LOUD SPEAKER: TOWARDS A COMPONENT THEORY OF MEDIA SOUND

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Abstract

Loud Speaker: Towards a Component Theory of Media Sound

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Loud Speaker: Towards a Component Theory of Media Sound develops a preliminary theory of component analysis that uses the role of the loudspeaker in acoustic technologies as a model for thinking about sound in media, music, and art. By identifying the concept of a component as integral to a range of media, this model counters the compartmentalization of elements of media studies, music theory, and art history that are better understood within their working environment, contributing to an irreducible multi-sensory whole. Treating technologies that are shared by multiple media, my argument constructs a critical assessment of media that observes parallels between the use of the loudspeaker as a mass-market content delivery apparatus and the creative deployment of sound by musicians and artists working in a range of media since the middle of the twentieth century.

The study is divided into two parts. The first consists of three thematically linked chapters. Chapter One traces the affordances of the loudspeaker through manifestations in radio, television, music, and sound art; this chapter initiates a vocabulary for analyzing...
component technologies situated within both media devices and aesthetic objects. Case studies include the work of Lewitt, Behrens, and Meatyard.

Chapter Two uses the model of a component to attempt integrated readings of works by artists who use sound and includes analyses of pieces by Tinguely, Schneeman, Hill, and Huyghe. These historically and materially diverse works present sound as a central factor in the legibility of works that actively highlight the multi-modal character of twentieth-century creative production.

Chapter Three unites the loudspeaker and sound towards a rethinking of the discourse of power in the public sphere. By assessing the language used to describe power relationships when sound is treated as distinct from vision, the chapter concludes with an analysis of amplification as a form of transmission for the voice and addresses the politics of amplification in public discourse.

The second part consists of a single chapter discussing the author’s creative output in the context of the material developed in first three chapters. The dissertation composition/installation forms of forgetting is discussed alongside the work that led to its development.

A supplementary file containing audio for forms of forgetting has been provided to accompany this document.
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Introduction

Describing French naturalist Jules Bastien-Lepage’s painting *Jeanne d’Arc* (see fig. 1) a month after its exhibition in the 1880 Paris Salon, the American art critic Lucy H. Hooper wrote,

The rough country girl, who stands beneath an apple-tree in the most prosaic of farmyards, is undoubtedly insane, if one may credit the wild stare of her dilated blue eyes. She is supposed to be listening to the mystic voices, and the figures of the three saints show dimly outlined behind her.¹

After admonishing the “repulsive streak of vulgarity running through every phase and development of his noble and undeniable talent,” she goes on to suggest that the figure of Jeanne d’Arc “looks more like a caricature of the theme than any serious representation of a scene in the life of that historic saint and martyred heroine.”

Hooper’s judgment is representative of the opinion held by Naturalist painters of the time that the effect of the work of art should originate in the world itself. The uproar identified by Hooper is then not about Jeanne d’Arc “listening to the mystic voices” but rather Bastien-Lepage’s attempt to render the content of her listening visible. The tilt of the subject’s head away from the body and the orientation of the gaze askew from the head have been icons of the listening subject since the ‘tuning figures’ of the Renaissance.² The vulgarity is, for Hooper (and other contemporaneous critics), the presence within the

² A popular subject of Renaissance painting, tuning figures are people who, in the context of the narrative of the painting, are tuning an instrument such as a lute. For a detailed discussion of this see François Quiviger, *The Sensory World of Italian Renaissance Art* (London: Reaktion Books, 2010).
painting of ethereal bodies producing the voices that are only heard in the mind of Jeanne d’Arc herself. Sound, figured through the depiction of listening, is integral to the experience of the work; the representational status of sound is complicated by the image while at the same time rendering it legible. Painted forty years after the commercial availability of the camera, three years after Edison’s announcement of the phonograph, and four years after the patents for the telephone, microphone, and the loudspeaker, the appearance of a painting such as this during the 1880s articulates a shift in aesthetic sensibility that is inseparable from the technological forces at work in Europe and America in the third quarter of the nineteenth century. Beginning in this period, as suggested by Jonathan Crary, “the single sense modality of sight” becomes inefficient for the study of a subject increasingly defined in terms of “hearing and touch, and more importantly, of irreducibly mixed modalities.”

It is this notion of the “irreducibly mixed” at work in the senses, in aesthetic objects, and in technological media that is the subject of the chapters that follow. Each chapter bears the common link of an engagement with sound, hearing, and listening not as a defining characteristic, but as a thoroughly integrated component, a component whose presence does not define the work but whose excision would both diminish the effect and clarity of the discussion surrounding it. For convenience, the word sound often stands as a placeholder for a range of much more subtle characteristics. Sound can be understood not only as a physical acoustic phenomenon, but also as the audible (semiotic) presence of the voice, conceptual and physical silence and noise, the subject of both interior and exterior

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hearing, and the object of attentive listening. The reduction to the single descriptor ‘sound,’ has limited the hermeneutic potential of what is a rich and varied matrix of meanings while at the same time suggesting an intrinsic modernism that has only been amplified by medium-specific rhetoric. Throughout the analyses presented here, I have attempted to proceed with a mind attuned to the multi-modal experience of works that employ sound to varied ends from expressive means to physical material, and from spatial signature to linguistic trace.

The present study is divided in two parts. The first part consists of three chapters whose aim is to situate sound as a component in three separate but inter-related areas of cultural activity. The second part applies the methodological vocabulary developed in the first part to the creative output of the author leading up to and including the companion dissertation composition/installation forms of forgetting.

Chapter One presents the use-history of the loudspeaker as a model for thinking about sound as a situated component of the media and aesthetic landscape. Proceeding from a discussion of the effects of the loudspeaker on media at the end of the nineteenth century, a series of affordances point out the contributions of the loudspeaker while at the same time suggesting potential roles the loudspeaker plays in the presentation and analysis of acoustic material. Beginning with the introduction of the loudspeaker as a component in Graham Bell’s invention of the telephone during the third-quarter of the nineteenth century, its manifestations in radio, television, music, and sound installation develop a vocabulary for analyzing component technologies situated both in media devices and aesthetic objects. Case studies include Sol Lewitt’s contribution to the conceptual art
exhibition Art by Telephone (Museum of Contemporary Art, Chicago, 1969), Marc Behren’s *Tokyo Circle* from the Sound Art, Sound as Media exhibition (ICC Tokyo, 2001), and the *Sound Motion* photographs of Ralph Eugene Meatyard.

Chapter Two mobilizes the model of a component provided by the loudspeaker in Chapter One to undertake readings of works by artists across a range of media that balance the role played by sound in practices whose concerns lay outside of sound as a medium of direct expression. Presenting analyses of pieces by Jean Tinguely, Carolee Schneeman, Gary Hill and Pierre Huyghe, this chapter aims to productively situate sound as a component integral to the experience of the work art. In this chapter, a conscious choice has been made to choose artists and works that are outside of the narrative of sound art presented by historians like Douglas Kahn and Alan Licht, and philosopher/theorists Christoph Cox, Seth Kim-Cohen, and Salome Voegelin.4

While these contributions have been seminal in the growing dialog about sound in artistic practice, these initial forays into the writing of the history and theory of artistic uses of sound have centered on the articulation of a sonic material practice akin to video and installation art. Where the focus in the former is the technological disposition of the medium and in the later is the situated nature of the work, sound is often treated as though it is a genre into which these works fit. This chapter aims instead to do foundational work

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to develop a critical awareness of sound within the experience of art works regardless of genre, style, or medium identification.

Chapter Three brings the loudspeaker and sound together to rethink the discourse of power in the public sphere. Considering the role of sound in Bentham’s Panopticon and the use of loudspeakers in public address systems, the comparative absence of a dialog about the role of sound in society is addressed. The principle argument is that it is precisely the transparent operation of the acoustic in society that lends the power to manipulate, surveil, and control.

As the surface fragmentation generated by social media becomes the dominant mode of cultural consumption, it will be crucial for theories of art and music to articulate the sustained critique and continuity at work in society through aesthetic objects. Understanding the operation of the component parts of media technologies and modes of expression, at once separate and whole, assists in the maintenance of both specificity and context in scholarship. Neither an attempt to unify blindly for ease of argument nor to isolate quickly for clarity of focus, the present study seeks only to balance, to assemble and observe the artifacts of an increasingly dynamic field of production.
Chapter 1

Loud Speaking a Silent Ubiquity

The loudspeaker does not want to be seen. Embedded in devices dating to the third quarter of the nineteenth century, the contrivance that renders audible the micro-sonic, the acoustically distanced, and the temporally displaced sounds of humanity and its environment operates not autonomously but as a component in all technology designed to be heard. Implanted in the body of the telephone, television, video, or computer, the loudspeaker gives voice through a process enabling the transduction between electric and acoustic waves. As analog (or an analog) the anthropomorphism of the loudspeaker has granted critical immunity to a technology that has had a profound effect on the way society listens to itself. Attention to the loudspeaker as a crucial component at work within these host media raises issues of reproductive veracity, audio-visual parity, and geographic proximity. What can be said about listening if, while attending to the progress of a century of techno-cultural production, the loudspeaker is held still? What models might the loudspeaker provide for understanding the contribution of sound to media, art, and musical practices broadly conceived?

This chapter explores the loudspeaker as component in (while not extracting it from) auditive technologies and practices from the mid-twentieth century to the present. The fundamental premise is that components operate both with and in technology in much
the same way as any single sense operates in the total sensorium – not autonomous, but unique and contributing. Acknowledging the loudspeaker as a component integral to a range of media technologies counters the temptation to isolate for convenience elements of study that may best be understood within their working environment. A shift in attention to these component technologies - shared by multiple media - begins to open the boundaries between disciplines as interrelated as music and art history, cinema studies and science technology studies, as well as media, cultural and policy studies. Using the loudspeaker to test the limits of a preliminary theory component media, a series of short case studies will be presented highlighting the affordances of the loudspeaker as an exemplar in situ. Then, as a means of expanding the usefulness of the model, the potential for component analysis is abstracted to incorporate sound more generally to balance the hegemony inherent to theorizing a single sensory modality.

The word component, from the latin compono, means to put together, place together, unite, connect, or aggregate.¹ In contemporary usage – particularly when dealing with electronic or computer systems – component has come to suggest the segmented and often autonomous parts of a functioning whole. These technological wholes, however, as is the case with the digital music player contained within cellphones since the beginning of the twenty-first century, are made up of many individual media sharing common circuitry, sensors, interfaces, and output mechanisms. The proposed theory begins to account for the re-orientation required to assess the effects and functions of individual media within the aggregate devices that permeate the contemporary media landscape. As components,

loudspeakers, along with the screen, the knob, the dial, and the switch, articulate this need for cross-disciplinary investigation.

Late capitalism is painted with the brush of constant progress, where technological innovations are valued for being revolutionary; it is, however, precisely the devices that do not change – the devices that are common between the car stereo and the microwave, between the laptop and the television – that are the unsung markers of the use-value of commodities. In his recent study ‘Deep Time of the Media: Toward an Archeology of Seeing and Hearing by Technical Means,’ German Media theorist Siegfried Zielinski reminds us that ‘the history of media is not the product of a predictable and necessary advance from primitive to complex apparatus’ but that ‘media are spaces of action for constructed attempts to connect what is separated.”2 With so much emphasis on the march of progress, attending to the functioning whole while focusing on the contributing parts reveals the effect of what has lasted in the wake of what is undergoing constant change.

Like the strings of a violin that are set into motion by the friction of bow, or the reed of the clarinet that vibrates with the breath of a performer, the loudspeaker – set into motion by fluctuations in electricity – enables the radio, telephone, television, cinema, computers, electric instruments, and public address systems to deliver information to and between the masses. Since the first experiments with acoustic to electro-magnetic transduction (the translation from acoustic energy to electro-magnetic energy) of Johann Reis in 1861, the patent for the moving coil transducer in 1874 by Ernst von Siemen, and the patent for the telephone in 1876 by Alexander Graham Bell, the loudspeaker has

undergone only incremental change for technical improvements to yield greater clarity; the fundamental mechanism of the loudspeaker is still in use in the early twenty-first century. The audible history of media in the 20th century orbits around the fixed point of the loudspeaker and since its creation for use in the telephone, the loudspeaker, in almost the same technological form, has been present in all audio technologies that produce sound electrically or digitally, yet the critical potential of its contribution to these technologies is subsumed under discussion of the sound it enables.

Figure 2. Bell, AG., *Improvement in Telegraphy*, 1876.

Alexander Graham Bell’s 1876 patent for the technology that would later be known as the telephone makes a number of elucidating claims about the invention’s affordances. Arriving at the American Patent Office only a few hours before the design by his rival Elisha Gray, Graham Bell’s patent implied incremental change to then extant telegraphic
communications. Bell’s ‘Improvement in Telegraphy’ supplanted morse-code, presenting a system that could send, receive, and present the sound of the voice itself, making Bell’s ‘improvement’ the first technology for direct long-distance, two-way, speech communication. The patent presents:

“The method of, and apparatus for, transmitting vocal or other sounds telegraphically as herein described, by causing electrical undulations, similar in form to the vibration of the air accompanying the said vocal or other sound, substantially as set forth.”

The understated claim made by Graham Bell marks at once the introduction of both the microphone and the loudspeaker to communication media. Though conventionally understood as distinct technologies, they share a common physiology; both enable transduction between mechanical energy in the form of air pressure fluctuations and modulations in electrical current flow (see fig. 2 above). In each device, a diaphragm senses variations in air pressure that moves (or is moved by) a voice-coil, a tightly spun cylinder of copper wire surrounding a magnet, which in turn responds to or generates undulations in electricity.

The development of this technology tacitly mirrors the codependence of speech and hearing, while privileging audible speech at the expense of the visual cues and bodily gestures of face-to-face communication. It is important to note here that the proposed technology was conceived not as a method for transduction, but rather as part of the mechanism of transmission. Transmission implies mere delivery, identifying a desire for and ability to create a technology that could conquer distance, providing added value to an

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3 Bell, Alexander Graham. Improvements in Telegraphy 1876, US Patent 174465, filed February 14, 1876, issued March 7, 1876.
already standardized method of communication. The loudspeaker as transducer, however, brings with it the loss of signal (information) inherent to translation, shifting attention to the ease of long distance communication, and avoiding the uncanny dislocation of the voice from its body. The loudspeaker presents the voice as autonomous signal, heightening the aural component of the speech act by separating it from the multimodal cues commonly associated with conversation. That the effects of the loudspeaker - the manner in which it presents sound - is so easily folded in to other media, that the information delivered by it is so readily conflated with its source, and that its role in producing sound is assumed under the study of sound itself does not articulate a lack but reaffirms the need for awareness.

The ubiquitous presence of the loudspeaker in nearly all audio communicative and reproductive technologies is outweighed only by its comparative absence in media critical and art historical literature. The scarcity of critical pressure on the social and aesthetic implications of the loudspeaker in acoustic devices has rendered them (quite falsely) neutral objects. They begin to disappear as mere parts of an acoustical or technological whole, rather than a mediating factor contributing to a marked, perhaps coded, acoustic experience.

Perhaps the greatest apologist for listening and sound in the media studies, Marshall McLuhan, best stated the importance of the acoustic in the study of media artifacts. A keen sensitivity to sound is present throughout McLuhan’s writings, exemplified by his early acknowledgement of the effect of printing on oral communication in the *Guttenberg*
McLuhan would then treat the sonic as media ‘content’ in *Understanding Media: The Extensions of Man*, where he developed a vocabulary and method for the identification and analysis of consumable mass-media. Later, in the chapter “Visual space vs Acoustic space” in *Global Village* co-authored with Bruce Powers he recognized a return to aurality ushered in by the acoustic space created by the soundful media of radio, television, and film. While McLuhan never addressed the loudspeaker specifically, his formulations provide an important basis for understanding sound as a component of media.

McLuhan’s reflections on sound fall into two distinct categories, the first of which articulates the differences between the sensory affordances of vision and those of hearing. As a means to describe the shift in the role of the listening brought about by media and their content, McLuhan insists “the ear is more embracing and inclusive than that of the eye can ever be.” For McLuhan the senses can be understood as ratios, where “sound, for example, is intensified, touch and taste and sight are affected at once.” This is is evinced by the effect of adding sound to film in the 1920s, which in McLuhan’s thinking “diminish[es] the role of mime, tactility, and kinesthesis.”

In addition to the shift in the ratios of the senses instigated by media, McLuhan proposes a model for understanding media that identifies the developmental incorporation of one media as the content of each successive new media. McLuhan posits, for example, that speech is the content of writing and print, asserting “the effect of the medium is made strong and intense just because it is given another medium as ‘content.’” To this end, radio and theater become the content of film, radio and film become the content of television,

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and so on as one medium is folded into another in the appearance of new forms of communication, distribution, and expression. Though McLuhan limits his discussion of media to consumer devices and forms, this model can be productively extended to include the loudspeaker: the content of the radio is the loudspeaker and transmission. Thus, the loudspeaker becomes an extension of the voice while transmission represents the extension of the reach of hearing.

Following on the work of McLuhan, Vilém Flusser traces the role of television screens, posters, and the pages of illustrated magazines to carry the message of mass-media in an essay entitled “Line and Surface.” In this piece, Flusser proposes the term ‘surfaces-thinking’ to describe the trans-medial operation of the space of presentation in the consumption and distribution of content. Surface thinking represents the development of a new cognitive faculty for reading images in media. Opposing his idea of ‘surface-thinking’ to ‘line-thinking’ – the effect of reading alphanumeric text – Flusser suggests that an image-saturated culture increasingly conceptualizes the world and history as a succession of images. Just as print images deliver content for print and broadcast media, it can be argued that the loudspeaker displays the content of commercials, soundtracks, audio icons, and the voice through each industry and media. This shift is important for the theorization of the loudspeaker as a component, as the loudspeaker functions as the presentation surface for all auditive technologies.

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6 Flusser acknowledges the role of sound in film and television, but rather than embracing these sound media as extensions of the concept of surfaces directly, he identifies stereophonic sound in cinema as an immersive third dimension. This formulation overlooks the fact that stereophonic sound is also an illusion on the order of visual perspective in images. Shifting attention from stereophonic sound material to the loudspeaker
Positioning the loudspeaker within three separate contexts that articulate its affordances, the sections that follow attempt a preliminary component analysis. Beginning with the loudspeaker as it enables the reception and amplification of sound in the 1969 exhibition *Art by Telephone*, the loudspeaker is then figured as a presentation space where it functions as both support and medium in the work of Marc Behrens (1970). Lastly, I will expand the model of component analysis beyond the loudspeaker to explore the way in which the sound operates as a component in the cognitive experience of the *motion-sound* photographs of Ralph Eugene Meatyard (1925-1972).

**Reception/Amplification**

“We constantly inhabit a universe of voices, we are continuously bombarded by voices, we have to make our daily way trough a jungle of voices, and we have to use all kinds of machetes and compasses so as not to get lost. There are the voices of other people, the voices of music, the voices of media, our own voice intermingles with the lot. All those voices are shouting, whispering, crying, caressing, threatening, imploring, seducing, commanding, pleading, praying, hypnotizing, confessing, terrorizing, declaring...”
Mladen Dolar, *A Voice and Nothing More*  

“Draw a straight line and follow it.”
La Monte Young, *Composition 1960 #10*

In 1969, the artist Sol Lewitt (1928-2007) picked up the receiver and dialed the number for...
the Museum of Contemporary Art in Chicago, speaking with the museum staff, he instructed:

“Using a hard pencil draw a sixty by sixty inch square on a wall. Draw the square into a grid of one-inch squares. Draw horizontal lines in some of the one inch squares; draw vertical lines in some of the one inch squares; draw diagonal lines from upper left to lower right in some of the one inch squares; draw diagonal lines from lower left to upper right in some of the one inch squares. The lines may be superimposed and some of the one-inch squares may be left blank.”

Lewitt delivered his work, Variation on Wall Drawing #26, to the museum telephonically for the large-scale group exhibition titled Art by Telephone. Exploiting the technological affordances of the telephone, the exhibition took up the theme of conceptual art as it was forming during the early 1960s across the United States and later in the decade in both Europe and Asia. Art by Telephone presented work by thirty-seven artists, whose instructions were received by the curator over the telephone and recorded; the preparators were then to construct the works in the space of the museum, following the directions explicitly. Though ultimately the exhibition was never physically mounted due to technical problems, the museum produced a gate-fold vinyl record accompanied by printed statements by the artists and an essay by the curator Jan van der Marck in a small edition that presented the unedited telephone calls from each of the artists to the museum.

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The record could then be used by anyone in possession of a turntable and a loudspeaker to execute the works on their own.

The distribution of the catalog as a long-playing record was a natural extension of the agenda of conceptual practices at the time. Referring to the role of the exhibition catalogue in the ‘communication (and dissemination) of conceptual art,’ curator Seth Sieglaub suggests that, ‘when art concerns itself with things not germane to physical presence, its intrinsic communication value is not altered by its presentation in [printed] media. The catalogue can now act as the primary information for the exhibition.’

While the telephone enables two-way communication, and radio broadcast distribution, the record offers repeatability. The work presented by Sol Lewitt loses nothing in the translation from transcription of a recorded phone call to the distributed record as catalog, in both cases the loudspeaker enables the (re)presentation of his voice allowing the transmission of his work.

In the 1960s, Conceptual art developed concurrent with and antecedent to strains of minimalism in painting, sculpture, and music. Not merely an art of ideas, conceptual art initiated what art historian Lucy Lippard identified as the ‘dematerialization of the art object.’

Representing the apotheosis of the Duchampian claim that what might be considered art is the sole provenance of the artist, conceptual art at once questioned the status of the work as commodity and the role of the artist as creator. Artists like Sol Lewitt insisted, “the idea itself, even if not made visual, is as much a work of art as any finished work.”

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12 Henry Flynt is credited with coinng the term concept art and with laying out its principles in an eponymous article in 1961 first published in LaMonte Young, An Anthology, 1963.
product.” The concept becomes the work in either the development stage - where it is complete in and of itself and the execution of it secondary - or, where the work is meant to evoke the concept by its presence in the space of presentation.

It is fitting then, that sound appears as a curatorial theme for the first time in the middle of 1960s. Not only does sound exemplify Lippard’s ‘dematerialization’ as it is immaterial by definition, but the strategies employed by conceptual artists at this time mirrors those explored by contemporaneous musical practices. During this time, composers began to self-criticality assess the graphic representation practice of scoring, acknowledging the power relationships and the social implications at the intersection of composer/performer/audience. In parallel to these concerns in music, artists directly addressed time and space as material conditions of making while considering issues of authorship that interrogated the dynamic between the viewer and the object of art.

Art by Telephone takes up these merging strains of inquiry by exploiting the potential for the telephone to act as a conceptual space through which artists might filter their ideas while challenging notions of authorship commonly associated with instruction and score practices. The telephone in this exhibition highlights the loudspeaker as the carrier of a signal to be decoded, emphasizing its ability to speak on behalf of a voice detached both by distance and - in the case of the recorded LP - time. Realizing the utopian desire for bi-directional radio expressed by Bertolt Brecht in his 1932 essay “The Radio as

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15 The development of the instruction score can be found in both art and music, this practice reaches its zenith in the trans-disciplinary practice of the Fluxus group in particular the work of Alison Knowles and George Brecht.
an Apparatus of Communication,” the two-way communication enabled by the telephone destabilizes both author and subject by making art a direct dialog.\textsuperscript{16} Where Brecht would prescribe that radio should “put its instruction into an artistic form” to “link up with the efforts of modern artists to give art an instructive character,” the modernist impulse to instruct is precisely what is under pressure by the use of the telephone in this exhibition. The mental space opened up by works like Variation on Wall Drawing #26 acknowledges agency on behalf of an audience that produces the piece, allowing for a freedom of interpretation anathema to the modernist program.\textsuperscript{17} While sound transmitted and received by telephone works for the Brechtian utopian agenda as well, the merge between conceptual practice and the technological affordances of the loudspeaker, microphone, and transmission erodes the focus on the producer-consumer and highlights the possibility of dialog both literal and conceptual both within and outside the work of art.\textsuperscript{18}

\textsuperscript{17} ibid.
\textsuperscript{18} The Bauhaus artist Laszlo Moholy-Nagy had produced a series of ‘telephone painting’s where he dictate what the preparator was to draw exactly, down to the length and color of the lines.
Presentation/Mediation

“The home of the idea of a medium is in the visual arts, and it used to be informative to know that a given medium is oil or gouache or tempera or dry point or marble... because each of these media had characteristic possibilities, and implied range of handling and result. The idea of medium is not simply that of a physical material, but of a material-in-certain-characteristic applications”

Stanley Cavell, “A Matter of Meaning It” from Must We Mean What We Say? A Book of Essays19

“. . . It is clear that culture itself is one of those things whose fundamental materiality is now for us not merely evident but inescapable... We postcontemporary people have a word for that discovery . . . the word medium, and in particular its plural media, a word which now conjoins three relatively distinct signals: that of an artistic mode or specific form of aesthetic production; that of a specific technology, generally organized around a central apparatus or machine; and that finally, of a social institution.

Frederic Jameson, Postmodernism, or, The Cultural Logic of Late Capitalism20

Embedded in audio technologies, the loudspeaker is almost always hidden from view. Imitating the screen that hid Pythagoras from his pupils,21 the tweed tolex cloth of a guitar amplifier, the plastic earpiece of the telephone, the screen of the cinema, and the housing of the headphone each hide the loudspeaker from view, concealing the source of the sound from the listener.22 The loudspeaker enables a performance of a source on the order of primary experience; the ontological status of loudspeaker-mediated sound is a

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20 Frederic Jameson, 1991, Postmodernism, or, The Cultural Logic of Late Capitalism
21 Known as ‘acousmatics,’ the pupils of Pythagoras only heard their master from behind a screen, purportedly to ensure that they follow the content of his lecture unsullied by his visage. This term is mobilized by the French composer/theorist Pierre Schaeffer in his 1967 Traite des Objets Sonores to indicate a sound presented in the absence of its source.
(re)production of sound itself. The conflation of sound and source produced by the loudspeaker obscures the means of production in an effort to shorten the perceptual gap between the viewer/subject/audience and the information delivered. The consumer engages the legible content produced by the loudspeaker in the service of a range of media and applications. As an embedded component masquerading as the source, the loudspeaker presents sound - not technology - as the material support.

Technologies of artistic support have been the subject of sustained contentious debate throughout art criticism in the twentieth century. The status of the canvas in painting during artistic modernism problematizes its position as the site or location on which paint (or color) is placed and which 'supports' the paint, in turn representing (in varying degrees) the subject of the work. The modernist position put forth by art critic Clement Greenberg insists that painting produces the mechanism by which it interrogates itself by means of its very materials.23 In such thinking, the support becomes a fact of painting, on equal footing with color but also with the content presented by the paint. The philosopher Stanley Cavell suggests that the use of color in certain modernist paintings “is not merely that it no longer serves as the color of something, nor that it is disembodied; but that the canvas we know to underlie it is no longer its support - the color is simply there, as the canvas is. How it got there is only technically (one could say it is no longer humanly) interesting; it is no longer handled.”24

23 Clement Greenberg, originally presented as a lecture entitled Modernist Painting in 1960, later reprinted in R. Kostelantz, Esthetics Contemporary, 1978
In the year 2000, artist and musician Minoru Sato curated Sound Art - Sound as Media at the Intercommunication Center in Tokyo, Japan. Nine artists produced pieces that complicate the status of sound as both ‘media’ in the McLuhanian sense and ‘medium’ in the commonly received (though by no means clear) sense used to discuss the material practices of art. Sound Art - Sound as Media recognized parallel strategies for the display of sound among artists working within both abstract and representational modes. The works in this exhibition present treatments that complicate the relationship between the listener and the sound-source, exploring the potential of the loudspeaker functioning alternately as support, frame, object, and space for the work of art.

The contribution of German artist Marc Behrens’ work Tokyo Circle to Sound Art - Sound as Media, challenges this matrix of relationships between observer and support. The work presents the listener with a circular platform bounded by six loudspeakers at knee-height, equally spaced around the perimeter of the circle. Each loudspeaker is paired with sensors that detect the standing position of the listener on the platform; motion tracking determines the real-time assemblage of an auditory landscape comprised of unaltered field recordings. The field recordings are then mixed and distributed across the loudspeakers creating an active relationship between the listener and their location as spectator/audience, and by extension their own place within the auditory landscape.

25 Artists included Max Eastley/David Toop, Carl Michael von Hausswolf, Peter Hagdahl, Christoph Charles, Carsten Nicolai, Ryoji Ikeda, WrK Collective, Jane Dowe, Brandon Labelle.
The loudspeaker in *Tokyo Circle* assumes a similar role to the painterly sense of the canvas as presentation space described above. As the sole location from which sound emanates from the work, the loudspeaker presents and supports the material employed by the artist. Theorizing the loudspeaker as artistic support here is not without complications: while the canvas presents static material, the loudspeaker is always already presenting dynamic, temporally unfolding content changing over time and with the listeners physical proximity. Consisting of un-altered field recordings, the material condition of *Tokyo Circle* fabricates a soundscape for the listener on the order of strategies used in landscape painting. Representational landscape painting mobilizes perspective geometry, creating the illusion of depth a particular a place of observation, and in so doing trains the viewer to see the landscape. Behrens' work, however, incorporates the variability of the listening position as an active part of the dispositif of the installation,
creating a dynamic space in which the piece might be read. By making a variable point-of-listening, Behrens counters the fixed viewing position of traditional perspective and by extension the linearity of vision, to create a free listening position that emphasizes the polarity of audition.

The sound presented by the loudspeaker in *Tokyo Circle* when considered as a support is not - as suggested by Cavell - simply there. Its presence, constructs the illusion of spatial depth fabricated by geometry and driven by technology. When a listener assumes the single position needed for the stereophonic depth of space to take place, the interaction between the auditory physiology inherent in human binaural hearing and the construction of sound captured via the microphone creates a space that is more than the recorded source. While linear perspective and the stereo effect are both rooted in a desire for heightened realism, Behrens’ work gives the listener the mobility to explore the auditory landscape freely, and with this freedom realism becomes a traversable geography that returns agency to the viewer/listener.

**Allusion/Suggestion**

“Seeing is not an activity divorced from the rest of consciousness; any account of visual art which is adequate to the facts of our actual experience must allow for the imbrication of the visual with other aspects of thought.”

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26 The term *dispositif* takes on a number of meanings through the history of critical theory, for this purpose I am inferring Baudry’s treatment of the dispositif in the cinema as the technological fact of the space of presentation and its role in the reception of the work, the term implies that the technology carries the dominant ideology of the culture in which it is produced. See Jean-Louis Baudry and Alan Williams, “Ideological Effects of the Basic Cinematographic Apparatus,” *Film Quarterly* 28, no. 2 (December 1, 1974): 39-47.
Victor Burgin, “Photography, Fantasy, Function” in *Thinking Photography*\(^{27}\)

“Unlike other systems of representation, the camera does more than just see the world; it is also touched by it.”

Geoffery Batchen, Vernacular Photography in *Each Wild Idea*\(^{28}\)

The loudspeaker operates in in media to present sound in parallel to other content; sound itself works within the objects of art and media in relation to other sensory modalities. At it’s most productive, the model developed to understand the component function of the loudspeaker is scalable to use for other elements regardless of their technological basis. In painting and photography, the image can depict the act of listening, the making of sound, or the production of music, alternately serving as representation and evocation. These iconographic formations of the acoustic do not suggest listening on the part of the viewer, but rather present listening as the subject of the image. The *motion-sound* (1972) photographs of the iconoclastic American photographer Ralph Eugene Meatyard, on the other hand, evoke the sense of hearing where sound functions for the viewer in parallel to the visual, producing both meaning and experience. Meatyard presents a new form of acoustic viewing, producing internal listening at the nexus of conscious experience, vision, and audition. The *motion-sound* series relies on the experience of the auditory environment to produce a photograph that aims not to depict sound, but listening itself.

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An optometrist by day, Ralph Eugene Meatyard, created a body of expressive, experimental photographs counter to the realism of his contemporaries Ansel Adams, Imogen Cunningham, Edward Weston, and Minor White. Much of Meatyard's practice is rooted in the study of Zen Buddhism. As he once told his friend and curator Van Deren Coke, “the uncanny or surreal combined with the perfect background, the formal, the No-Focus and the Zen awareness can produce a photograph of simplicity, power, interest, and the intuitive realization on the part of the seer that he is seeing more than he realizes.”

His work can be grouped into a number of distinct photographic series, each working on a singular subject or technique. The two earliest collections, No Focus and Zen Twigs (1960), explore indeterminacy, authorship, and photographic vision through technical abstraction.

During his middle period, he developed a radical form of portraiture, exemplified by *The Family Album of Lucybelle Crater* (1974). These works portrayed his wife, family, and friends in grotesque masks to examine the self within the traditional photographic form of the family album. In the last decade of his life, Meatyard produced a series of photographs entitled *motion-sound* that returned to issues of the mind, consciousness, and the self, exploring human experience through the blurring of sight and sound in both image and concept.

Considered a thematic parallel to his earlier *no-focus* and *zen twig* pieces, the *motion-sound* photographs examine photographic vision and the self. But where the earlier works address these issues in the thematic subject of the images, the *motion-sound* photographs embed these concerns in the physical conditions required to make the photograph. Both the *no focus* and *zen twig* series vary depth of field by indeterminately imposing alterations of focal length; the resulting images question the nature of vision, and encourage the viewer to question the veracity of their senses. All of these works use the photographic apparatus to present a mirror of the self through reduced optical clarity, complicating a medium where representation is the articulation of reality at its most objective.\(^{30}\) Where his previous works focus the viewer on their own vision through the image, the *motion-sound* photographs become about photography as an act in itself.

The *motion-sound* photographs present “multiple exposures of a motif on a single piece,” “they are intended to evoke meditation and a mood of withdrawal... suspending in

semidarkness strange and rhythmic shapes that have a sonority more felt than seen."  

Rather than interrogate the medium directly, Meatyard uses the act of picture making to question the documentary role of photography. During the act of photographic capture, Meatyard creates the condition of possibility for nature to alter the resultant photograph, resisting the urge to freeze moments that were for him – in keeping with the teachings of Zen Buddhism – impermanent. Meatyard inserts picture making into the scene of the subject, letting process bend to forces external to the photographer – wind, vibration, movement – that refuse to be reduced to representation.

Meatyard’s engagement with extra-camera perception is evinced by the title ‘motion-sound.’ In photography, the immersive quality of sound and the tactile experience of motion are the most absent components of the sensorium in a medium that silently freezes time. In Untitled 1971 (See fig. 4) from the series, Meatyard uses the motion of the camera to evoke within the vocabulary of the image a trace of actions that create sound. The blurred depiction of a field of wheat blowing is more than an image memory; it carries with it the sonic character unique to that environment. These pieces are not about sound or about motion, but through a process that allows imperfection to mark the image, sound and motion strike the apparatus while the photograph is being taken. In these works, light writes on the film through the lens, but not without the effect of sound or motion on the body of the camera. For Meatyard, the photograph is no longer a representation of a past reality - a silent questioning of the nature of vision - but an analogy for the whole body,

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immersed in the world and subject to it. The result is an experience of the photograph as a reality in itself, a photograph whose script is legible by vision in the present.

Unlike films, drawings, and photographs, that offer a translation of music or sound into the vocabulary of images, Meatyard presents photography as an act of transduction, the image functioning as a surrogate for place, thing, person, process, or experience rather than a presentation or performance of literal mimesis. Meatyard asks the viewer to draw on their sense memory of listening to depicting sound not in the manner of its operation, but rather image as it might operate in the manner of the acoustic. The camera registers the vibration of the body of the photographer, the film captures light modulated by motion, and the double exposure evokes an audio-vision resulting in a sensory immersion fundamentally anathema to photography.

In each of its guises, the loudspeaker functions alternately as a presentation space, frame, substitute, surrogate, and prosthesis. This polyvalent potential makes it useful as a critical device because, through it, the manner in which sound functions within works of art, systems of power, and technologies of distribution can be critiqued, considered, and assessed. The cultural productions of the twentieth and twenty-first century, considered from the point-of-audition of the loudspeaker, productively engage many of the factors that limit the clarity of arguments regarding sound as artistic medium and sound as part of audio-visual media.
Whether receiving a phone call or radio broadcast; presenting a soundscape or abstract electronics; amplifying a command or distancing a source, the position of the loudspeaker in an increasingly varied media landscape is unquestionable. Understanding its operation as a component - and by extension sound-as-component - reveals a technology whose capacity for power is derived from a productively multivalent relationship to its source. By tacitly facilitating aspects of auditory personas that are employed to a greater or lesser degree in everyday life, the loudspeaker extends audible reach while providing a unique, almost factual distance.

The chapters that follow take up the themes and concerns of the preceding material by performing close readings of specific works and individual artists across multiple exhibitions and events spanning the last five decades. Starting from a model that considers the idea of the loudspeaker in tandem with specific curatorial approaches, I consider specific works in the context of exhibition practice in general and artists in particular. The vocabulary developed in this introduction will be expanded and augmented, to provide a critical toolset which can be adapted to the discussion of sound in media studies, as a medium within art practices, or in works of music that investigate concerns opposed to or parallel with those in art.

The attributes that are ascribed to the various soundful media in equal part to the characteristics associated with the speaking voice need to be re-examined with attention to the through-line provided by the loudspeaker. For the better part of a century artists and musicians have recognized the benefits afforded their aesthetic and critical agendas by the
presence of the loudspeaker. Though it may amplify ideology, the loudspeaker also has the power to give voice to ideas and concerns too quiet to be heard above the din of the noise created by using them.
Chapter 2

The (Im)Material Presence of Sound in the Arts

From the silence encouraged by the museum to the environmental immersion of earthworks and other site-specific interventions, sound - or its absence - often marks both the means of production and the condition of reception of the work of art. More than a mere thematic concern, sound occupies a component position in the experience and production of works from painting and drawing to installation and web-based work. Regardless of medium or intent, the work need not be about sound directly but might make or engage sound as part of a multimodal whole; more often, works produce sound as an unconsidered consequence of the use of materials. Whether highlighting the coded acoustics of the place of reception, the figuring of listening in representational practices, or the evocation of the acoustic-imaginary in conceptual art and music, sound can be worked as material, developed as medium, and can also function as support. Addressing the multimodal features of art opens up a rich body of work to analysis, further expanding the discursive field surrounding the artistic deployment of sound.

The myriad complexities introduced to criticism by attending to the role of sound in art has led to generalizations, formalizations, and philosophical declarations that muffle the historical placement, artistic intent, or physical experience of the works themselves. Critics and theorists who champion sound as a defined artistic practice have searched for precedents in an effort to legitimate the emergence of what is instead a fascinating
constellation of diverse practices. Claiming the roots of a unified discourse of sound in the work of the historical avant-gardes (futurism, Dada, surrealism), the iconoclastic praxis of the composer John Cage, and/or (mis)readings of the philosophy and techniques of *musique concrète*, reduces an open genealogy to a positivist parentage. In searching for an originary moment for the emergence of a ‘sound art’ as such, theorists stopped listening to the sound that art in general has been making for decades. Likewise, the indexing of works into categories such as *sound-art, sonic art, lydkunst, arte sonoro*, and *klangkunst*, while productively raising awareness and aiding research, has at the same time ghettoized practitioners and exposed a critical lacuna in the methodological tools available to the history and theory of art. Attending to the component function of sound in the works will help avoid a counter-productive medium-specific myopia, while at the same time developing an inclusive vocabulary for reading each piece as a whole.¹

In the examples that follow, I will begin to develop such a vocabulary by tracing the component function of sound through the sculptures and assemblages of the Swiss artist Jean Tinguely (1925-1991); the performance and installation works of the American artist Carolee Schneemann (1939- ); and video works by Gary Hill (1951-) and Pierre Huyghe (1962-) from the 1998 *Voices* exhibition at the Witte de With Museum in Rotterdam. The work of Tinguely and Schneemann, paired with works exemplifying the curatorial strategy of the *Voices* exhibition will serve as case studies for clarifying the function of sound in works of art, as each example represents a well-defined approach where sound is present

and active but not the sole artistic concern. Applying pressure to the way that sound is employed in each of these cases, I begin to develop a productive position for sound in the discourse of contemporary art history from the tumult of medium-specific discourse.

Jean Tinguely

Swiss-born sculptor Jean Tinguely produced a prolific body of work that spins, rattles, shakes, and implodes. His motors, wheels, junk store pieces, and landfill bits became an inspiration to artists such as Robert Rauschenberg and Chris Burden; his self-destructing work *Homage to New York* (1960), which disassembled itself in the courtyard of the Museum of Modern Art, was among the most progressive works of its time and remains an iconic work in the history of the exhibition of art. Looking beyond his pioneering contributions to kinetic art, it is possible to observe through Tinguely’s work a life-long interest in sound, technology, chaos, and indeterminism. Listening to these works reveal an engagement with the rapid development and acceptance of technology in the society in which he was working as well as with the destructive side of human nature assessed in the decades following the Second World War. By focusing on sound as a component in the complex of concerns in Tinguely’s output shows an earnest questioning of the relationship between the spectator and the work of art that reaches well beyond mere kineticism.

Tinguely’s position in the conventional narrative of sound in art practice has focused on two sound-specific works from the late fifties: *Relief Métà-Méchanique Sonore*

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2 After assisting Tinguely in the construction of *Homage to New York*, Rauschenberg began incorporating common rubbish items in his sculptures.
(1955) and *Mes Etoiles – Concert pour Sept Peintres* (1958). While their titles may explicitly evoke sound, these works are only part of a series where sound works as a component within a broader base of material and aesthetic concerns. Tinguely’s fascination with sound began in the mid-1930s, emerged artistically with the start of his mature practice in the fifties, and would remain a fascination throughout his career. While looking – as well as listening – to this considerable output, it is clear that sound, even when supplementary, is a deeply important component of the complete sensory experience of his oeuvre.

Acoustic themes can be observed throughout Tinguely’s substantial output, from the sound of explosions in *Homage to New York* (1960) and *The End of the World* (1962), the sound of water (and the absence of music) in *The Stravinsky Fountain* (1982-83 in collaboration with Niki de Saint-Phalle), as well as sounds that directly interrogate music in *Meta-Harmonie II* (1979). While many of the kinetic works make sound as they move, many explore the ‘playing’ as a concept; where *The Stravinsky Fountain* moves evoking Stravinsky’s music, *Meta-Harmonie II* employs the machination of the device to play physical instruments. The height of his engagement with sound, however, took place during the 1960s, when he began to disassemble technology in two related series of works called *radio sculptures* and *radio drawings*.

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3 In his 2007 volume ‘In the Blink of an Ear: Towards a Non-cochlear Sonic Art,’ Sound theorist Seth Kim-Cohen dismisses Tinguely’s contribution altogether, saying that the works mentioned above are ‘machines for making music’ and as such, not art. If one takes this view to its logical conclusion a host of works taking up music as subject, theme, or material are excised from art history, a position that can only weaken art-theoretical discourse.

Both the *radio sculptures* and *radio drawings* were deconstructions of transistor radios that employed the wires, knobs, speakers, and antennae as a sculptural material. These parts were then set into motion by hidden motors and gears that could adjust the volume and tuning of the radio. In 1962, he produced ten free-standing radio sculptures and fourteen wall-mounted radio drawings. The sculptures are mounted on the floor or a pedestal, while the drawings are mounted vertically to a wall. Throughout the early sixties, these works were exhibited widely through Europe, New York, and Japan.5

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5 The Minami Gallery in Tokyo produced a 7” vinyl record that documented the works. The exhibition was attended by the Japanese artists Takehisa Kosugi (1938- ), Toshi Ichiyanagi (1933- ), and Yasunao Tone (1935- ), all of whom would later take up sound as a significant theme in their work.
Figure 5. Jean Tinguely, *WYNR Radio No. 9*, 1962.
While the primary developmental period for radio technology took place during World War I, the portable radio receiver was developed for use during World War II, and, like many products created during wartime, the portable receiver was made available for sale in the United States and Western Europe in the years following the war. For artists working between the wars and art historians like Bertolt Brecht and Rudolf Arnheim, when taken out of the hands of the military, the radio offered the utopian promise of expression. By the end of the Second World War, however, that promise proved hollow and the portable radio became a tool for distracting the masses. Where Brecht and Arnheim would advocate the use of the radio to deliver content sympathetic to everyday citizens, their artist contemporaries in the early 50s and 60s began interrogating the technology itself by

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using the transmitted programming as an objet trouvé ("found object") to be navigated on the order of the city.⁸

As exemplars of this exploration, the radio sculptures and radio drawings made by Jean Tinguely in the early sixties deconstructed and explored both the technological support and the programming received by the radio. Prior to the 1960s, Tinguely's work expressed a modular, dynamic, formal abstraction setting metal scraps into motion via motors and gears. With the development of the radio works, two new elements were introduced: the use of aleatoric techniques to explore motion through collage and the development of an anthropomorphic formal vocabulary. In both the drawings and sculptural works, the internal mechanism of the radio is extracted from its housing and the electrical and mechanical parts are dismantled and rearranged while still allowing the device to receive a signal. Unveiled from the curtain of its case, the power and ghostly presence once held by the acousmatic voices, music, and static emanating from the loudspeaker are laid bare, subject to the objective distancing enabled by exposing the source.⁹

In the silent pages of the catalog, these works are simply assemblages. By listening, Tinguely's radio sculptures can be heard as a comment on the social position of the radio as an apparatus of ideology; their dismemberment reveals the operating mechanism of the radio in order to expose the technologically mediated sound source. Standing pedestal

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⁸ The radio was used frequently in this way by Fluxus affiliated artists, most notably the German artist Wolf Vostell (1932-1998). For an interview regarding Vostell’s engagement with sound since the 1950s see Jean-Yves Bosseur and Luca Beatrice, Sound And The Visual Arts, illustrated edition. (Paris: Dis Voir, 1993), p 97.
⁹ The idea of acousmatic listening (listening without being able to see the sound) is treated most fully in Michel Chion, Claudia Gorbman, and Walter Murch, Audio-Vision (New York: Columbia University Press, 1994).
sculptures and wall-mounted reliefs are not new to his practice, and were these works silent, the change in formal disposition between the pre- and post-1960 works would be difficult to observe. However, the central placement of the electronics in the construction with the loudspeaker mounted at the top creates an anthropomorphism that is completely foreign to his oeuvre up to this point. With motors turning the radio-tuning knob, the loudspeaker appears to speak while the vacuum tubes in the body of the work glow with life. Just as Homage to New York and A Study for the End of the World followed the discarded consumer artifacts of society through form and back to trash, the radio works trace the technology of transmission through commodity and back to its origin in human form. In these works, by automating the turning of the knob, Tinguely effectively highlights the destabilizing power of the user as a performer of the radio.

The use of motors to work the tuning and volume controls in both the radio sculptures and drawings represents a substantial shift in the way sound is used in Tinguely's practice. In previous works, sound was generated by the machination of gears and motors that activated noise-making elements hidden from view. In both the radio sculptures and radio drawings, however, sound is produced by the received transmission of local radio programming from the station nearest the venue where the works were

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10 Homage a New York, was built from material excavated from a landfill in New Jersey. Tinguely intended the work to completely destroy itself at the opening of his exhibition at the Museum of Modern Art. A Study for the End of the World was a public performance where Tinguely constructed monolythic sculptures from materials gathered from a junkyard south of Las Vegas, Nevada. An audience was brought out to the Jean Dry Lake Playa; the sculptures were exploded and returned to the junkyard.
exhibited. The aleatoric process introduced by the automated knob-turning, while enabling the speech-like anthropomorphism, also destabilized the ability of the radio to deliver a clear signal, disrupting the ideology of the programming. Static, music, and news are equally likely to emanate from the loudspeaker; in these constructions, no one type of content is more or less prevalent than (pure) noise. The radio that abetted the Second World War is subject to a form of taxidermy, now observed at a distance, extracted from its environment, and robbed of its power.

For Tinguely, sound functions as the byproduct of moving parts, a sonification of indeterminancy worked out through spinning wheels, and a noise that pours forth from unseen devices buried in the mechanics of gears. Questioning the intention of sound in these works is both imperative and compelling. Tinguely's work is at once an art of destruction and child-like simplicity, a critique and a celebration of technology, an exploration of the detritus of our consumption.

Carolee Schneemann

A substantial acoustic thread runs through the work of visual and performance artist Carolee Schneemann (1939- ). Better known for her later video and performance work, Schneemann’s varied and complex oeuvre begins with a painting practice in the late 1950s that is rooted in her own interpretation and critique of Abstract Expressionism. In the early 1960s, Schneemann began her performance practice as a founding member of the

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1 There is a resonance between this practice and that used by the American artist and composer John Cage (1912-1991) in Imaginary Landscape # 4 composed for 12 radios. Cage and Tinguely performed together in Paris in 1961 with David Tudor, Robert Rauschenberg and Nike de Saint-Phalle
Judson Dance Theater in New York, and went on to create performance, mixed-media, and kinetic sculptural works throughout the 1970s and early 80s. Schneemann’s work during this period engages tropes of flesh-as-material and the body in performance. In these pieces, sexuality and feminism are interwoven with themes of time, history, power, and work-as-labor. Schneemann routinely confronts the problematics of a male-dominated (art) world by pushing accepted conceptions of the body-in-society at the limits of the act of making.

Carolee Schneemann’s investigation of the politics of sound, reception, body, and place can be explored through the juxtaposition of two radically different works that bookend two decades of her artistic output. Her earliest-acknowledged performance piece, *Glass Environment for Sound and Motion* (1962) and her kinetic sculptural installation *War Mop* (1983) both mobilize materials and themes that can be traced through much of her intervening work. Of the two pieces, only *War Mop* uses audio-visual technology explicitly in its construction; however, the use of sound as a component in *Glass Environment for Sound and Motion* exposes a conceptual link that reinforces her awareness of the power of sound to both convey and reinforce artistic intent.

*Glass Environment for Sound and Motion* was a large-scale performance action that took place as part of a Judson Dance Theater performance at Judson Church in Manhattan in May 1962. At the invitation of Dick Higgins and Philip Corner, Schneemann created a work for a program including multiple performances of composer LaMonte Young’s conceptual work *Poem for Chairs, Tables, Benches*, Higgins’ *Two Generous Women*, and a

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lecture by the composer Philip Krumm entitled *Where to Go from Here*.\(^{13}\) The evening took place only two months prior to ‘Concert for Dance #1,’ which is considered to be the first official Judson Dance Theater performance, and foreshadowed many of the events, techniques, and aesthetic markers that would come to define the work of the Judson group in the years to follow.\(^{14}\)

*Glass Environment* was a loosely structured instruction-based performance work consisting of four dancers, two ‘wandering musicians,’ and a lighting designer. The stage was collaged ... with broken glass: mirror glass, safety glass, fused lumps of glass drilled and hung in clusters in varying planes. ... Shards and clusters of glass, some shrouded, some visible, were set so performers would produce sounds by striking against them as they moved. Large broken mirrors were positioned to reflect and refract portions of the performers’ bodies.\(^ {15}\)

Suggestions for ‘basic movements’ and ‘characteristic sounds’ were given to the performers in place of explicitly articulated and immutable choreography in an effort to display ‘the particularities and contrasts between types [of movement vocabularies or characters]; each seen as vivid, distinctive.’\(^ {16}\) In addition to the acoustic condition set forth by the interaction between the performers and the glass on the set, a discrete sound piece called *Soft Materials* was integrated in collaboration with composer Philip Corner. *Glass*

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\(^{13}\) LaMonte Young’s piece consisted of instructions for moving the furniture around the space.


Environment progressed through a number of pre-defined formal sections whose narrative construction was articulated by the performers having written out their possible actions and gestures prior to the performance. These actions were then subject to repetition and variations and could be freely copied by the other performers within a given section. In these formal divisions - Soft materials, Display, Mirror I, Mirror II - the performers engaged in various easily legible everyday actions such as push-ups, sitting, sticking a tongue out at a mirror, hammering nails, pushing a baby carriage, and coughing. These more common actions were juxtaposed against a movement vocabulary that was comparably raw, almost ecstatic: the flapping of arms, shuffling, spinning, and shrieking. The general lighting designed by Billy Name, consisted of only a few spots and floods. This lighting was complimented by Schneemann, who used flashlights to illuminate the dancers and reflect light back into the seating area from her position in the audience.

Figure 7. Carolee Schneemann, War Mop, 1983.
∗War Mop, part of a group of works by Schneemann entitled ‘Lebanon Series,’ is a ‘kinetic sculpture in which a mechanized mop on a plexiglass fulcrum flails [a] TV monitor in relentless rotations.’∗ Presented in the gallery as a collection of found objects, the television and mop are neither prepared nor altered, evoking objects that might be found in any (every) home, suggesting themes of women’s work alongside a critique of television as a form of media consumption. The installation condition presents video newsreel footage on the television screen that depicts the bombed-out wreckage of the Lebanese town of Damour after the Isreali invasion in 1982. The shot pans between this footage of wreckage and a female Palestinian refugee, screaming at the camera in the shell of her now-destroyed home. This ongoing live-action video loop is periodically intercut with still images of pre-invasion Beirut obtained by Schneemann from the Lebanese tourist bureau prior to its closure in 1981.

∗War Mop draws its conceptual force from the dialectic at work between its constituent parts. Plexiglass, television, and mop create a dynamic oscillation between the physical action of the mop continually flogging the television and the intentional confrontation of the narrative contained in the sound/image vocabulary of the television frame. As in a number of other Schneemann installations (Meat Joy [1964], Venus Vectors (1987), Vespers Pool (1999), and the installed artifact from her seminal work interior scroll [1975]), the Plexiglass, mediating mop and television, comes to embody transparency, a form of material nudity, or exposure.∗ Plexiglass is also iconic of display itself, protective (archival) but also a form of power: the unseen support that orients the gaze. The mop is a

18 Schneemannn, Imaging Her Erotics, 187.
recurring fixture of Schneemann’s work, serving as both paintbrush and prop in works as diverse as her early sixties paintings and her 1990 installation work *Scroll Painting with Exploded TV* (also a part of the Lebanon series).\(^{19}\)

Both *War Mop* and *Glass Environment* engage issues of work, dismantlement, and the relationship between movement and sound. The shattered glass shared by both works – in the architectural scene of *Glass Environment* and the glass-riddled wreckage of the Beirut video footage in *War Mop* – offers a complex reading of the relationship between the self, sound, and structural architecture. The idea of a physical structure as an extension of the self is prevalent in much of Schneemann’s work, exemplified and strengthened by the struggle for identity that is the plight of the displaced Palestinians in *War Mop* and the stage set of *Glass Environment*.

In the imagery of the video footage, the ‘rubble’ of the Palestinian woman’s destroyed house, ‘is exquisite...It’s like a stage set. It takes you a little while to realize that the house is only half there, there is no front and there is no side. Everything is surrealistic, almost normal, but half-destroyed.’\(^{20}\) The sound playing from the loudspeaker of the television, is not documentary but accidental, consisting primarily of handling noise made by the camera and its operator. The camera-microphone is not subject to the same limitations as the linear gaze of the camera-video. The microphone listens spatially, hearing both in front and behind the camera coding the footage as having been gathered by a human operator. The sound of the mop hitting the television complicates this coded footage, implying that the person holding the camera is, in fact, the object of the mop’s violence.

\(^{19}\) Schneemannn, *Imaging Her Erotics*, 189.

The stage set of *Glass Environment*, while still rubble, still destroyed, points to a different relationship working at the nexus of sound, architecture, and power. In Schneemann’s conception, ‘Every element contributes to the image. The active qualities of any one element (body, light, sound, paper, cloth, glass) find its necessary relation to all other elements and through conjunction and juxtaposition the kinetic energy is released.’

Much the same way as the televisual loudspeaker betrays the camera-person by rendering audible the handling noise in *War Mop*, the movement of the dancers is betrayed by the sound of their actions on the set of *Glass Environment*. In conventional choreography, on a set not treated in this manner, the movement of the dancers is substantially soundless, potentially silent. As *War Mop* draws on the traditionally silent camera handling of electronic news-gathering, *Glass Environment*, erases the anonymity of traditional architecture-as-functional-structure and draws a communal line between performers occupying the broken space of the stage and an audience that inhabits a version of the real world. This dichotomy is made all the more clear by Schneemann’s use of flashlights directed from her place in the audience against the mirrors and glass of the stage meant to shine in the faces of the audience members at the close of the piece. Where sound serves as a trace of movement and an affirmation of embodied action, light exposes the status of visual observation to contrast the stark difference between the subject and object of the gaze.

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22 In the context of the Happenings of the same period in which the incorporation of the audience into the action, erasing the boundary between spectacle/spectator, Schneemann puts pressure on this division.
In Schneemann’s work, the potential for sound to code the final received meaning of the work is always carefully considered as a contributing component. “Manifest in space,” says Schneemann, “any particular gesture acts on the eye as a unit of time. Performers or glass, fabric, wood... all are potent variable gesture units: light and sound will contrast or enforce the quality of a particular gesture’s area of action and its emotional texture.”

In the ‘found wooden forms covered with cut and smashed amber mirror glass’ of Music Box Music (1964) and the ‘bodies completely costumed in sound making debris’ of Noise Bodies (1965), a deep performative engagement with the politics of sound and the body are explored through the unavoidable change that occurs in the space of contact. Sound itself, as well as the media technologies that produce it and the space that it defines, becomes an ephemeral trace of the body. In both War Mop and Glass Environment, Schneemann uses the physicality of sound to encourage the audience to identify with the action that takes place before them, to position their own bodies in the space of the work. Sound functions in Schneemann’s oeuvre not only as a byproduct of action, or of work, but also a marker of the inescapable, surrounding, and immersive air that is shared by both subject and object.

Voices

In the din of listening for the content of words, it is easy to forget that the voice is also physical sound. The same voice that whispers can also sing, as it emanates both externally from the body or suggests itself within the mind as a memory or thought.

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24 Schneemann and McPherson, More Than Meat Joy, 93.
The ‘universe of voices’ under examination by the nine artists in the exhibition
*Voices*, mounted in 1998 at Rotterdam’s Witte de With Center for Contemporary
Art, acknowledges this complicated dualism of public and private speaking, as well as the
role of the voice as both metaphor and material in contemporary art practice.25

The earliest exhibitions in the United States featuring sound as a curatorial theme appear around 1966, with two or three sound-themed exhibitions a year until roughly ten years later.26 Between 1979 and 2010 the number of exhibitions engaging sound averages about eight per year (and sometimes as many as twenty), addressing a broad range of topics and technologies. Since the late 1960s, the voice has been a recurring curatorial theme throughout many of these exhibitions; exhibitions thematically concerned with the voice, however, begin in earnest in the 1980s and have continued with frequency since.27

Christopher Philips’ curatorial strategy for the *Voices* exhibition embraces the multivalent and labyrinthine nature of its eponymous topic, recognizing that the voice is at once beautiful and complex. *Voices* functions not only as the title of the exhibition, but also as its theme, acknowledging the implicit plurality of approaches taken by each artist. Voices are variously present in this exhibition as the sound evoked by text, video, installation, sculpture, and photography, placed in dialog with the attendees and in turn with each other. The differences in media highlight not only the common ground between the varied

25 The exhibition was mounting from June to August 1998 in Rotterdam, the following year the exhibition travelled to the Le Fresnoy museum in Tourcoing, France. A robust catalog was produced: *Voices, Voces, Voix* (Rotterdam: Witte de With Center for Contemporary Art, 2000).
26 For an extensive list of over three hundred exhibitions arranged by year, see Appendix A
27 Examples include *Voix et Son* at the 1982 Paris Biennale, *Video as Language/Language as Video* in a 1987 exhibition at the Renaissance Society at the University of Chicago, and the 2006 exhibition *Voice and Void* at the Aldrich Contemporary Art Museum in Connecticut.
treatments of the body-instrument that brings forth speech but also the “electronic metamorphosis of the voice in the twentieth century.”

The works presented during Voices by the American artist Gary Hill and the French artist Pierre Huyghe perform the way that sound functions as a component in multimedia work. In the analyses that follow, interwoven concerns drawn from works by both artists address the status of language in moving image productions, the presence/absence of the sound source, and the role of anticipation in the unfolding of conceptual process. Though Hill was working in 1970s and 1980s and Huyghe in the 1990s and 2000s, these pieces exemplify the potential dynamism of audio-visual works to address pressing social and artistic issues.

Gary Hill

In the work of Gary Hill, the voice is central to his exploration of language through the medium of video. For Hill, the sound of the voice is an attribute of language that can be considered as both content and material. From his early work informed by sculpture, sound provides Hill with a model to begin his experiments with video: “I got into sound first. I discovered the sculptures generated interesting sounds, lots of different timbres. The overall texture seemed to mirror what I was seeing.” This mirroring would define his early output, with iconic videos such as Primary, Sums and Differences, and Mouth Piece (all 1978), showing that the way in which “video and audio function together are the properties of video. “As component parts of the technology of video itself (television was never

28 Voices, Voces, Voix, 28.
without both a loudspeaker and a cathode ray tube), sound and image are fundamentally linked.\textsuperscript{30}

\textbf{Figure 8. Gary Hill, \textit{Mediations}, 1987.}

The \textit{Voices} exhibition presented Hill’s now canonical single-channel video, \textit{Mediations}. Originally produced in 1987 as a remake of \textit{Soundings} (1978), \textit{Mediations} is a study in process and language. \textit{Soundings} was developed during a period where Hill was exploring video technology as material. In \textit{Soundings}, Hill video-taped himself speaking through a loudspeaker that is in turn set on fire, covered in sand, covered in water, nailed, spun, and touched. \textit{Soundings} exemplifies his work in language at the intersection of action

\textsuperscript{30} Ibid.
and technology. As he moved away from the exploration of video technology as material, Hill began to engage the voice as a narrative component of the viewer/listener’s subject formation.

Where *Soundings* was improvisatory, inventive, and iterative in its manipulation of the voice through its engagement with the loudspeaker, *Mediations* began a shift away from purely physical mediation focusing on the mediation of narrative over time by an active, physically present agent. *Mediations* presents the viewer/listener with a single, un-moving camera shot facing down towards a bare speakercone. With the loudspeaker lying horizontally, the cone facing the camera just to the edges of the frame, a narrator speaks slowly, carefully constructing phrase after phrase to emphasize both the sound and the semiotic legibility of language:

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“speak
speaker
err aahh
a voice
a voice speaks out
out loud
a loudspeaker lauds the voice
out loud
out of bounds from the picture
a picture of a speaker etc...”
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A hand enters the picture, cupped and full of sand. The sand is slowly and carefully poured onto the bare loudspeaker and it is revealed through vibration that, even though the narrator is unseen, the loudspeaker from which his voice emanates remains visible. The process takes three and a half minutes; each new spoken phrase shows

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31 Transcription of Hill’s speaking voice by the author
handful after handful of sand filling the loudspeaker until the sound of his speaking voice becomes obscured.

The vibration of the loudspeaker is responsible for the delivery of the voice; the introduction of the sand slowly conceals the words, masking the sound the way the image of the sand covers the speaker. With the introduction of the first handful of sand, Hill draws a causal relationship between voice and vibration that creates identifies the narrator as a subject. The bare speaker cone articulates the weight of authority inherent to voiceover narration in this work, exposing the relationship between the speaking voice and the disembodied sound presented by the loudspeaker. The voice is doubly present in this disembodiment, operating as sound emanating from the loudspeaker depicted onscreen while simultaneously functioning as sound radiating from the television monitor displaying the video in the exhibition. Not unlike Alvin Lucier’s audio work I Am Sitting in a Room (1969), the physical properties of the medium-specific condition of Mediations presents an erasure of the subject of the recording. Repeating the process of covering the speaker further obscures this double presence, simultaneously revealing the potential fallibility of the loudspeaker while challenging the power of the off-screen narrator.

The immobility of camera movement through the unblinking eye of the lens observes an unfolding scene that situates the shot as a literal point of view. The vocal exclamation of the single word ‘speak,’ complicates the position of the off-screen narrator as authority figure by rendering the text both description and command. This impression is reinforced when the narrator repeats ‘speak’ by adding the additional dimension of the sound of the word itself. As the narrator adds an ‘er’ to ‘speak,’ language not only begins to
break down to its component sounds (words to their component phonemes), the authority
of the narrator breaks down in kind. The ‘err ahh’ (nearly a stutter, a non-linguistic or pure-
sound utterance) cements this disintegration, preparing ‘a voice’ while reinforcing for the
viewer/listener that they are neither hearing a voice, nor hearing a speaker, but ‘hearing a
voice from the speaker.’ “This tape may act as the first step into what will become an
explicit signature strategy,” notes art historian Steven Sarrazin, observing that Hill employs
“syntaxic editing: the image changes literally when the sound tells it to do so.” In Hill’s own
words he is “Sounding the image, imaging the sound, locating the sound with my voice,
imaging my voice.”32

The carefully timed spoken narrative continues the unfolding of the process as the
loudspeaker is continually covered with sand. In this work a tension develops between
knowing what action is intended by the process and anticipating the resulting effect of the
process on the sound of the spoken voice; that the video should end with the speaker
covered in sand is not in question, but rather how the sand will mediate the sound. In this
way, the process takes the place of conventional narrative unfolding using the spoken word
as a vehicle to see this process through to completion.

Pierre Huyghe

The French multi-disciplinary artist Pierre Huyghe creates work that is deeply
engaged with the status of narrative in moving-image media. Where the work of Gary Hill
in Mediations relies on the anticipation of sound to push oral narrative through a process to

an inevitable (perhaps unknown) conclusion, Huyghe employs written narrative as a means to create the anticipation of sound, highlighting a shared experience between performer and viewer/listener. By recontextualizing the roles of director, technician, actor, and audience Huyghe critiques the narrative modes employed by mass media, creating art works that function as a “model for looking at things.”

The work of Pierre Huyghe uses the familiarity of existing materials as a point of entry for the intended viewer/listener. Like 24-Hour Psycho by his American contemporary Douglas Gordon (1960-) that manipulates the classic thriller by slowing it to two frames per second (from the usual 24), Huyghe’s contribution to the Voices exhibition presents the entirety of Poltergeist (1982) from the point of view/audition of a staged re-dubbing of the film into French. Similar works by Huyghe such as The Third Memory (2000) have presented a re-enactment of scenes from Sidney Lumet’s Dog Day Afternoon (1975) performed by the man the original script was based in the place of Al Pacino, or Remake (1995) where Huyghe remakes Hitchcock’s Rear Window (1954) shot-for-shot in a Parisian housing project with unknown actors, his work consistently positions lay people in the place of actors creating a tension between amateur/expert, fiction/reality, and spectator/performer.

Similar to Mediations, Huyghe’s Dubbing is a single channel video dealing with the interaction between the sound and image components of film. Also like Mediations, the work projects an unmoving camera shot fixed on the subject(s) of the video, drawing the audience/viewer to attend closely to the sound. In Dubbing, however, Huyghe uses the

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visual presence of the source of the sound to put pressure on the relationship between the overdub and the image, emphasizing the gap between sound and narrative as “a way to translate an experience without representing it.”34

Figure 9. Pierre Huyghe, *Dubbing*. 1996

In *Dubbing*, a rear projection screen shows a group of twelve performers seated on a film industry sound stage. The documentary-style shot is slightly off-axis from the focused gaze of the actors, supporting the eventual realization that they are also watching a screen. This event is marked as a recording session by three microphones flown above the performers and a single microphone located upstage on a stand. Horizontally scrolling text

moves along a white bar at the bottom of the screen in the gallery, showing cues that indicate the lines that each character must read. The unfolding text is the script to the 1982 American horror movie *Poltergeist*; the actors, ‘like instruments of an orchestra, ...represent all of the voices that compose the original film.’ Rather than the traditional method of recording a single actor at a time, a group performs this kind of dubbing or voiceover session in real time like a musical ensemble.\(^{35}\)

The tension between the interior listening of the audience/viewer reading the script and the exterior sound of the actors is central to the effectiveness of *Dubbing*. Providing a literal foreshadowing that the performers (on screen) produce a haunting ‘ahhhh’ sound, the shared script creates an anticipation of what will come next. Identification is created between the viewer and the actors through the common experience of both reading and performance, extending the narrative beyond the video to the moment of reception where the view becomes a performer.

*Dubbing* and *Mediations* articulate issues central to the exploration of the technologically mediated Voice. While both are concerned with the status of the voice in relation to the image, *Mediations* capitalizes on the inseparability and mutual reinforcement of the action on screen with the voice that narrates it; the loudspeaker becomes at once the technical embodiment of the language/action that is the subject of the film and the disembodiment of the physical voice. *Dubbing*, on the other hand, divorces the voices from the film they narrate, becoming the embodiment of the language/action that

\(^{35}\) *Voices, Voces, Voix*, 64.
the video critiques. Each work emphasizes a different node on the same matrix of concerns: the relationship between the voice and onscreen action, the intersection of sound and image at the site of reception, and the role of narration in the audio-visual *mise-en-scene*.

Sound is at the center of this matrix, functioning as an audible trace of the voice, the acoustic presence of the work itself, and finally as an inextricable component of multi-media forms used to deliver narrative material. In both their works in *Voices*, Hill and Huyghe complicate the veracity of the image-sound nexus by introducing a mediating element: for Hill, the sand and the unseen narrator, for Huyghe, the scrolling script and the unseen film. And while it is common in audiovisual art works for artists to put pressure on the relationship between sound and source, these works actively critique this relationship through a process of selective exclusion. Hill presents the image of the source being acted upon while denying us the mouth of the subject who speaks. The loudspeaker becomes a surrogate mouth to the body that places sand as an impediment to its audio clarity. The fact that the loudspeaker re-presents the voice leaves the possibility that no human speaker is present and that the voice and the video that documents the actions on it are both recordings.

Huyghe’s *Dubbing* performs a parallel operation: the video image presents the mouth that speaks while leaving the filmic image of *Poltergeist* mute. The voices follow a script that is also present for the viewer, confirming the structure of the image on which it relies while supporting the narrative despite the absence (to the viewer) of the film. For Huyghe, “only through these performers, taken here in the sense of dubber, actor, and translator, and through the moving dialogues, do we have access to the narrative.” Huyghe
presents the narrative in a form that outs the inherent deceit of the audio-visual contract in cinema – that almost all sound is recorded separately from the action.\textsuperscript{36}

Just as both sound and image contribute to everyday experience, artists like Tinguely, Schneemann, Hill, and Huyghe attend to sound as a component integrated within the work. The result of this considered approach to material is a working practice where the component parts mutually reinforce the ideas both within and behind the individual piece. Sound, considered as supplement, can be easily lost as the byproduct of an action, a carrier of speech, or mute internal dialog; to mask these subtle attributes of sound in art history is to obscure the legibility of works spanning genre, discipline, medium, and material.

As sound is folded in to the overall experience of the work of art, the clarity with which its subjects, concerns, and expressions can be theorized in contemporary practice may hinge on the ability of our models of analysis to account for information beyond the optical and haptic modes. An acknowledgement of the role of space and place in the production of works of art and music began in the 1990s, providing a vocabulary and critical tools to reassess practices back to the mid-nineteenth century. Histories and theories of both art and music have, in large part, focused on the other senses rather than incorporating them into existing discourse. This focus has left a deaf-spot that, with the right re-attention, might simultaneously integrate and counter point sound and recontextualize the aesthetic sensorium.

\textsuperscript{36} Ibid.

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Chapter 3

Acoustic Projection and the Politics of Sound

The visible can establish the distance, the nature and the source of the voice, and thus neutralize it. The acousmatic voice is so powerful because it cannot be neutralized with the framework of the visible, and it makes the visible itself redoubled and enigmatic.
Mladin Dolar, from A Voice and Nothing More

The voice of authority no longer requires a body. To exercise authority through the voice is now to master the subtle operations of the acoustic at each point of its intersection with society. When figured in the everyday social landscape, how does sound as power function? Through the loudspeaker authority can stand at a distance, address but remain un-addressable, and dominate through sheer volume. And while the study of images, the sense of sight, and the act of observation in large part dominate the discourse on the interpenetration of power, ideology, and the senses, scholars remain largely silent about the role of sound in this engagement. Sound plays a substantial role in how we interact with or have been targeted by systems of power and control. The function of sound within the discourse of power can be heard clearly, and has grown stronger precisely because it has escaped the scholarly gaze.

As a part of the technical infrastructure of social listening, the loudspeaker plays a component role in the discourse of power in much the same way it contributes to the

1 Dolar, A Voice and Nothing More, 79.
media landscape. Prior to the invention of the loudspeaker, the power of acoustically amplified sound stopped at the physical limits of the voice, but it is at the intersection of the technical affordances of the loudspeaker and a socially conceived understanding of sound that a discourse of sound and power emerges. I am interested in power manifested socially in the form of surveillant control through public policy, as well as how amplified sound functions within the public sphere. In this chapter, a brief analysis of two sets of idiomatic phrases used to express the operations of power through the optical and the acoustic lead to an exegesis of certain psycho-acoustic effects that inform social presence. An investigation of the functional acoustics of the incarceration system in the work of Jeremy Bentham (1748-1832) will attempt to balance the hegemony of the visual that informs much of the Foucauldian discourse on power. Then, by examining an historical example of the politics of public address, the potential exploitation of the power of sound will be explored through the changes and affordances effected by its amplification.

**Speaking truth to power**

I would like to begin by presenting two facets of everyday experience that articulate the relationship between sound and control, surveillance, oppression, and self-regulation. By pointing up linguistic and psychoacoustic effects, it is not my intention to suggest a focused determinism at work, but rather to expose a chink in the armor of the sensory system.² Taken together, the linguistic and the psychoacoustic examples that follow represent the basic operating principles that inform socially conceived listening.

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² Psychoacoustics is a branch of psychology that studies the relationship between sound and subjective perception.
Certain idiomatic phrases, colloquialisms from everyday speech, serve as examples of language figuring the relationship between sensory affordances and the operation of control. Many common phrases that mobilize sound, when examined closely, betray a less-than-conscious knowledge of the potential power of the auditory as it operates in everyday speech. It is common for one to speak of over-seeing, or being overseen. This phrase generally suggests the actions of a person of authority in the former or the person under the gaze of that authority in the latter. Here, authority is constructed spatially as a superimposition, hierarchy, or simple difference in height or magnitude. In contrast, when one speaks of over-hearing or being overheard, there is the implication of an aggressive reception position, one in which information is acquired surreptitiously. In common usage, the spatial characteristics of being overheard are fluid, implying an unseen or unknown listener whose power lies in having gone undetected and unidentified. In this case, the acousmatic ear uses its concealed presence to gather information and is both part of and partner to the voice of authority.

Similar linguistic differentiations are at work in phrases that articulate the relationship between spatial relationships and sensation, words that indicate proximity or orientation to the subject of perception. The phrases sight-line or in my line of sight connote the linearity of seeing; the binary opposition of the psychological subject and object; I am here and you are there ‘establishes a distance’ through vision. This opposition finds its

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3 The idea of a formative relationship between metaphor and embodied knowledge has been explored extensively in the work of the cognitive linguist George Lakoff, see George Lakoff and Mark Johnson, *Metaphors We Live By*, First Edition. (Chicago: University Of Chicago Press, 1980).

4 The term acousmatic refers to a sound that is heard without visual reference to the source of the sound.

analogue in the manner in which the functional physiology of the optical apparatus identifies physical subjects and objects: the optical gestalt is separated into figure(s) and ground, an opposition between persons/objects and situated place. In my line of sight positions the self in opposition to the other, isolating the other from the perceptual field.

The equivalent idiomatic phrase signifying the act of listening is earshot. In direct contrast to the act of looking, earshot describes the fundamental polarity inherent to the sense of hearing. In opposition to the linearity of vision, listening is largely polar/spatial: listening happens in the round. The kind of information gathered by the ear is on the order of environmental gestalt; the auditory apparatus privileges the whole over the part in the parsing of the auditory scene. Though sightline and earshot function interchangeably in everyday speech, they are rooted in two opposing conceptions about perception: optical-linear and auditory-polar. Understanding the distinction between these conceptions is crucial to an investigation the role of sound in the discourse of power.

The power of sense

In the previous examples, it is possible to see how linguistic signifiers betray a tacit understanding of the relationship between the senses and power. Psychoacoustics, however, by expressing in clear terms how we hear what we hear, provides a concrete example of the way in which an a priori cognitive predisposition functions as a social

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7 Immanuel Kant notes that the sense of sight provides “the immediate representation of the given object” which “leads the subject through reflection to cognition of the object as a thing outside ourselves.” in Immanuel Kant and Robert B. Louden, Anthropology from a pragmatic point of view (Cambridge: Cambridge University Press, 2006), 48.
vulnerability. Through the examination of sensorimotor contingencies related to the functional sense of hearing, the manner in which listening operates in the total sensorium serves as a model for thinking about sound within the complex sensory fields of the overseen and the overheard.\(^8\)

Primary sensory states, or the operations at work when the senses are not consciously directed, are pragmatically functional. These sensations act constantly and consistently in order to assist basic locomotion, navigation, and communication.\(^9\) Primary sensations both build and rely on experience, and these experiences in turn inform our consciously directed actions as well as those that can be considered pre-cognitive. Though the particular affordances of these primary sensory states change from one situation to another, from one community to another, and from one environment to another, the basic functions remain common and immutable.

The auditory system hears in three dimensions despite only possessing two acoustic sense-receptors (ears). In psychoacoustic conceptions of hearing, three-dimensional spatial information in the audio domain (the auditory scene) is constructed in part through an assessment of the spectral content of incoming sounds in the context of timing, phase, and intensity differences between the arrival of sound to each ear.\(^10\) In other words, a sound approaching the listener from forty-five degrees off-center to the right side will

\(^8\) The sensorimotor contingency law implies a direct connection between muscle action and sensory input. For more information see J. Kevin O’Regan and Alva Noë, “A Sensorimotor Account of Vision and Visual Consciousness,” Behavioral and Brain Sciences 24, no. 05 (2001): 939-973.
\(^10\) For a detailed study on perceptual faculties within the auditory scene see Albert S. Bregman, Auditory Scene Analysis: The Perceptual Organization of Sound (Cambridge: The MIT Press, 1994).
arrive with a certain acoustic profile at the right ear, and then at the left ear slightly later with a markedly different profile.\textsuperscript{11}

It can be observed in the quotidian activity of walking, that the eye and the ear work in tandem to gather the information that assists movement. The eye, which is only able see a small area of space in focus at one time, acquires the layout of the surfaces, the positions of objects, and timing of events in an environment by scanning rapidly or flitting.\textsuperscript{12} The ear, however, is always open, and though it is not immediately obvious, the focusing mechanism at work in the auditory system plays a defining role in our ability to negotiate space.

When walking through the forest or the city – any locale where it is necessary to actively attend in order to traverse the environment safely – the eyes scan the surrounding area, enabling confident steps. If a branch cracks or a car horn blows outside our line of sight, the head snaps toward the location of the sound without conscious direction.\textsuperscript{13} In this case, seeing and hearing function together in an effort to identify the sound source and assess whether there is any potential danger. While the eye moves to where the ear detects an acoustic presence, the ear continues to listen to the background while attending to the location of the unexpected sound. Each sense works in tandem, multi-modally; if everything appears to be safe, then each individual sense functions in parallel. The eye and the ear remain in the optimum mode of operation appropriate for the situation, reinforcing and confirming the information gathered by the total sensorium.


\textsuperscript{12} Bruce, Georgeson, and Green, \textit{Visual Perception}, 255.

\textsuperscript{13} Michel de Certeau draws an interesting connection between the notion of ‘turns of phrase’ and the experience of traversing space: “There is a rhetoric to walking. The art of ‘turning phrases’ finds an equivalent in an art of composing a path (tourner un parcours).” in Michel de Certeau, \textit{The Practice of Everyday Life}, 1st ed. (Berkeley: University of California Press, 2002), 100.
In this example, even though the senses function synchronously, a break or bump in the flow of information causes one sense to take a dominant role. Here, listening directs the gaze to assist and confirm the surroundings, providing confirmation by gathering ear-specific information.\footnote{James J. Gibson, \textit{The Senses Considered as Perceptual Systems}, 1st ed. (Greenwood Press Reprint, 1983), 35.} This sensory direction is immediate and pre-cognitive: it is action before conscious direction to act. The examples that follow show the working environment in which the information gathered by the senses operates in the context of iconic displays of authority. By considering spoken language as the informational content of acoustic projection, and the sense of hearing power relationships, the technologies of amplification and dissemination of sound are revealed as components of the way in which authority functions.

**Wielding acoustic information**

Linguistic anthropologist Walter Ong observes that the fixing of the Homeric Epic poems to written text around 700 BCE initiated a shift from orality to literacy in Western civilization, reflecting a conception of both spoken and written text as information.\footnote{Walter J. Ong, \textit{Orality and Literacy}, 2nd ed. (London: Routledge, 2002), 24.} Likewise, Marshall McLuhan has noted that the shift from hand-writing to type-setting at the beginning of the print revolution enabled the spread of the Bible throughout Europe, expanding the fixed narrative of the written word in a form of information that can be mass-disseminated.\footnote{Marshall McLuhan, \textit{The Gutenberg Galaxy: The Making of Typographic Man}, Reprint. (Toronto: University of Toronto Press, 1966), 12.} Most recently, the sociologist Manuel Castells has posited the beginning of an information age in which communication shifted from mere typographical
production to pervasively networked dissemination during the rise of the mass media at mid-century.\(^\text{17}\)

The role of the loudspeaker in this cultural-historic continuum of information delivery affords something markedly different but intimately related to the observations of Ong and McLuhan that provides an important touchstone in the development of the networked society proposed later by Castells. The introduction of the loudspeaker during the third quarter of the nineteenth century enabled a return to orality that extended language into space in the same way that literacy helped extend writing over time. In this way, the ability to disseminate the same message to many, made possible by printing, was acoustically achievable with the ephemeral immediacy of speech through the loudspeaker. The loudspeaker enables a single person to speak to hundreds of thousands at once, lending amplification to the rhetoric of Cicero – the power and intimacy of persuasive orality in an efficient form of mass delivery. By expanding the geographic reach of information, the loudspeaker becomes the \textit{conditio sine qua non} for thinking about mass distribution during the media-technological developments that would come to define the second half of the twentieth century.

The amplified voice in the moment of public address fundamentally changed the nature of ‘the voice of authority.’ Hitler, in a 1937 German Radio Manual, said ‘without the loudspeaker we couldn’t have conquered Germany.’\(^\text{18}\) The loudspeaker can, however, yield similar effects through less overt, more implicit means than such megaphonic strong-

arming. The voice of authority is itself a component part of the coercive mechanism available to those seeking to exert their will over others. The strength of this voice is remarkable for its ability to maintain just as much power when a person remembers it of their own accord as when they cannot for the sheer volume escape the message.  

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19 In a 1938 interview Carl Jung suggested that, “Hitler is the mirror of every German’s unconscious… He is the loudspeaker which magnifies the inaudible whispers of the German soul until they can be heard by the German’s unconscious ear.” See H.R. Knickerbocker, “Diagnosing the Dictators,” *Hearst’s International Cosmopolitan*, 1938. In C. G. Jung, *C.G. Jung Speaking* (Princeton: Princeton University Press, 1987), 115.
Pan-Audicon

How does loud speaking last after the voice becomes silent? How might this interior voice of authority function? The archetypal model for the functioning of control in contemporary society can be found by fixing the ear on the carceral state typified by the now iconic Panopticon Prison.

The Panopticon embodies an efficient balance between the functioning of perceptual systems, psychology, and architecture. Conceived by the eighteenth-century English utilitarian philosopher Jeremy Bentham, a circular structure houses an open
courtyard in the center of which sits a round tower serving as a guardhouse. A single guard positioned in the central tower is able to monitor all of the inmates; for Bentham, it was crucial that the inmates were consciously aware of the location of the guard at all times. The guard post was designed such that the lighting of the tower betrays only the barest shadow of the guard so that a prisoner could never be absolutely positive that the guard is watching. The motivation for the design was to achieve the maximum amount of control with the minimum use of corporal punishment, so the Panopticon encouraged inmates to monitor themselves by exploiting their belief that they may be subject to the gaze of the guard at any time.20

For Bentham, and later for Michel Foucault in his classic analysis of Panopticism in ‘Discipline and Punish’ (1975), the strength of this model relies on the idea that the physical presence of the guard is not necessary for self-regulation; it is the mere idea of being watched that encourages auto-surveillance.21 Foucault’s reading of Bentham examines power at work primarily in the visual domain. Though the Panopticon itself has fallen out of use, the analysis provided by Foucault articulates the manner in which those in power employ the effect of the design, observing how the concept of panoptic self-regulation functions to control the actions of a society. One need only attend to the lighted sign along the highway that makes a driver aware of their speed to see to the traces of panopticism at work in contemporary visual culture. Like the increasing presence of surveillance cameras on the top of stoplights, the lighted speed sign slows traffic precisely

because of the asymmetrical unconfirmability of the presence of an actual authority
reading and acting on the collected data.

That the presence of surveillance cameras are a known deterrent to crime whether
or not they are operational illustrates the clear effectiveness of power figured by vision.
How then might an equivalent form of aural self-regulation function? In his treatment of
Bentham, Foucault does not theorize the role of listening in the rhetoric of auto-surveillent
control, save a telling footnote where he dismisses Bentham’s proscription for the potential
role of acoustics in his design. Foucault writes:

In his first version of the Panopticon, Bentham had also imagined an acoustic
surveillance, operated by means of pipes leading from the cells to the central tower. In the Postscript he [Bentham] abandoned the idea, perhaps because he could not introduce into it the principle of dissymmetry and prevent the prisoners from hearing the inspector as well as the inspector hearing them.22

Foucault’s reading of Bentham here is not entirely accurate: the acoustic pipes in
Bentham’s original plan are abandoned only for listening. The principle of dissymmetry,
that one can hear but not be heard, is a crucial component of the phenomenon of self-
regulation. To hear the guard through the pipe would be to know the presence of the
guard, and more importantly for Foucault, not hearing the guard confirms their absence.
The pipes however, remain present in Bentham’s design for the practicalities of running
the actually-built prison - they are present to bark orders:

The...set of conversation-tubes is to enable an inspector in the lodge to hold
converse in his own person...with a prisoner in any of the cell. To an inspector in the
lodge, it is not indeed in every part of every cell that a prison with whom he may
have occasion to hold converse will be already visible. But to render him so, there
needs but an order summoning him to the grating.23

22 Ibid., 317.
23 Bentham, Panopticon Writings, 111–112.
The absence of dissymmetry in Bentham's design for acoustic surveillance that is lamented by Foucault is no longer problematic with the introduction of the loudspeaker. One of the most important technical affordances of the loudspeaker is that it introduces a discourse of 'speaking at a distance.' By delivering focused sound, the asymmetry introduced by the loudspeaker presents a previously unexplored dynamic of acoustic power. The technological affordances of the loudspeaker give voice to an authority that will be listened to when and only when it chooses to speak.

**The ear of a tyrant**

No one disputes the power of the watchful eye, but how might we understand the 'voice of authority' in the context of the paranoid ear? It is important to note that in Bentham's plan, the two-way nature of the acoustic tube for speaking as well as listening establishes another important affordance of the loudspeaker that resonates with the earlier examples of allowing listening to direct the gaze. Those in power exploit the ever-open ear to know when to attend to the individual, avoiding insurrection by arresting the plans of those who would wish to rebel against them.
Bentham was not the first to imagine an acoustic prison. An example of acoustic early warning writ large can be seen in a proto-acoustic surveillance prison located in Syracusa, Sicily.

![Image of Ear of Dionysus, Syracusa, Sicily.](image)

**Figure 11. Ear of Dionysus, Syracusa, Sicily.**

Discovered in the fifth century BCE, the Ear of Dionysus (Orecchio di Dionisio) is a natural grotto unique for its 20-second reverberation time; later formed into a prison by the fourth-century BCE Greek tyrant Dionysus, it has become a well-traveled modern-day tourist landmark. The myth associated with the cave charts the paranoia of Dionysus who
exploited the acoustical resonance of the cave as a way to monitor his captured enemies. Today, tourists from all over the world frequent the cave; they are encouraged to sing, yell, clap, and most interestingly, eavesdrop on other tourists. The result, however, much like nearly all systems of incarceration, is that the (sound) architecture of the cave encourages auto-surveillance and self-regulation. Tourists speak quietly within the *Ear of Dionysus* for fear of being heard. In this space, and others like it, such self-policing is likely based on a fear of reprisal, an anxiety about the trace of the voice echoing and betraying the intentions of the speaker. Whether in the resonant space of a concert hall or cathedral, library or hospital waiting room, the effect of reverence or deterrence produced by acoustics is coupled to the power of acoustic amplification, encouraging the monitoring of speech.

**A voice from above**

The loudspeaker employed for public address is a projection of acoustic control and manipulation. As the sound component of a multimedia spectacle (a political rally, protest, or concert), the loudspeaker enables the presentation of sound to different, separate locations by allowing acoustic information to be geographically displaced either by transmission or amplification. Unlike simple acoustic amplification, the electrified loudspeaker enables speaking from a safe distance, affording the possibility for a voice to be physically absent while remaining sonically present. Further, it makes it possible to present sound to a site separate from that which is presently sounding. Functioning this way the loudspeaker collapses distance, contributing to what McLuhan refers to as ‘the global village,’ where the technology shrinks the dimension of the space that separates us.
This affordance brings people together who are not spatially proximate, while allowing the individual speaking to maintain the safety and anonymity of bodily separation.

It is significant that the loudspeaker enables amplification of a sound for projection over a large physical distance. Prior to the invention of the loudspeaker, the amplification of sound was the domain of architectural and instrumental acoustics. Increases in the volume (amplitude) of sound were the direct result of the characteristics of physical structures and the exertion of human energy. The loudspeaker not only facilitates the extension of speech beyond the confines of interior space and interior voice, but, in the context of public address, presents music to the masses in the form of radio, concert venues, clubs and home stereos. The ability of the loudspeaker to ‘present a single source to many’ has the power to cross both physical and social borders, enabling the mobilization of both sound and music towards political ends.

The loudspeaker also affords the presentation and magnification of private sound for detailed analysis and decoding. Coupled with a microphone and augmented further by recording technology, the loudspeaker makes possible the extreme magnification of certain sounds that would otherwise go unnoticed. Ranging from phone calls that are monitored under the aegis of the Patriot Act to the echo-cardiogram that saves a life (like the branch in the woods whose crack causes us to listen for danger), these systems listen, monitor, and

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25 This aspect of the loudspeaker as communication technology has important resonances with early internet studies about chat rooms and identity that point out how people feel empowered to say things they might not say otherwise because they are protected by the mediation of the device. See Mark Poster, “Postmodern Virtualities,” in Meenakshi Gigi Durham and Douglas Kellner, *Media and Cultural Studies: Keyworks*, 2nd ed. (Wiley-Blackwell, 2005), 533.
amplify, making the smallest audible trace the subject of close listening.

Figure 12. Park Avenue, New York, NY, 1919.

The first use of a large-scale sound system for public address in the United States took place on Park Avenue in New York City in 1919 during the Victory Liberty Loan Rally, dubbed ‘Victory Way’ for the event. Along the length of the avenue, Western Electric installed one-hundred and twelve loudspeakers to amplify music and speeches encouraging the citizenry to purchase Victory Liberty Loans. A host of high-profile speakers were present, from the wives of US cabinet members to the Brigadier General Cole, all proclaiming the importance of purchasing bonds to pay for the recently-ended war to a crowd of more than ten thousand. The audience at the Victory Liberty Loan Rally was the largest such crowd that had ever been addressed by a single voice. While some of these
speakers were present at the podium, still others, including President Roosevelt and the French Foreign Secretary, delivered speeches over a radio-telephone from Washington, D.C..

The rally concluded with a pilot flying high above the crowd speaking to the audience from the cockpit of his plane. His voice addressed the audience by radio-telephone broadcasted over the loudspeakers along Park Avenue. The event was documented in an anonymous staff article in the May 1920 issue of the *Electrical Review*:

> The demonstration of the speech from a flying plane about a thousand feet above the street seemed the more difficult because the whirring of the propellers would seem to drive out any other sound. In spite of this handicap, which made the hearing of nearby voices difficult, the observer in the seaplane addressed the crowd through his wireless equipment, the radio message being received by the antennas over the concourse and transmitted to the crowd through the loud-speaking receivers. Not only could the crowd understand the flier's appeal to "Buy Bonds," but anyone who knew him could even recognize his voice, and when he announced that he would drop a shower of circulars, the crowd waited expectantly until the promised shower appeared. The flier did not leave for his headquarters until the officials had assured him that his message had been received and understood by the assembled multitude.27

The loudspeakers at the Victory Liberty Loan Rally afforded the first opportunity for persuasive rhetoric to reach such a large crowd. Making it possible for displaced politicians to speak from Washington via radio while present by voice in New York, the

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loudspeaker enabled the radio to speak their message from a distance. By announcing the pilot, the loudspeaker also directed the gaze of the crowd upwards, to where both the message and the speaker were traveling at speed through the air above.

**Postlude: Surrounded**

As the role of the loudspeaker in contemporary culture shifts from the presentation of content to the fabrication of space, the political status of the device is complicated by the refinement of its role in military-industrial applications. What was previously consumed passively as the aural equivalent of the screen is now engaging listeners as an active agent. Through tactics of saturation, immersion, and focus, the loudspeaker now delivers sound in ways that can be both overwhelming and unavoidable. With a growing role in military and advertising, the loudspeaker is becoming a powerful tool for targeted audio applications.

In his text *Terror from the Air*, Contemporary philosopher Peter Sloterdijk suggests that the political occupation of the air, the seizure of the air as a territory, begins on the twenty-second of April in 1915 when a German regiment dropped chlorine gas on French-Canadian troops in Ypres Salient.\(^\text{28}\) Sloterdijk argues that this moment – which he posits as the conceptual beginning of the twentieth century – marks a paradigm shift in warfare, ushering in modern society. No longer content with the destruction of property and the acquisition of territory, the act of war is now waged on individuals by assaulting the very air that surrounds them. Sloterdijk terms this phenomenon ‘atmoterrorism,’ and contends that modern society is increasingly defined by a break from the idea of a country as the

\(^{28}\) Peter Sloterdijk, *Terror from the Air* (Cambridge: Semiotext(e), 2009), 17.
target of war and identifies the environment that surrounds and defines the body as the contemporary field of battle.

Figure 13. US Marines outside Manuel Noriega’s Residence, Panama, 1989.

Through an engagement of the body politics of weaponized chemicals and an identification of a shift away from property and toward the environment-centered individual as the subject of war, Sloterdijk argues that the air functions as a medium that offers a psychological dichotomy between body and environment as well as between citizen as property owner and citizen as an individual representative of culture. While Sloterdijk makes no reference to sound as such, the consequences inherent in practices of acoustic warfare and a politics of the sonic are implicit in his argument. When the United States Central Intelligence Agency mobilized high-volume American Top-40 music to force Manuel Noriega out of hiding in the the Apostolic Nunciature in Panama in January 1990, the protective space of the physical building became transparent to the atmoterrorist
occupation of the air through sound. Sound created a contraction of space, affecting a
seizure of the mental space of the subject and bypassing the boundary of safety provided by
the physical structure.\textsuperscript{29}

In recent years, advancements in loudspeaker technology have shifted the dynamic
do public address even further towards the address of individuals with crowds. Devices that
enable sound to be projected over distance to target single listeners have been developed
in an effort to isolate members of protest groups, control crowds, and personalize
advertising. Technological adaptations of the loudspeaker such as LRAD (Long Range
Acoustic Device) allow police and the military to position their message directly using
highly focused arrays of speakers.\textsuperscript{30} Audio Spotlight technology enables advertisers to
deliver a message in a public space that is only heard when a listener passes through the
narrow projection field of a specialized ultrasonic loudspeaker.

The passive systems of control that have come to define the self-regulatory
strategies inherent to systems of power are beginning to shift as active strategies of
coercion exploit the effects of over-powering through amplified sound. The air-occupation
of projected sound has not only begun to dissolve the traditional boundaries of property
ownership, but may also begin to occupy the mind of the citizen.\textsuperscript{31} Air molecules

\textsuperscript{29} A similar tactic was used when the United States Attorney General Janet Reno authorized the use of highly
amplified sound recordings of Tibetan chant in a psy-op (psychological operation) to destabilize the 1993
Branch Davidian occupation in Waco, Texas.

\textsuperscript{30} Detailed accounts of the military use of sound can be found in Steve Goodman, \textit{Sonic Warfare: Sound, Affect, and
the Ecology of Fear}, 1st ed. (Cambridge: The MIT Press, 2009). Also of interest is the discussion of the use of music
by soldiers during war time in Jonathan Pieslak, \textit{Sound Targets: American Soldiers and Music in the Iraq War}, 1st

\textsuperscript{31} Several exhibitions have been organized around the theme of sound and power, see \textit{Arsenal: artists exploring the
potential of sound as a weapon} and \textit{Untitled (for resonants) and Fadings} in appendix A. Also of note is the
ctrl[space] : Rhettorics of Surveillance from Bentham to Big Brother curated by
Thomas Y. Levin at the Zentrum for Kunst Media, Karlsruhe, Germany.
surrounding the contemporary listener are increasingly saturated with sound in a way that competes for psychological space, pushing individual thought to the side. As high amplitude sound goes beyond psychological stimulus and approaches physical bodily invasion, the limits of control are tested and the boundaries of the self become both malleable and porous.
Part II
Chapter 4

Tracing Moving Circles/Forms of Forgetting

Materials derived from close listening and observation of the environment can point up the ways in which we personalize our objects and actions. Through creative mis-use of post-consumer goods, adaptive re-use of raw architectural elements, and a nostalgic assessment of dead technologies, these materials become instrumentalized, revealing the fascinating potential of memory in creative forms. I am interested in the movement, patterns, and social organization of both work and play; my work explores the acoustic signature of specific locations, exposing sound as a component of a social activity, a characteristic of architectural space, or a by-product of a geological process. I aim to trace how sound weaves its way through my creative practice by introducing a number of individual pieces that address a broad range of concerns: from ideas of space, place, and habituation in my installation practice to investigations of privacy, solitude, and interiority in my instruction-based works, and to memory, history, and forgetting in my performance pieces.

Between an expanded notion of composition and a gallery-based art practice, I have created a body of work that examines how people navigate the transition between everyday life and presentation spaces by using traditional modes of spectatorship to orient the viewer to the sonic elements of a work. In recent instruction-based works, I am increasingly interested in private listening, exploring ways to evoke sound in the mind of both the audience and the work’s participants. In my performance work, I explore the
relationship between physical gestures and psycho-acoustic phenomena such that attending becomes crucial in the act of making, the potential failure producing a tension that is tangible to the audience.

In artistic work, sound can function as both a catalyst for creation and a means for expressing concepts. For listening practices in particular, a focused attention to the sound of the world is amplified conceptually when sounds are reproduced in the imagination. Likewise, the craft of composition is a balance between sounds imagined and sounds explicitly articulated through others. In the process of considering how sound might be worked as artistic material, compositional thinking becomes a valuable tool.

In the pages that follow, a series of short synopses regarding the origin and intent of a number of works produced between 2005 and 2010 introduce the working method, practices, and theoretical concerns that inform my current output. This overview is followed by a treatment of a long-form performance work called *Forms of Forgetting*, the dissertation composition that accompanies this document. These works share the common thread of an attempt to engage the full sensorium in the production of interior listening, the development of fuller awareness of the world, and of the blurring of the boundary between composer and audience, and between environment and citizen.

**surface studies - ice: above/below (2008)**

In a new environment, the spatio-perceptual attention required for walking is functional in nature. On a street or path on which we have not yet tread, the senses focus on walking as a maintenance task, even as they gloss over the myriad sensory minutiae that
are not required for remaining upright and in motion. However, through habituation and familiarity, a shift occurs that re-situates the pragmatic needs of our perceptual awareness. With each new pass, sensory attention - no longer required for mundane patrol of the environment - begins to engage the path and its surroundings as a qualitative scene. As a working understanding of the environmental gestalt becomes automated through increased familiarity, elements present themselves along the way that can become objects of an aesthetic nature. These passing aesthetic objects might be observed as individual aesthetic elements in their own right, with intrinsic qualities, as well as unique components contributing to reception of the whole.

Habituation and familiarity with a work of art often requires ownership or access to a permanently mounted installation. In a temporary museum or gallery exhibition, the kinds of perceptual shifts associated with repeat experiences of a work are too frequently encountered only by workers of the institution or by a dedicated patron. While habituation may be difficult to achieve in these situations, it is possible to increase the sense of familiarity by simplifying or reducing the means of the large-scale forms employed to explore these effects. Simplified forms can encourage a particular trajectory through the work, easing the requirements of perceptual attention and highlighting the ‘where’ and ‘how’ of walking. In this way, the installation condition itself enables the participant to attend to the minutiae of the aesthetic objects placed along or in relation to the path.
Figure 14. Seth Cluett, *surface studies - ice: above/below*, 2008.

Figure 15. Seth Cluett, *surface studies - ice: above/below*, 2008.
*surface studies - ice: above/below* is an installation first shown at the Arts Center for the Capital Region in Troy, New York in the 2008 exhibition *Fresh Picked*. The work comprises four eight-inch square, painted wooden blocks hung in close proximity to one another just above eye-level in a horizontal line. Two blocks contain recess-mounted two-inch circular close-up photographs of shallow frozen water. Two additional blocks contain circular two-inch surface-mounted speakers. A single channel recording of the sound of ice cracking, produced by walking on the shallow frozen water in the same location documented in the photo, is discretely addressed by each speaker.

In *surface studies - ice: above/below*, the outward appearance of the work aims to prompt the spectatorial assumption that the work is a series of paintings. The intention is for the work to be approached as a progression upon entering the gallery with the viewer engaging each work one after the other, taking each in turn. As the gallery-goer nears the work, however, the sound of ice cracking is heard and it can be seen that two of the paintings contain holes, the contents of which are not visible from the distance at which the sound becomes audible. When approached linearly - from left to right or vice versa - the paintings seem like individual works. This familiar art-viewing mode, encourages the contemplation of singular pieces one after the other, separate, but also a suite. The surface anomaly presented by the photograph sunk below the surface of the painting, however, requires the movement of the head in order to be seen due to the mounting of the blocks as well as the depth and diameter of the hole. From this position, being able to view the precise detail of the each photograph, places the viewing in a listening position that yields a dramatic stereo-effect from the speakers embedded in the paintings to either side. The
attendant immersion highlights spatial characteristics of the sound material that are entirely unavailable at from any other position. The disposition of the work solicits a very particular perceptual orientation that critiques traditional optical perspective and transforms the place of the viewer into a position that facilitates ‘ideal listening.’

As the dynamic of head placement unfolds, the viewer/listener shifts from viewing the work linearly to exploring the work as a three-dimensional space. This exploration rewards active movement between the four parts rather than one-after-the-other progression of discrete points. The oscillation between the experience of being close-up and the everyday role of the observer as one who moves through space allows the work to retain its status as a wall work, while complicating this very status in its manner of engagement. By relying on the convention that paintings are approached in a relatively standardized way, the sound component of this work initiates an interplay between the visual components of the work and the movement of the viewer/audience.

**A spatial asyndeton (2009)**

In rhetoric, an asyndeton is an orational device whereby one purposefully eliminates conjunctions in a series of related sentence fragments or clauses for effect.¹ In *The Practice of Everyday Life* (1984), philosopher and sociologist Michel de Certeau mobilizes this term to illustrate the erasure of the journey from memory when one

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¹ An example is provided by Aristotle: “This is the villain among you who deceived you, who cheated you, who meant to betray you completely.” In Aristotle, *Rhetoric*, trans. W. D. Ross and W. Rhys Roberts (New York: Cosimo, 2010), 142.
conceptualizes his or her travel between two points.\(^2\) The suppression of the connective tissue in the perception of one’s spatial movement creates islands, arrivals, almost a collage of spatial memory. However, reflection, consideration, and return cause the movement-between to take on a new identity of arrival, and points of arrival become transitions between these movements. Points or positions whose initial status was once on the order of the ‘on-the-way’ (empty) become filled in, resolving into a continuum of familiarity as more and more spatial geography comes into focus. Points once marked as arrivals (content-full), become points of departure that allow exploration and experience to reveal a topography that has the potential to map the void as geography. The movement-between becomes content, and points now act as junctures, pixels, or way-posts to mark the borders.

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Figure 16. Seth Cluett, *a spatial asyndeton*, 2009.

*a spatial asyndeton* (2009), a site-specific installation mounted during the *Architectones* festival at the Saline Royale d’Arc et Senans (1775) in southeastern France, consists of a circular sculptural element comprised of large repeated loops of sisal fiber baler twine that surrounds a single offset three-inch circular mirror below a balcony from which four-channel audio is projected. The piece explores the shifts in perceptual attention and resolution that occur when the experience of the work becomes the subject of the work itself.
Figure 17. Aerial view of the Saline Royale d’Arc et Senans (1775), 2000.

Architect Claude Nicolas Ledoux’s construction of the Royal Salt Works, the first buildings in what was to become his ultimately unsuccessful and incomplete utopian ‘ideal city,’ is a strange admixture of neo-classical symmetry and proportion and rough-hewn, stone bas-relief depictions of flowing saltwater. A spatial asyndeton was installed in a square room of roughly twenty meters by twenty meters which was originally designed to house drying ovens used to evaporate water collected from the nearby salt springs. ³

On entering the room, the attendee is confronted with a large, centrally placed circle of twine on the floor, comprising fifteen turns of twine twisted in such a way as to not lie flat. Inside the circle, placed off-center, a small circular mirror faces the ceiling. A stereo

field recording of a counter-clockwise circle drawn in salt with a bare finger is projected over two paired loudspeakers from the interior balcony of the room. A constant drone comprised of four fixed sine tones is emitted by two additional paired speakers, also in the balcony and positioned to reflect sound from the room’s stone walls.

The room is entered from a door facing the hemispherical interior courtyard of the Arc et Senan complex. In order to access the next building, the attendee must walk diagonally to a door in the center of the wall to the left as they enter the space from outside. From the entrance of the building, however, the twine circle prevents access to the center of the room while not preventing access to path normally taken to the next building. The counter-clockwise movement performed by the sand recording when combined with the acoustical response to the sine tones in the room encourages the attendee to turn towards the right wall, following the direction of the sound rather than the shortest path to the door.

The four sine tone frequencies were chosen on-site to purposefully create an immersive sonic parallel to the space’s architectural layout. Specifically, within the room’s architecture, the reflection of the selected sine waves create a psychoacoustic effect of pockets of acoustic energy at each of the cardinal points of the circle. Moving around the twine, the psychoacoustic effect of the sine tones becomes a tangible trace of the structure of the building itself. The skewed mirror reflects architectural details of the room’s beamed ceiling and balcony, the view changing as one walks around the circle and redoubling visually the aural relationship between the sound and the space.
Walking the perimeter of the circle elicits a progressive awareness of points of locationally differentiated sonic arrivals at symmetrically opposite positions along the circumference. By completing the circle, the viewer/listener experiences the points put into relief against the memory of having traveled the whole path. Rather than simply suggesting a direction, the twine becomes a visual aid that marks places of change, heard and experienced but not seen.

The notion of applying rhetorical terms to the theorization of movement through space might be reduced all too easily to the status of metaphor. Rhetorical devices, however, are intended to function as explicit tools to think about how the objects of everyday language are deployed to encourage a particular reception by the listener. By providing a recipe for how one might mould the stuff of linguistic communication to facilitate particular readings, rhetoric characterizes the potential of each component sign and maps the effects or qualities that result from particular movements between those signs. The purposeful distribution of objects in architectural space by the artist can be understood to parallel the use of rhetorical devices by the orator. Movement through space positions one in direct contact with the objects out of which language fashions signs, and, in this way, helps to conceive of movement through everyday space as a form of the everyday use of language.
tracing moving circles (2010)

Whether the mark of a drawn line, the chemical imprint of light on paper, or the gathering of sound through a microphone, the mimetic act of recording - of entering traces of the world into the index of cultural and personal memory – is not itself memory, but a catalyst for imagination. Like a procession of raindrops carving away at a roof or a stream impressing itself on stone, the persistence of recorded objects seems to strive towards permanence, both claiming and eroding space and etching a form of script on the mind.

Figure 18. Seth Cluett, tracing moving circles (100 circles for the head), 2010.

tracing moving circles is a series of works that addresses the idea of indexing or archiving the objects created at the intersection of sound and movement. The different iterations in the series variously treat the interstitial territory between acting, listening, seeing, and thinking. The series title expresses the notion of tracing an object in motion highlighting the futility inherent in the act of recording, of fixing something that is ephemeral and (potentially) ineffable in physical form. In the space between original action and recorded artifact is an object that exists in the mind, transitory mental objects that support, intersect, and work against our experience.
The first pieces in the series, *glass circles* (2006) and *100 circles for the head* (2010), present listening and action as vehicles for exploring attention. *Glass circles* began as a performance work and was later produced as an unprocessed, unedited studio recording. The recording documents the sound of circular motions made by moving a pieces of glass, one each hand, against two pieces of glass laid flat on a table. Each of the four pieces of glass is amplified with a microphone sensitive to vibration. As my hands move in a circular motion, the sound of the imperfections of the glass surface creates audible patterns that repeat with each successive circle. The performance ends when it is no longer physically possible to continue the action, allowing exhaustion to create variations in an otherwise
steady simple sound-producing motion. Similarly, in 100 circles for the head, I produced a wall-mounted set of drawings and an accompanying headphone-based sound recording that documents the acoustic trace of drawing 100 circles in three different forms: one hundred single circles, two groups of fifty circles, and four groups of twenty-five circles. The work is presented over headphones alongside each of the drawings from which the recordings are made. In both of these works, the limited movement required by drawing, tracing, moving, or marking circles functions as an attempt to focus the observation of sound through a limited set of actions. While these actions may create the condition for listening that I experience as the performer of the simple action, the relationship between the action and the sound is displaced for the audience. In these works, performative listening functions as both an act of reception in the moment of production as well as a conditioning agent for future movement as observed by the audience. The force of this listening has a causal effect on my physical movements, prompting the action to strengthen or falter as my attention shifts. In the drawing the audience only has access to the temporal traces of physical action while on the headphones they hear the shifts in minute movements as the drawing unfolds. This draws attention not to causality (because the gesture appears unchanged) but to the seeming incompatibility of two opposed modalities: seeing and hearing a gestalt perceptual scene.
The next work in the series, *tracing moving circles (100 circles for the mind)* (2010), is an instructional score for gallery preparation and exhibition that treats the relationship between action and recorded trace as evidence of work. In this work, a single volunteer undertakes the performative action upon receipt of a set of instructions. The volunteer is asked to acquire a three-minute endless loop cassette and use a dictaphone cassette recorder to document the sound produced as they draw one hundred circles on one hundred small pieces of paper over a period of time not to exceed the duration of the tape. The tape is then cut into one hundred equal pieces and pinned next to the drawings in the gallery, alongside the instructions, the piece of charcoal used to draw the circles, and the empty cassette housing. In this work listening becomes an act of evocation, for the

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4 *tracing moving circles (100 circles for the mind)*, paper, charcoal, endless loop tape, pins, Commissioned by Menu for Murmur at the Chapman Gallery, curated by Ben Gwilliam and Helmut Lemke
audience as well as the volunteer it is an unrecoverable but palpable action that is set in motion by the artifacts on display.

Figure 21. Seth Cluett, *tracing moving circles (neighborhood memory)*, 2010.

In an effort to understand how familiarity with a neighborhood effects the memory of our movements, the final work in the series, *tracing moving circles (neighborhood memory)* (2010), is a wall-mounted gallery piece that treats the complex of experiences inherent to the everyday act of walking as a form of recorded information translated into
an act of viewing. In this work, each of three volunteers follows instructions asking them to circle a block in the neighborhood of the gallery thirty-three times. Using a three-minute endless loop cassette in a dictaphone cassette recorder, the volunteers are instructed to listen continuously, while making recordings at regular intervals based on predetermined cycles of counted numbers. When they are finished walking (and recording their walk), they are instructed to listen back to the fragmented recording of their experience. They then unspool the cassette and wrap the cassette tape around pins pushed into a US Geological survey map of the area surrounding the gallery. The pins are pushed into the corners that mark the block where they walked. The map and tape-marked paths are then exhibited alongside the instructions and the three empty cassette tape housings. From the dialectic of an irretrievable action (the gallery attendee being aware that the work caused the preparator to have listened) and an unplayable recording (the tape both marking the path and itself holding a form of listening), memory becomes suspended in the space of imagination, intangible but imaginable through the process of assemblage undertaken by the viewer/reader.

Between listening and action, the tracing moving circles pieces attempt to etch sound on the imagination. The series tries to unravel the knots that bind memory to the self, to explore ways of erasing, neutralizing, and smoothing out the striations created by documentary media as they write both across and against thought. What elements might be

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5 tracing moving circles (neighborhood memory), US Geological Survey Map, endless loop tape, pins, Commissioned by Non-Cochlear Sound at Diapason Gallery, curated by Seth Kim-Cohen
held on to – included in the archive of memory – and what might be written by someone else's hand, indexed without intention and before understanding?

Forms of Forgetting (2009-10)

Figure 22. Seth Cluett, forms of forgetting, 2010.
Forms of Forgetting is a fifty-five minute studio composition investigating memory and inattention as catalysts for formal development in long-duration sound work. Created out of a sequence of materials intended for performance, the piece is the culmination of a year and a half of in-situ experimentation. Part site-specific performance, part modular compositional form, this work employs techniques that explore musical memory as a component of immersive sound.

The experimentation with memory in Forms of Forgetting developed out of an obsession with the role of the repeat-sign for classical-era sonata form. Some theories of sonata form imagine the exposition repeat as an appeal to proportion, balance, and symmetry, while others emphasize the formal implications of the repeat within the harmonic structure of the work. For the listener, however, the repeat can also function as a memory aid: with the exposition material firmly embedded in the mind, the motives and themes might be remembered more clearly as they undergo changes in the development and return during the recapitulation. In an eighteenth-century society operating without the repeated listening enabled by audio recording, the repeat guards against lapses of memory as the form is worked through.

In contrast, contemporary concert listening culture often guarantees access to the work before or after the moment of performance, enabling a form of forgetting that relieves

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6 Performance view of Forms of Forgetting, Princeton University Chapel, April 2010


the audience of the burden of memory. Access to recording displaces the function of the repeat sign to technologies that excel in the re-play of any part or segment of the work: the needle of a record can be manually dropped and re-positioned at any point, the ability to repeat-one or repeat-all is built into the specification for compact-disk playback technology, and digital media players provide both of these options with an analog to the playhead and looped-repeat functionality built into their software. Listening to music has become a self-designed experience, the study and experience of form containing less urgency in the face of the irretrievable moment of performance.

How might a contemporary listener experience form? As much of contemporary everyday life consists of increasingly atomized chunks of narrative, the experience of large-scale forms is as much about forgetting as it is about remembering. The 24-hour news cycle, rss feeds (really simple syndication), micro-updates attached to social networking, playlist-shuffle listening, and the immediacy of texting and cellular communication pervasively technologize and mediate forms of communication and encourage compartmentalized memory. As letter-writing, extended phone calls and face-to-face conversations become more rarefied experiences, the dominant mode of social engagement becomes shortened and the experience of long-duration aesthetic engagement shifts in turn.

The tension between this fragmented mode of contemporary experience and the odd freezing of time presented in the social space of cultural venues – galleries, museums,

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9 If not the performance itself, then a performance by the same performer, and in almost all cases a recording of the work.
concert halls – is the subject of *Forms of Forgetting*. Sound is very effective at highlighting the kinds of shifts in perception brought about by these changing social media. Sound mediates the experience of time, and can deliver content or context or both, and this mediation has a strong effect on how time is experienced. In addition to the ability to carry legible meaning akin to text, sound can also be physical on the order of architecture. In *Forms of Forgetting*, I have tried to explore how this physicality is experienced in time and mediated by elements that can be remembered or forgotten.

The work begins with a physical gesture that allows the audience to observe a causal relationship between the performer and the devices used to make sound. I have developed a technique that uses changes in the physical volume of air in the cavity of my mouth to generate feedback at varying frequencies. By changing the distance of the electret condenser microphone in a variable-speed cassette-dictaphone while at the same time altering the size and shape of my mouth, I am able to (tenuously) produce and control a frequency that approaches a sinusoidal wave in timbre. I use the dictaphone to simultaneously record and perform these sounds, allowing for playback at different speeds later in the piece. This physical gesture is intended to function as a touchstone for the audience; the sounds and their sources are visible in order to build expectation and stability for the audience experience of my role as the performer.

As this feedback gesture is performed, two sine tones tuned to resonant frequencies of the performance space and two tuned to frequencies near those of the feedback produced by my mouth slowly increase in volume over the first twelve minutes of the piece. This slow crescendo occurs below what psycho-physicists call the just-noticeable-
difference for the perception of change in dynamics. As the feedback gesture wanes, the dynamics of the two types of tones begin to converge and the interaction between their frequencies and my gesture with the tape recorder becomes a new focus of attention. The mixture of these tones produces constructive and destructive interference of the waves, creating a complex sound result from simple materials.

In this work, the performance gestures are consciously minimal; my relative lack of movement in tandem with subtle (observable) changes in sound, is intended to acclimate the audience to the condition that no one part of the perceptual scene requires direct, active observation to track, while still providing a performance viewing experience that is rewarding. It is necessary for the experience of the form however, that the physical presence of the performer be completely unwavering. This stability allows the audience to re-attend while simultaneously encouraging in-attention by building trust. By breaking the usually obligatory attentive model of audience listening allows the form of the piece can unfold, elements of change function as points of attention affording the listener an opportunity to become lost in the form. Each new moment of refocused attention then serves to re-contextualize what has been forgotten, rather than define what will come later.

Following the opening gestures, the main structural aspect at work for the remainder of the piece is a technique I think of as a near-mimetic repeat. During the performance, fragments of the opening gesture return multiple times. The manner of this return is not verbatim repetition, but rather a repeat whose characteristic components

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11 The difference threshold or just-noticeable-difference (also referred to as the j.n.d.) is expressed by the Weber-Fechner Law which calculates the minimum amount by which a stimulus must change to produce a noticeable change in sensory experience for the sensing subject.
return but in the guise of a new structure. By abstracting the elements of the opening gesture, I am able to construct a performance and timbral vocabulary that is coherent across the work without feeling static to the listener. These elements bear a familial resemblance to the opening gesture while not functioning as a literal copy.

The first of these near-mimetic repeats works with the rhythmic memory of the opening gestures. Though rhythm is not the focus of the opening, the material that follows the opening draws on the subtle rhythm of the psycho-acoustic beating caused by the destructive interference between the feedback and computer generated sine tones. By analyzing recordings of earlier performances, I extracted perceptual traits of the acoustic beating patterns from the start of the piece. Marking the temporal position of the peaks between fluctuating beats, I created fixed studio material that exhibited similar rhythmic characteristics. I used a series of recorded percussive sounds derived from these analyses during the performance to transition from the opening texture of smooth sine tone material to a texture with more overt surface rhythmic activity. Because the surface texture is derived from the rhythmic attributes of the material that came before, the near-repeat appears as a seamless and striking inverse déjà-vu, a feeling of having forgotten why that material felt familiar.

The next repeat uses the melodic intervals produced between the feedback tones in order to provide the harmonic intervals between a set of tuned springs that are played like a hurdy-gurdy live in the concert space. Because the opening sine tones are pure and the timbre of the springs is complex and saturated with overtones, the audible relationship between the two sounds is not overt. The feedback produced at the start of the piece
arpeggiates through an overtone series built on 175Hz (F below middle C) and is most stable between the second and third partials. In order to have a timbrally rich sound built on these two specific frequencies, I built an instrument consisting of a wooden cigar box fitted with tuned springs amplified by piezo-ceramic microphones. The springs are played with a hand-held motor fitted with a piece of flexible nylon that strikes the springs while the motor turns. The box creates a resonant chamber for the sound of the two springs adding reverberation to the sound. In performance, the complex spectra of the springs is used to transition away from the preceding rhythmic material while also freeing up the computer-generated oscillators to slowly glissando throughout the remaining duration of the piece. The springs have the additional benefit of masking the beginning of the sine waves’ glissando and as preparing the ending of the work while preventing the seam between sections from being overly clear.

This function of masking allows for other processes to begin undetected as well. During the spring section of the performance, the dictaphone is repurposed to record the sound of the interaction between the spring and the sine wave for roughly seven minutes. After this time has elapsed, the tape is rewound and played back at half speed, with a gradual crescendo from silence. The level of the dictaphone is raised until the amplitude matches that of the live springs. Using my free hand, the volume of the live springs is lowered, leaving only the spring and sine tone dictaphone recording and the glissando sine tone glissando. When the live springs are silent, I lift the motor from the springs without moving my hand for more than a minute so as not to cue the change for the audience.
After this transition, the final near-mimetic repeat draws the piece to a close. By conceptualizing the melodic intervals of the opening gesture as harmonic intervals, the closing gesture employs these intervals as a chord played live by a reed organ called a shruti-box. A North Indian instrument, the shruti-box, consists of an octave of reeds played by a hand-pumped bellows. For two minutes, I pump the bellows too slowly to produce sound, to cue the audience to listen intently for the texture to change. Over the course of the final ten minutes of the piece, the volume of the Dictaphone is lowered while the shruti-box gets louder. During this time, I begin quietly sing a sine tone below the volume of the shruti-box while slowly removing all of the electronically amplified sound material. As the piece draws to a close, the sound of the reed-based chord and the sound of my voice reduce the dimension of the soundfield from the immersive space created by the amplified sound to the bare acoustic sounds reminiscent of the intimacy and physicality of the opening gesture.

The cross-connections in *Forms of Forgetting* are intended to produce a slow progression of gestures that give the illusion of stillness amidst a texture of continually developing material. Over the duration of the work, the constructed sound world becomes environmental rather than temporal, proceeding slowly enough that it might be explored without the anxiety that it will move away too quickly. Like so much of my work, I am interested in providing the audience with material that allows for an active agency of perception and that affords the ability to move through sound autonomously. Whether the work is gallery-based, conceptual, or created for a concert hall, I am interested in viewing simple, everyday actions at extreme magnification, acknowledging failure by amplifying
impossible tasks, and exploring the role of memory in forms that respect the contract between the composer, performer, and listener.
APPENDIX A

Sound as Curatorial Theme 1954-present

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<td><strong>Festivals:</strong></td>
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<tr>
<td>Audio Art Festival Poland</td>
<td>1993-2008</td>
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<tr>
<td>WRO &quot;sound basis visual arts festival&quot;</td>
<td>89, 90, 91, 93, 97, 99</td>
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<tr>
<td>Zeppelin Sound Art Festival Barcelona</td>
<td>1999-2009</td>
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<tr>
<td>Feria de Arte Sonoro</td>
<td>unknown</td>
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