the suburbs, they don't even know that we have a horn that rings every noon hour the first few notes of "O Canada." People just don't know. They're too far away and they just can't hear it. It's not something they're familiar with, which is always surprising to me because I can actually hear it from my house on certain days. The city has grown high rises like weeds over the last ten years, so having these high rises ofcourse creates an acoustic change. There is more exhaust from the high rises. There is a wall that might prevent you from hearing sirens properly or might prevent you from hearing sounds from the harbor. It's a lot denser now. It's become more busy. Car sounds might have become more quieter but there are more of them. The airport has become bigger. The airplane sounds have become quieter but there are more of them.

At the time when Schafer became concerned with noise, he always said the '60s was the loudest decade of the world. He talks about the transportation noise and motors being a whole lot louder and the noise abatement on those have quietened down because it's been required by abatement. It's become a necessity. He also talks about not liking rock music and amplified music. He was quite against that and the loudness of that. So, that's why he claims the '60s was the first loudest decade and maybe now it's continued that way.

I think partially he's right because post-war period had kindof encouraged this economic boom and that encouraged an industry of motorization in North America with new equipment that was never really around before the war (like lawn mowers, vacuum cleaners, and home appliances that were all motorized). Everywhere you had motorization and people were proud of it, they thought it was great because these things made life easier. Most people didn't worry about it - why worry about the noise when this

stuff made life easier. And ofcourse Schafer made us go out to listen to it to see what we are doing to our world in this push for progress. To me this was very important. This inspired me because I came from the music background. My listening was very much focused on classical music and my ear training I found was very scary and felt challenged by it often and felt it was a bit oppressive the way I was educated. When Schafer came along and said let's listen to all of the world and let's expand our ears through the environment and think about the quality there, I was completely inspired. It freed me and absolutely liberated me whatever was oppressive about music education. It was a complete inspiration working with him. I was in an environment constantly listening and recording sounds and constantly talking about the quality of the sound we were listening to it was an airplane, music, or a quiet environment. We researched sound on all levels. We researched acoustics, physiology of our ears and bodies, the reception of sound through our bodies. We learned and learned while he was writing his books. For me, it was a way as an immigrant, to get to know the city from a very different perspective. I ended up learning recording and I was not a composer at that point, but I learned how to work in the studio. We had a radio station where I worked doing the Soundwalking radio program, which led me into my career. I ended up composing because I was fascinated by listening to environmental sounds, recording them, obvserving my colleagues in the studio. At the same time, this constant drive to organize other people and the community to be activists about sound and to learn to listen to the environment and to learn to think about ecologically about the environment, which ofcourse includes noise. For a while after I stopped working for the WSP, I was involved with the Noise Project, where we did some education in schools where we taught students about decibel levels and legislations.

MM: Could you tell me more about the noise project you were involved in? When was that?

HW: That was in 1974-75. It was with a local organization that got a grant from the city to do noise workshops in schools and city council, especially because there was an attempt to improve the noise legislations. We invited them to think about noise and encourage them to listen to the noise and to understand it's not just about numbers and decibels but about a complex area about perception, which makes the noise legislation very complicated. It's very difficult to legislate noise because our perception is such a complex thing we have – one person's snore is another person's music. So how do you legislate that? How do you put decibels to that? Our task has always been to understand how we listen and how do we convert that into a community of listeners and how we deal with a community of noise and a community of sound events.

MM: I believe I read on your website you wrote a noise handbook for the Society Promoting Environmental Conservation – was this the same project?

HW: Yes, that was the same project. I wrote a little thing called "shh." It was my attempt to write something post-*The Book of Noise* – more concentrated on Vancouver and the here and now, something we could hand out at the workshops and to give to schools. It was a bit amateurish but it was a good process to go through to educate people on decibels and listening. I don't think it's half as good as *The Book of Noise*, but I think it was good for the specifics of what we were doing then. Part Two was called "Towards a better soundscape" which focuses on what the citizens can do - a bit more an activist approach than *The Book of Noise*. Some of the listening is in there, but the main point was how do we work with noise in all aspects of our lives?

MM: Could you tell me about some memories you may have of Schafer's early publications influencing the WSP, maybe getting into the Survey of the Bylaws?

HW: All of that went parallel – by the time I got involved *A Survey of Community Noise Bylaws in Canada* was already completed in 1972. One of the projects I was involved with was to gather information on noise legislation from around the world. We collected a lot but never analyzed it. Murray did used use that information in his *Tuning of the World*. I was in the Project when he was writing that book and I was a researcher when he was writing that book. So, everything he had done before really led up to that book. We had a "literature file" which were we had quotes about noise from books we found – as a source on how did people perceive noise and sound from books. I was very involved with finding that information. So, there were all of these projects going on everywhere trying to gather information, which he then integrated into *Tuning of the World*. You know the book is a bit of an anthology trying to cover sound from many perspectives from silence to community noise, anything from morphology to natural sounds to decibels. I was there when all of that was being put together in that book. We had meetings every Friday where he would bring one of the chapters, we would take it home, and the next week we discuss it, critique it and continue to do more work. We were very active. It was a very interesting time.

MM: How do you think Schafer would describe an ideal soundscape and how did that definition change over time over many decades?

HW: I think he would confirm what he's always written. He would define an ideal socundscape, acoustically speaking, as one where we can hear every sound – where no sound masks another sound – where there is a human scale to the soundscape, we can hear our footsteps and our own voices. That to him, is what a balanced soundscape is. The living beings with the other beings – no one is being masks. There's been a fair amount of controversy as you say that he idealizes natural sounds. Well, yes on some levels he has made himself vulnerable in the way he speaks about nature in *The Tuning of the World* is provocative and sometimes his language is challenging. Sometimes he wants

to rattle people alittle bit to make them aware. So, the impression the people get from his writing is he's for silence and against noise or he's for nature and against cities. That's become the sortof cliché critique against Schafer, but if you not take his tone so seriously (which is also sortof the tone of the '70s, we were all trying to rattle eachother to make eachother more aware, so I see it more as a historical thing), when you understand that context and you look at the basis of the book, he's talking about the acoustics of a natural environment as being ideal. As soon as we drive our car into nature, we mask our footsteps, we mask the sound of crickets, and the subtle sounds of nature. That's our reality. That's an acoustic reality. What Schafer was trying to do with the WSP project was to really listen to those acoustic realities and understand what that means in terms of acoustic design. What kind of acoustic soundscapes do we want to have and create that make a balance as best as possible.

Yes, he ran against noises. As do I, so do many. The question really becomes what do we understand about a balanced soundscape? And this question needs to be asked over and over. Because soundscapes keep changing and sounds invade. Let's talk about the oceans. I mean the underwater soundscapes have become a huge issue in terms survival for some of the species in the water because the noise interferes with their communication. The same happens in cities. Birds have been louder in some cases because the city noises have become so loud they have to become louder – and lucky them that they can actually do it. There are very real issues around living beings having to grapple with the interferences of broadband, motorized noises.

Human beings have to deal with air conditioned buildings that are not only a problem because the air isn't very good, but also because they're constantly surrounded by this kindof whitenoise fog, what Schafer called a soundwall. This isolates you from further sounds and larger acoustic spaces. Traffic sound does the same thing in the city. You can't hear beyond the street you're on. We can't hear our footsteps or our own voices sometimes. There's a reality to all of this that Schafer wanted us to not forget about. This is what's happening right now.

I think he would still say the same thing now if he were able to be interviewed by you.

The things I think I have taken up and inspired by the most from his work have been around listening. We have a group here in Vancouver called the Vancouver Soundwalk Collective. I do a fair amount of soundwalks and listening thing with people to maintain that kindof connectiveness to the soundscape because we have a way of ignoring it. We know how to block it out. If we get very good at blocking it out, we might forget the toll it takes on us. We should never forget that. We need to understand what we do to ourselves within the sound environment when it is noisy and how can we change things acoustically to keep our sanity especially in urban environments.

Also, how do we get rid of oppressive silences – silences that are without life? For instance, you can call an office with whitenoise that's not very loud, but has this air

conditioning sound, could be seen very much as an oppressive sound because there is no life in it. All you're hearing is a bit of broadband whitenoise that's relatively quiet, but it makes it so you can't really hear other voices very well or really anything really well other than signals. How do we get a positive relationship to attack silence that is inspiring, alive and well, and a source of repose and relaxation? We talked about these things in *The Tuning of the World* and it's all in the book, but it needs to be revisited all the time because most of us are not really familiar with how to speak about noise and sound - how to articulate through language about sound. We have a relatively visually oriented language in our descriptions. For us to think and talk about sound is an additional step. We need that to make it conscious. When we have soundwalks, we always have discussions afterwards so we can share what our experiences were. How did people hear the soundwalk, how did they experience it? And then you discover that everybody experienced it completely differently. Some people hear things others didn't. We can focus on sound and block it out and zero in on our own thoughts and block sound out all the time. So, this inner/outer switching of listening to the world and listening to our own thoughts go on all the time. The better we understand that, the better we can begin to think about dealing with it in the world and staying sane in the cities from an acoustic perspective.

MM: I know you talked about the discussions afterwards, but could you talk about the connections you might make with other people during the soundwalks?

HW: Yeah, it's interesting because usually when we start a walk, everyone is coming from different directions and we may have a group anywhere from 16 to 30. It's always very interesting. During the public walks, we usually do about an hour of walking in silence and not speaking. Each time is slightly different. The overall, general pattern is, you can feel people's distraction when they arrive. They're looking at where we are, still coming from somewhere else, kindof trying to get adjusted to listening to the sounds around them. You can feel it.

There's often a point, depending on what happens in the soundscape and within the chemistry of the group, you can actually sense when we are all listening together. Something settles in the group and people are actually listening. There's something completely different that happens and it's very interesting because it creates a sense of calm. People slow down, their bodies slow down. They're not in a hurry anymore, not goal oriented anymore. They're clearly in touch with the sounds around them and their environment through this process of listening. Often these points come up in the discussions later. Someone will comment on a sound they remember and people will relate clearly to a certain sound event that actually made that happen. It's not always like that. Sometimes it's more gradual and more individual, but you still people slowly settling into the process of listening and not worrying about anything other than the soundwalk. The worry has disappeared and they feel safe within the context to just listen.

By the end of it, everyone looks a lot calmer. Sometimes it's even hard for people to switch and express what they heard and express their thoughts because they were in a different mode. The mind works differently again once you get into the discussion part, so it takes a bit of time, but most of the time the discussions get very animated – sometimes lasting over an hour depending on the meeting place afterwards. The discussions are just as important as the soundwalk because hearing other people talk about an experience we all just had completes the soundwalk. The group discovers sounds and learn from each other yet can reflect on our own role, our own ear and brains behavior. In this context, every experience is different, making it endlessly fascinating. I never get bored and usually I'm newly inspired by it.

MM: I'm wondering if you think there's a sense of individual and group healing that may happen on these soundwalks with having people become more present?

HW: That's the hope. It's a slower approach, a practice. You're practicing listening to the environment and you slowly feel the altering of our relationship with the environment changing. We all need reminders of listening. These soundwalks are exactly that. I can go about my daily life and completely forget about this type of mindful listening because of stress and being in a hurry, but when you do this practice, you notice the listening has left you and you try to rope yourself back into a more mindful tact of listening. That appeals to me and applies to being in relationships just as much as being in the environment. That kindof mindfulness we need to apply everywhere. I've noticed this year more so than before I'm recognizing faces in soundwalks and people coming back. People are seeing it as a practice in themselves to be reminded. A soundwalk is a wonderful discovery of certain places of the city. You're not only discovering the sounds, but you're more present, you're seeing, smelling, hearing things you normally don't in your daily life. That kindof experiences grounds you much more in your community and living space, having a very positive impact, because it just grounds you a bit more to where you live.

MM: Thinking more about soundwalks and Neuhaus's Listening Walks, are you familiar with these walks? Do you think Schafer was familiar with Neuhaus's Listening Walks?

HW: I am familiar with Neuhaus, but I'm not familiar with his Listening Walks. I know he has done installations and things, but I'm not actually familiar with his Listening Walks.

MM: They were primarily in the '60s when he was still a percussionist. He would do them before concerts or performances to sortof get his listeners ready to hear experimental music. The first one happened in 1966 where he'd walk a group around to

explore sounds before one of his loft concerts, so I always wondered if Schafer was familiar of this.

HW: I'm pretty sure he knew of Neuhaus, he might have known him personally, but I cannot tell you. I do not know to what extent he might have encountered that. Neuhaus was someone I heard about but I don't think he's mentioned in *The Tuning of the World*.

MM: I don't think so, he's primarily known in the sound installation world, but before then he was a percussionist and by the late '60s pretty much gave up performing. He released an LP and after that, focused primarily on sound art.

HW: By the late '60s I wonder if he had heard of Schafer or the concept of soundscapes because it was already out there? But it was also in the air at that time. There was John Cage, Pauline Oliveros - this interest in listening to the environment was simply in the air.

MM: Yes, Neuhaus was friends with Cage and Feldman and others and I'm thinking them both doing Listening Walks and Soundwalks was a "spirit of the time"

HW: Yes. Part of the '60s and '70s was sortof being perceptually more open to the world. Not just going by traditions and forms and the way things had been done, but let's be in the here and now. Let's use our eyes and ears and body/selves to relate in the world. That is exactly what happened in the late '60s.

MM: Later getting into the late '70s and into the '80s, Neuhaus began a sirens project where he started to redesign the NYC emergency sirens for police cars and firetrucks. It never took off because of lack of support and funding, but he redesigned and created these sounds.

HW: It's interesting you're saying this because I'm sure we must have heard about that. I'm sure we had conversations because we [WSP] were constantly talking about how these sound signals function in cities and how they could be designed more effect and not as horrible and destructive to our senses. By that time, though, Schafer was already gone from Vancouver. He may have known some of this information. I have a feeling he must have talked about this in his lectures later but I cannot actually give you an exact quote.

Phil Orenstein
April 23, 2018

Megan Murph: Tell me about yourself and how you met Max. How were you involved with Mass Art Inc.?

Phil Orenstein: My experience is not in music, but in art. I was at Rutgers in the 1950s as a student. At the time, the art department was doing some really innovative things. Many of the artists in Fluxus were at Rutgers, Bob Watts, Geoff Hendricks, George Brecht, plus other artists like Allan Kaprow, George Segal, Roy Lichtenstein, Lucas Samaras, Bob Whitman, and others. Kaprow was the gadfly of the group. He was the one who started the Happenings at Rutgers. I took an art history class in modern art with him on Wednesday nights. He would always talk about John Cage, making Cage sound like an ancient guru in the Himalayans somewhere. Cage was actually in his forties. What I later found out was that Kaprow attended Cage's class at The New School on Tuesday night and told us what Cage said on the following Wednesday. Cage's class had artists, musicians, performers and poets. Some had been at Black Mountain College. In the 1950s, everything was categorized. Music was music, art was art, sculpture was sculpture, and that group tore it all apart.

By the time I graduated and decided to become an artist, New York was the right place to be. I got interested in doing inflatable sculptures. I thought I needed bigger machines and silk screening facilities, so I talked to a friend from Rutgers, Sujan Souri, who was a businessman, about getting that. To raise money he said, "if you make me some samples of things I can sell; I'll take them around to stores and see if there's some interest." I made him some tote bags and inflatable pillows. Within a year, we were selling a million dollars' worth of stuff and that is how Mass Art started. It was really mass-produced art. Pop Art had taken supermarket aesthetics and brought them into the art galleries (like Warhol's *Campbell's Soup Cans*). We wanted to put gallery art into the supermarket. This was from 1966 to 1969.

I thought, since we were making some money, we would ask other artists to create products for us to help sell. We asked a number of artists we knew around New York. Some were interested, others weren't. Among the artists we asked were a number of musicians. We had met some of the musicians associated with John Cage, like Phil Corner and Richard Maxfield, who were in Cage's class at The New School on Tuesdays. Mass Art contracted to do three records: by Terry Riley, Allan Kaprow, and then Max Neuhaus. Terry Riley was in Morocco when Maxfield had put a piece of his in a concert in our gallery. Terry then came to New York with his family and we helped him find an apartment.

So how did we meet Max? Max Neuhaus, you know, was a percussionist. My wife, Joyce Ellin Orenstein, is a composer, so we went to a lot of a contemporary music concerts in the 1960s, and Max stood out, so we were aware of him. When Max did the Mass Art record, he used the recordings of four Fontana Mix concerts using timpani, loudspeakers,

and feedback. My wife and I went to his performance of *Fontana Mix-Feed* at The New School. John Cage attended and was wild about it. It was one of the loudest concerts we had ever been to. Max had several timpani with contact mics pounding on the them. At the end, Cage stood up and cheered.

The album cover was basically a vinyl sleeve with the record inside, using the same technique we used to make the inflatables. My inflatables were made of two square pieces of clear vinyl silk-screened with images, which we then heat-sealed around the edges plus a valve in the center. Max's record cover was made the same way we would have made a pillow, except without the valve. The back of the cover had the directions to *Fontana Mix*. Further, Max had designed a machine he called the Max-Feed that Mass Art funded and sold. We wanted innovative or edgy art to sell at supermarkets. He got a clear, plastic box and a transistor radio and turned it into a transmitter to transmit feedback. One was to put the Max-Feed antenna over a regular radio and played the feedback at full volume. The noise could be deafening. The Max-Feed was small and very portable. The entire thing fitted in your palm.

To celebrate the release of his record and the Max-Feed Max arranged a concert at the Mass Art store on Canal street, New York. It featured six artists and musicians using the Max-Feed in various ways. Kaprow had an amplifier and these very large speakers with the Max-Feed, which he put in the freight elevator of our industrial building. People waited for the elevator on one floor. When it came they got a blast of loud feedback as the doors opened. Then they would ride the elevator with Kaprow and the feedback noise. The other artists did different things with the Max Feed. Phil Corner fried some eggs, Alison Knowles made a print. The event was breaking all the norms and John Cage came and approved. Max was pretty competent with technology and a great percussionist. New York in the Sixties was a very exciting place for artists and musicians.

MM: Any other significant memories of Max to share? Did y'all stay in touch?

PO: I kept in touch with Phil Corner because we were both on the faculty at Rutgers and some of the other artists. Many migrated to Italy, so from time to time I would hear from them, but that is about it.

Appendix B

Interview Release Form

I (print full name) _____ give permission to Megan Elizabeth Murph to utilize the statements given in my interview on this date as a research source. This may include quotations, full transcripts of the interviews, photographs, or replay of the audio/video taken at the interview. Any restrictions I have with this release are listed in the appropriate section below.

Signature:

_____

Date: _____

Researcher's Signature:

_____

Date: _____

Restriction description:

Appendix C

Herr Lugus, Joachim Riedl, and Wolfgang Staehle's "Art What"

an Episode of *Potato Wolf*, May 1981

*To access clip, see: https://archive.org/details/XFR_2013-07-17_1A_01. For the segment of Neuhaus, please start at 33:50.
*Video of segment also housed in Max Neuhaus Papers, Columbia University Rare Manuscripts and Books Library, NYC. Box 21, Tape 3.

Max Neuhaus: For the past four months, the project to develop alternative warning sounds for police cars, ambulances, and fire apparatuses has been underway. The project's goal is to design and introduce a means of implementing a solution to the problems created by present emergency vehicle sounds. The project will give siren users a practical means to upgrade their equipment within feasible, fiscal constraints. The progress so far has proven the goal is an attainable one.

Woman: Initial support for the project has been an enthusiastic. Planning grants from the NEA and the New York State Council of the Arts have funded preliminary research and on site testing. The NYPD has encouraged the project by providing lab facilities, research assistants, and test vehicles. A spokesman from the police stated: [man's voice] "Heightening public responsiveness to emergency vehicles is important, further that this may be brought about with the sensitivity to the psychological and sensual well-being of all who are within ear shot would truly be an act of social progress."

MN: We're testing outdoors today with two New York City police car vehicles. The idea of the project is to modify existing siren equipment with new sounds utilizing the existing equipment but adding synthesis circuitry which will make these new sounds. So in a way, these two cars are our working premise for the project. The project is really twofold: an aesthetic approach to the problem and a scientific approach. I'll be using a computer controlled sound synthesis system from this car and changing the sounds coming out of that [second car] by remote control. This system allows me to try many things and compare them. I can set up situations that are complex, save them, and compare them immediately with a past situation or a new situation. It's a way of keeping track and having a great deal of flexibility in trying sounds. It's important for us to really deal with the reality of the situation as well as the laboratory situation. To be outside and as real life situations as possible. We're in the very early stages of the project. We're not into complex sounds yet; just trying very simple sounds to get very basic ideas of how sounds outdoors coming from moving vehicles act.

Max turns to Ray Gallon: "These simple sounds, they're not likely to be sounds that would actually be the siren in the end, are they?"

Ray Gallon: “Oh no, not at all. We’re really just exploring basic psycho-acoustic phenomena at this point.”

Woman: The aura of panic and tension created around a city by emergency sirens is a constant psychological irritant. Behavior, attitudes, and emotions are unquestionably effected by the intrusion. Research has established there is a direct link between sound and human emotions and that we are highly sensitive to invasion of our acoustic privacy.

Max Neuhaus: Current siren sounds threaten safety as they are inherently difficult to locate, confusing drivers, making it impossible to determine appropriate action.

Man: A police study shows that 400 to 500 people are killed each year in accidents involving police vehicles. Studies conducted by the University of Oklahoma estimate that one out of every seven emergency vehicles are involved in an accident each year.

Woman: The Society of Automotive Engineers conducted a study which concluded that reliance on present audible warning devices is not justified, yet there has been virtually no investigation into alternative sounds which could be more effective, less destructive and easier to live with. Hear Incorporated has embarked on a program of research, development, and testing to attempt to correct this neglected area of public safety by combining the latest scientific and technological resources with the insight of the humanities.

Max Neuhaus: Successful implementation of an effective, nonirritating emergency vehicle siren would set a significant precedent for humanizing the technology upon which our society is so reliant.

Max Neuhaus: The functional deficiencies are that the siren is hard to locate. And that’s the information that’s necessary to make an intelligent or an appropriate action in response to it. If you don’t know where it is then you don’t know what to do. The second aspect is the nature of the sound itself and the psychology behind it, which is simplistic or rather primitive thinking. Most people when they hear the air horn, they stop dead in their tracks and block traffic. That coupled with the fact that this particular sound has gradually become the largest aural feature in a dense, urban environment.

Appendix D

All Things Considered Segment on the Sirens Project

* Housed in Max Neuhaus Papers, Columbia University Rare Manuscripts and Books Library, NYC. Box 38, CD 25.

Noah Adams: Most of us, when we're in the car and we hear a siren, we start hoping for the best. There's an ambulance coming or a police car, but we can't see it yet and the sound is frightening. But even more alarming is that more and more people don't hear the siren or don't notice. The Oakland California Police Department has tested successfully a new device for emergency vehicles. It's been invented by Max Neuhaus, an aural artist who designs sound sculptures usually for museums. Max Neuhaus says the emergency siren is long overdue for redesign.

Max Neuhaus: We began with a fire engine being pulled by six guys and a guy in front blowing a trumpet. We added some bells then at around the turn of the century they invented the mechanical siren, which is two disks, which turn against each other and produce this wail sound. The approach, up until now, has been the louder, nastier sound we make the better it will work. That may seem correct on a surface level but it doesn't really hold up very long. It produces a kind of hysteria and hysteria isn't the best way to communicate with people. The main flaw with the sounds that both Europeans and Americans agree about is that they're very difficult to find. You don't know where it's coming from and if you don't know where it's coming from then you don't know what to do.

NA: You don't know which way to turn.

MN: Yeah, you don't know whether you have to stop or whether you should keep going to clear traffic. You don't know until you see the thing behind and at that point 90% of the people start to panic. The approach I tried to take is to provide information about where the vehicle is, how fast it's moving, and provide a set of sounds which in fact aren't hysterical, they relate kind of bell sounds.

NA: How does it actually work in terms of if you're in a car and let's say the windows are rolled down and you hear your siren coming from behind you; how would you know really that it's from behind you as opposed from the side and how would you know how important the emergency really is?

MN: It's not so much the importance of the emergency but how the emergency vehicle relates to you. We're actually not just projecting a sound 360 degrees around this car; we're projecting a sound shape that has different characters at different vectors from the car, another words from different directions from the car. You can hear the back of the car as opposed to the front of the car. The front of the car sounds more urgent than the

back of the car. This location problem is fairly simple for somebody standing on the street. The second problem, which is documented as the most dangerous one, is that two drivers of two different emergency vehicles going to the same emergency around a blind corner can't hear each other. And frequently they hit each other and fatal accidents are caused. The location and this problem actually tie together in a solution. We locate sound sources by the way they begin. So a sound with many beginnings lets us automatically be able to find it much easier than any kind of continuous sound. The reason two drivers can't hear eachother in two different emergency vehicles is because that the sound is continuous. Their sound is much loader in their car than any other sound could be. So by making bursts of sound with silences in between we solve both of those problems. We give a lot of beginnings and we allow some silences.

NA: Did you intend to make these sounds pleasant to hear?

MN: In general, there's no reason the sounds have to sound alien and artificial. A level of urgency can be gotten across without making a sound from outer space. If you're twenty feet in front of the car it's a very uncomfortable sound but if you move ten feet out of the direct path of the car, then it's not an uncomfortable sound. It's building a contour, I guess, of what I call urgency. I've always thought that if there was a visual element in our city as obnoxious as the current siren sound, then it would never have lasted. Sound is a tremendously powerful element at determining how we feel. It's very easy for us for example for us to sit in a room with a color on the wall we don't like. Most of us would try to leave a room with a sound we can't stand. But somehow we allow this color to color our lives.

NA: Sound designer, Max Neuhaus, talking with us from New York. His company developing the new siren is called Siren Sounds Incorporated and is based in New Jersey.

Appendix E

Documentary on Neuhaus's Sirens Project, 1989

*Video Housed in Max Neuhaus Papers, Columbia University Rare Manuscripts and Books Library, NYC. Box 18, Tape 4.

Max Neuhaus: I easily recognize people on the telephone but it's impossible usually even for me to recognize people I know very well on the street unless I hear their voice. And it doesn't mean their faces aren't catalogued in my mind as well as anyone else's but it means that the file tabs on all the files are aural instead of visual. Most people are visual; mine come in here [points to ears]. And it gets one into a lot of trouble; people think you're snobbish, you walk past them in the street, you don't know who they are. If they just say one word, I could find them!

Narrator: There is something fascinating about people who make it big in one field and then decide to chuck it all and do something else. A man makes a pile of money in designer watch bands for example and then walks away from it to become a teacher or ranch hand. In Max Neuhaus's case, the switch is more subtle but no less dramatic. In the 1960s, he was a virtuoso percussionist with a master's degree from Manhattan school of music, touring the United States and Europe giving solo recitals of percussion works of Stockhausen, John Cage, and other modern composers. But along the way be found himself becoming increasingly disenchanted with the whole idea of concert halls, performances, and virtuosity itself. In 1968, he quit performing.

Max Neuhaus: Essentially the work I do now is in a completely different direction. It's counter to the kind for work I was doing as a solo performer. It's not about being a virtuoso, it's not about collecting an audience for an advance, it's not about performing in front of that audience.

Narrator: So Max took his percussion equipment, all 2000lbs of it, and put it in storage. Max Neuhaus quit the stage and went out to become a maker of what he called sound environments.

Max Neuhaus: The eye is only one window to the mind. The ear is another and the ear is surprisingly uncluttered. It's free of cultural baggage. It's an open, fresh window. That's how I see it.

Narrator: His new career has not made Max a celebrity and it certainly hasn't made him rich, not yet. But he does have a new project, which has some very practical and even potentially profitable applications. It is the siren project.

Max Neuhaus: What I'm trying to do is…I see the sounds that we have by accident in dense cities color the city with a kind of hysteria, but we are so naive about sound, generally the public mind is naive about sound, that is it never occurred to anybody that there could be something different. It's possible to get ones' attention without being hysterical. In many ways if we think about social communication, it's much more effective to communicate un=hysterically. One of the silliest aspects of the current sounds would be silly if it wasn't tragic is that they're all continuous sounds. And for the driver of the car going to an emergency, he can hear nothing except the sound of this siren at the top of his car, which means he can't be warned at a blind corner about the arrival of another emergency vehicle going to the same place. Some of the most traffic accidents where all the officers in two police cars have been killed just result from the fact that there's no space in the sound. It's such an obvious idea.

Narrator: It's curious that no one ever thought about the problem before, but no one ever did. So Max did what any prophet before his time would do; he went into the desert and worked on it

Max Neuhaus: Ofcourse I'm doing something; I'm don't know what I'm doing; why else would I do it?

Narrator: Then Max came to the city to see if the siren would work.

Max Neuhaus: So we've tried to make sound patterns where are easy to locate; that kindof utilize the built-in mechanisms we have in here [points to brain] to find things. And also we're doing a very special thing, we're projecting one sound out the front and one sound out the back. The front sound is more urgent than the back sound, so even when the vehicle is out of sight, a hearer can tell how much danger he's really in or what's the likelihood of this vehicle interfering with his path.

Officer One: People stop all the time when they hear the sirens. Half the time they don't know if they should pull over or just stop where they're at. That's where problems run into.

Officer Two: That's the natural reaction of everybody. They drive along and they look in their rear view mirror and they hit the brakes.

Narrator: It has taken Max Neuhaus ten years to get here. He's not about to rush it now. Slowly, painstakingly, he is listening and altering the sounds. His computer controlled sound palate provides him with thousands of options. He listens as he did in the desert. But there him and his sounds were alone. This is the city; this is the real test. Is the pause in the signal long enough or too long? Is the sound of the approaching car different enough for the sound of the car going away? Can a siren command attention without being hysterical? How urgent is urgent enough?

Max Neuhaus explaining the siren: This is the top of the urgency scale, it's a sweep up as it turns towards us, and now as he turns away, it's a sweep down. As he comes towards us it goes up and sweeps down as it goes away.

Max Neuhaus asks officer what he thinks of driving and officer responds: "It's very pleasant driving the car from what I'm used to. Previously in other types, inside of the car is unbearable. But this is very pleasant. You can drive and concentrate. This is a good system."

Max Neuhaus: How does one change the 625,000 sirens in the US or the million odd sirens in the world? All I've done is approached the problem with the knowledge I have of sound and acoustics and applied them to this problem and spent some time thinking of this specific problem and what the solutions might be.

Narrator: Historically, artists have changed the way we see the world. If he has his way, Max Neuhaus will change not only how we listen, but what we hear.

Appendix F

Megan Murph's Soundwalk Layout (February 9, 2018)

4pm: Lexington, KY Central Library Lobby. Murph greeted participants and explained the expectations of the activities:

- Soundwalk is a mindful walk with the intension of listening to the sounds around you.
- Please silence cell phones and refrain from looking at your device
- Please refrain from speaking during the walk to focus on the sounds and to respect others listening
- The walk will circle back to the library and we will regroup in Conference Room C (on the fourth floor). We will take a five-minute break for those to use the bathroom and such, but please continue refraining from speaking – continue listening to the sounds as we transition into the second portion of the event.
- If you cannot stay for the entire event, it would probably be best to slip out during this break between the walk and the discussion.
- I will be leading, not going too fast for those to relax into the walking pace. We will be crossing many streets and there are some construction areas, so just be smart, stick with the group and please refrain from wondering off.

Walk

4:45pm: Discussion

- Pass out paper for participants to write down/list some sounds they remember and where they were located (5min); and then ask them to free flow write about any feelings they had while walking, impressions or things that stood out to them about the sounds they heard or the experience of walking in the Lexington (5min)
- Discussion
    - How are you feeling? What did you think?
    - Draw on map to document the sounds we heard and color code using Bernie Krause's sonic terms:
        - Geophony (BLUE) – sounds from the earth
        - Biophony (GREEN) – sounds from living organisms
        - Anthrophony (RED) – sounds from humans
    - Is it difficult to label these sounds? What were the sonic patterns?
    - How is listening to sounds around you relevant to your life/career?
    - How can we use sound to understand communities we might be trying to engage with? How do we understand the sonic identities of communities?

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2009-2013 Louisiana State University (Baton Rouge, Louisiana)
- Master of Music in Musicology
- Thesis: "Max Neuhaus and the Musical Avant-Garde"

2005-2009 Brevard College (Brevard, North Carolina)
- Bachelor of Art in Music, *Cum Laude*
- Thesis: "Morton Feldman's Music Involving Art: Connections to Jackson Pollock, Philip Guston, and Mark Rothko"

Professional Positions

2018- *Instructor*, University of South Carolina-Upstate (Spartanburg, South Carolina)

2018-21 *Member*, Conference Site Selection Committee, Society for American Music (Pittsburgh, PA)

2017-19 *Co-Chair*, Experimental Music Interest Group, Society for American Music

2015-16 *President*, FOCUS (Graduate Music Research Association) University of Kentucky (Lexington, KY)

2014-16 *Co-Chair*, Student Forum, Society for American Music

2015 *Member*, Graduate Education Steering Committee, College of Fine Arts, University of Kentucky

2014-15 *Vice-President*, FOCUS, University of Kentucky

2013-16 *Graduate Instructor*, School of Music, University of Kentucky

Honors and Awards

American Musicological Society

2017 Rey M. Longyear Student Paper Award, South-Central Chapter

Society for American Music

2015-16 Student Travel Award
2013

University of Kentucky

2017-18 Rey M. Longyear Travel Award

2017-18 College of Fine Arts Travel Award

2016-17 Keith B. MacAdam Scholarhip

2016 Kristen Stauffer Todd Memorial Award for Exceptional Graduate Teaching and Service in Musicology and Ethnomusicology

2016 Friends of Music Travel Award
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2016 Graduate School Travel Award
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Brevard College

2009 Outstanding Music Educator Award

2008 Omicron Delta Kappa

Publications

2018	Book Review, *Beyond Unwanted Sound: Noise, Affect and Aesthetic Moralism* by Marie Thompson, *Sound Studies: An Interdisciplinary Journal*, Vol. 5.
2018	Book Review, *Libby Larsen: Composing an America Life* by Denise Von Glahn, *Journal of the Society for American Music*, Vol. 12, Issue 4.
2017	"Max Neuhaus's Artistic Response to Noise Pollution Policies," *Ecomusicology Review*, Vol. 6.
2017	"Korean Drumming at the Women's March in Lexington, KY," *Trax on the Trail.*
2016	Book Review, *Compositing Ambiguity: The Early Music of Morton Feldman* by Alistair Noble, *Society for American Music Bulletin*, Vol. XLII, No. 3