California Institute of the Arts

Thrashing Acousmatic: Revitalizing Bodies in Electronic Performance

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Abstract

The following thesis explores strategies for physical engagement in electronic music performance via select pieces of my own work. Through a brief historical analysis, I discuss how these strategies are necessitated by a common lack of physicality in electronic music. This lack is historically rooted in the genre by a technological condition called the "acousmatic situation." The primary goals of the works in this thesis are to diminish said acousmatic situation and to engage and revitalize the body in electronic music performance with the aid of the very medium that poses the original problem – technology. I accomplish these goals by conforming my works to an aesthetic concept of my own creation called *Thrashing Acousmatic* in the context of each strategy that I explore. Via these strategies and the concept of Thrashing Acousmatic, I conclude that engaging the body in electronic music performance has the potential to not only make performances more interesting for both audiences and performers but also to extend the boundaries of the definition of music.

This thesis is arranged in chapters, each devoted to a discussion of a particular strategy via a number of works I created during my time at CalArts. Chapter 1, "Introduction," introduces and discusses in depth the problem of the lack of physicality, as well as the acousmatic situation and Thrashing Acousmatic. Chapter 2, "Activating Bodies," discusses a strategy for actively engaging the body in electronic performance. Chapter 3, "Deactivating Bodies," examines a strategy rooted in conceptual art for bringing attention to the importance of the body by removing its active presence. Chapter 4, "Extending Bodies," investigates a strategy for augmenting the faculties of the body with the aid of technology. Chapter 5, "Conclusion – Multiplying Bodies," concludes the thesis with the discussion of a strategy that incorporates all the previous strategies. Each chapter includes a relevant historical discussion, an in-depth analysis of my works, and an overview of the technology utilized in each piece.

Acknowledgments

I would like to thank my advisor Spencer Salazar without whom this written thesis would not be possible. I would also like to thank all my professors and fellow students within and beyond the MTIID program at CalArts for all of their instruction, guidance, teachings, and friendship, namely: Ajay Kapur, Owen Vallis, Jordan Hochenbaum, Colin Honigman, Meason Wiley, Eric Heep, Rodrigo Sena, Zach Crumrine, Charlie Burgin, J.P. Yepez, Martin Velez, Jon Almaraz, Eve LaFountain, Manuela De Laborde, Mike Formanski, Marilu Donovan, Kira Blazek, Danni Tsuboi, Zac Traeger, Olivia Warner, Ron Athey, Joel Kyack, Maggie Nelson, Harry Dodge, Tom Jennings, Robert Clendenen, John Baffa, Clay Chaplin, Michael Darling, I Nyoman Wenten, and my family. Matur Suksma kepada Bali, Pulau Dewata Penuh Berkah.

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Chapter 1

Introduction

This problem has been reformulated again and again in various ways yet never solved. For the entire problem is just one window into the tension (...) between the human body and the machine. (...) It cannot be solved in the sense of a solution that can make a problem disappear. It can only be experienced in various ways. (...) Artists who use machines must do so critically; not celebrating technology but questioning and probing it, examining its problematic nature, illuminating or clarifying tensions between technology and the body, and thus offering the kinds of insights only art can provide concerning the nature of life. (Ostertag 2002)

1.1 Performance of Electronic Music

In a 1938 manifesto speech titled, "The Future of Music: Credo," John Cage delivered several predictions on the importance of electronics in the forthcoming art of the 20th century: "The special function of electrical instruments will be to provide complete control of the overtone structure of tones (as opposed to noises) and to make these tones available in any frequency, amplitude, and duration. Which will make available for musical purposes any and all sounds that can be heard" (Cage 2010). Though Cage's sense of limitless sonic possibilities may be one of the most attractive qualities of the field of electronic music, the sphere of performance is accompanied by a number of interrelated complications, which put forth a number of questions: What is live electronic music? As an audience member, how can I tell this music is in fact being performed or is "live"?

Electronic music or electroacoustic music is "a music heard through loudspeakers or sound made with the help of electronic means," including but not limited to computers, synthesizers, and various other devices (Emmerson 2007). Such performances can take many forms and appearances spanning several different styles and genres of music. The key common

feature of these performances is the nature of the electronic instruments used and the desired end to achieve sounds that otherwise would not be possible without hardware electronics or computers. If it is this easy to define electronic music, then how do we define what is live and what is not? Or, at what point can we as listeners discern whether or not the music is live? Is the presence of the audience all that is necessary to delineate when or when not a piece of music is live? Early tape music concerts consisted of the composer pressing play on a tape reel of prerecorded music – is this as equally "live" as a virtuosic performance by a celebrated violinist? How can we understand performance of electronic music based on what we know of performance of traditional acoustic instruments?

Based on the performance of acoustic instruments, many listeners hold a common preconception of what music performance should be. Within a performance using traditional acoustic instruments, both the audience and performer are able to visually and aurally perceive a direct connection between input and output, the physical actions of the performer, and the results. For centuries, musicians and scholars have been working to establish the aesthetics of the relationship between this input action and the resulting sonic output. "The music is a result of the properties of the instrument and the skills of the player. The listener has a sense of what goes on, even if they do not play any instrument themselves" (Henke 2007). Additionally, "in traditional instrumental playing, every nuance, every small control variation or modulation… has to be addressed physically by the performer" (Collins and Escrivan 2007). In other words, the "proper" way to perform a traditional acoustic instrument is well defined and commonly appreciated, and the body of the performer is visibly engaged and present.

Electronic musical instruments, on the other hand, lack the same amount of history as acoustic instruments. Additionally, these instruments came into being during the mid 20th century, a period marked by aesthetic upheaval and artistic experimentation, reinforcing the experimental or non-traditional nature of the genre. Furthermore, the performance actions involved in many electronic instruments are often less physical – both in the sense that it is less gratifying for the performer and less visible to the audience – compared to that of an acoustic instrument. In other words, not only do electronic instruments lack a rigid historical prescription of how they should be performed, but also notions of physicality, specifically the questionable role of the body, complicate the appreciation of electronic instrument performance.

With the aforementioned challenges, the problematic nature of electronic performance is well known to practitioners and enthusiasts and has been an issue addressed by artists and

engineers alike. A relevant question for this thesis is: "Is this live electronic performance compelling? Why or why not?" The philosophical question of "is this music live?" is only important to this thesis insomuch as it helps us understand why or why not a performance is compelling. In other words, the philosophical question of "is this live?" is related to questions of physicality, and answering these questions can benefit a compelling performance.

An even more important question for this thesis is: what are techniques involving physicality available to the artist to help successfully realize a performance of electronic music that achieves not only the sonic goals but also a compelling presentation? In the next subsection, this relationship between electronic sound and physicality will be examined via the "acousmatic situation."

1.2   The Acousmastic Situation

In Michel Chion's _Guide to Sound Objects_, Chion paraphrases the ideas set about by Pierre Schaeffer, a seminal pioneer and composer of tape and electronic music, in his original document _Traité des Objets Musicaux_. Chion explains the acousmatic situation thusly: "The acousmatic situation changes the way we hear. By isolating the sound from the 'audiovisual complex' to which it initially belonged, it creates favorable conditions for _reduced listening_ which concentrates on the sound for its own sake, as _sound object_, independently of its causes or its meaning" (Chion and Schaeffer 1983).

The _audible_ sound of electronic instruments is intrinsically divorced from its _visible_ source or cause; the sound of a tree falling is divorced from its cause due to the absence of the falling tree in performance. Pierre Schaeffer saw this divorce as aesthetically beneficial to the reception of electronic music and coined the word acousmatic to describe this situation. In fact, the word acousmatic "described in Greek a sect of the disciples of Pythagoras who were said to follow a form of teaching where the Master spoke to them hidden behind a screen." The acousmatic situation also describes the precise problem I am trying to address – the sound of the falling tree is separated not only from its visible source but also from the performance, particularly, from the body of the performer (and examining this separation is beneficial to a compelling performance).

The abstraction from sources and playing beings … is implicit to music played using machines, with it sounds being generated algorithmically or as a result of sampling, or in a combination of both. Even in electronic music involving live performance, the heard qualities are physically unbound from the performer's actions, and the link's composition may often escape even the informed listener. Electronic music could thus… be thought of as paradigmatically acousmatic – its corporeality being opaque or even nonexistent to the listener, without the need for an abstraction from its live production. (Peters, Eckel, and Dorschel 2012)

In the above quote, the author Deniz Peters argues electronic music is paradigmatically acousmatic; the falling tree need not be present in order for the listener to abstract the sound from its source. If we take into account what we understand of performance of traditional instruments, how do we insert the tree into the performance? Electronic performers can link the sound of the tree falling to some sort of physical action in performance though it is far from the cause of the actual sound.

Figure 1 John Cage, David Tudor, and Merce Cunningham Dance Co. - *Variations V* (1965)

John Cage understood this complication and setback of early electronic music all too well, best exemplified in the following anecdote:

"I was at a concert of electronic music in Cologne, and I noticed that even though it was the most recent electronic music, the audience was all falling asleep. No matter how interesting the music was, the audience couldn't stay awake. That was because the music was coming out of loudspeakers. Then, in 1958 – the Town Hall program of mine – we were rehearsing the Williams Mix, which is not an uninteresting piece, and the piano tuner came in to tune the piano. Everyone's attention went away from the Williams Mix to the piano tuner because he was live." (Holmes 2002).

In this brief passage, Cage makes an observation about audience expectations for music performance: our electronic equipment and technology alone is not always enough to engender curiosity and attention – music requires physical evidence of a human presence, a spark of liveliness. In the works that followed *Williams Mix,* Cage put this understanding into action, incorporating live electronics into performance, thereby becoming an innovator in the field (see Figure 1).

The acousmatic situation illustrates that there is a conceptual disconnect between an electronic sound and its source. Specifically, the acousmatic situation demonstrates that the pervasive tendency and shortcoming to exclude and neglect the body from performance is historically embedded in electronic music – it has demonstrated that the body is not always necessary in electronic media. Acknowledgement of this neglect or absence presents opportunities for play, reinvention, disruption, creativity, clarity, and exploration. With this thesis and my work, I seek to negotiate the acousmatic situation: to be aware of, redress, and reformulate the tension between body, sound, and machine as a strategic and aesthetic maneuver for vitality in electronic performance via a concept of my own creation called *Thrashing Acousmatic.*

1.2.1   Revitalizing the Body (and Redefining Music) via Thrashing Acousmatic

In a book titled <u>The Theater and its Double (1938)</u>, avant-garde playwright and theorist Antonin Artaud presented a technique for theatrical arts, called Theater of Cruelty, "in order to make the theater vital for modern audiences." Artaud's Cruelty means something other than the

conventional definition of cruelty – shocking the audience, speaking directly to the subconscious, and awakening audiences into higher states of reception. The projects found within this thesis, as implied by the thesis title, employ a particular stylistic choice and aesthetic flair for engaging the body similar to Artaud's Theater of Cruelty – violent, jarring, shocking, and raw. It is my hope to use this technique as a means to engage and connect with audiences on a more direct, and perhaps higher, level. I wish to revitalize the body in this Artaudian manner in order to mitigate or diminish the acousmatic situation and make the art itself more vital; hence, the title "Thrashing Acousmatic." Furthermore, this aspect of Cruelty pervades the objects, instruments, and interfaces I have made for all the projects in discussion in the pages that follow. My objects are raw, made hastily and impulsively with readily available materials as a direct line to an uninterrupted and honest form of expression – I wish to penetrate sleek surfaces by omitting them altogether. Beautiful objects obscure the meaning that resides within them. The truth is laid bare via unpolished malformations. (Nelson 2011)

In this thesis, I believe this aspect of Artaudian Cruelty via Thrashing Acousmatic is primarily a means to an end in order to revitalize the body and thereby redress the tensions between three elements – body, sound, and machine. Each of these elements inform and renegotiate each another via said tensions. These tensions (as represented by arrows in the diagram of Figure 2) exist as energetic sources representing a new personal definition of music for this thesis project – a definition that does not confine itself to only the aural sphere but also includes movement, technology, space, and everything else that is preceptible within the sphere of the work. Thrashing Acousmatic not only seeks to reenergize bodies, but also to destroy the boundaries of words and ideas in order to open the mind to new concepts of music and art. Through revitalizing the body, and through Thrashing Acousmatic, I also hope to "redefine" my music. Throughout this thesis, I will use the term "Thrashing Acousmatic" as shorthand to refer to one or more of many goals of this thesis: diminishing the acousmatic situation, shocking audiences, or breaking definitional boundaries of music, and furthermore, doing so with a particular aesthetic flair.
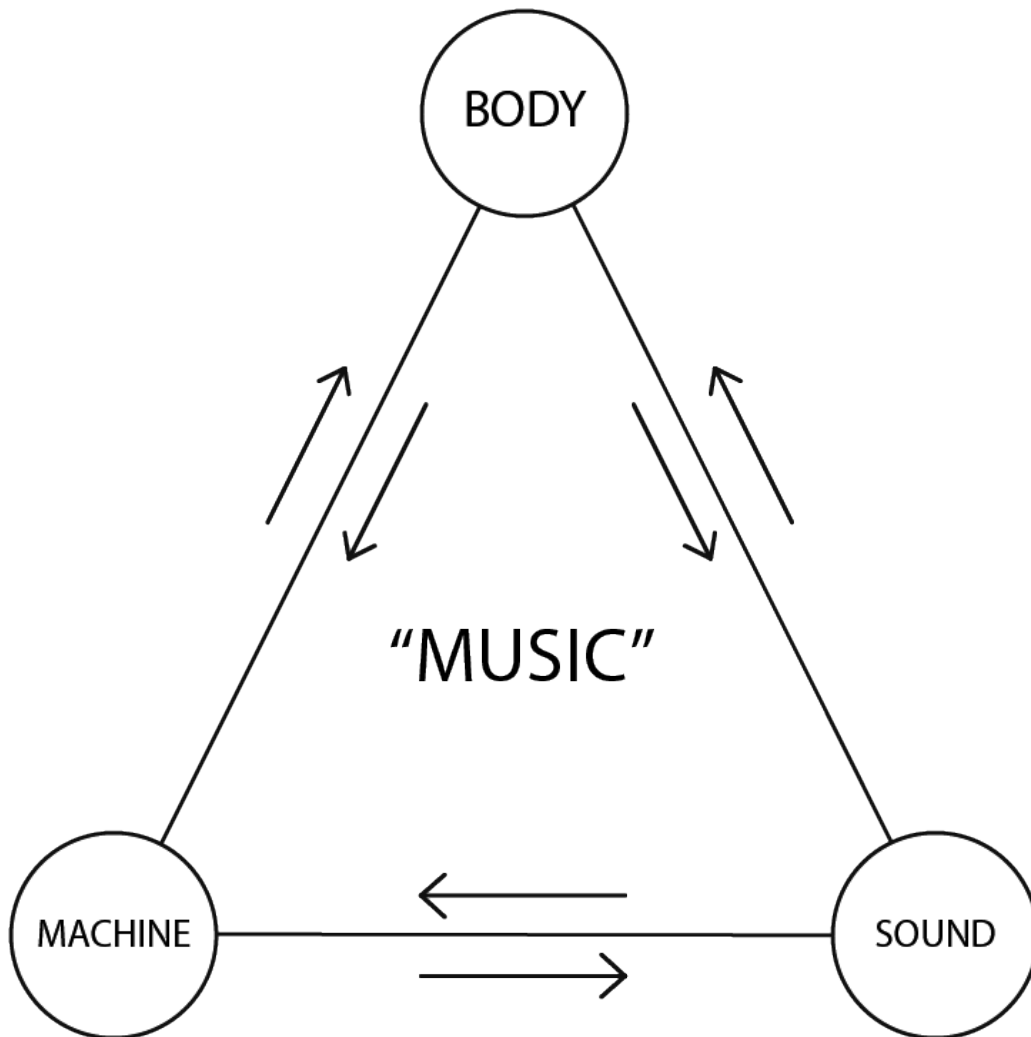
Figure 2 Conceptual Diagram of Thrashing Acousmatic

1.3 Objectives

This thesis presents several of my personal projects as a means to present and analyze some general strategies for engaging and revitalizing the body of the performer in the context of electronic art. The beneficial results and the aesthetic implications of engaging the body are of central importance to this thesis. Additionally, the role of technology within and in relation to each work is discussed in order to elucidate the ways in which it can help remediate the very problems it poses. Lastly, this thesis also serves as documentation of some technical specifications.

1.4 Outline

This thesis is divided into sections, each devoted to a particular type of strategy, wherein each strategy is discussed via select pieces of my work. Each chapter also discusses: relevant historical background, the results of each conceptual technique, and the technology utilized in each work. Chapter 2 explores the strategy of Activating Bodies. Chapter 3 explores the strategy of Deactivating Bodies. Chapter 4 explores the strategy of Extending Bodies. Chapter 5 concludes the thesis with reflections on the work and, additionally, explores a complex multifaceted strategy called Multiplying Bodies.

Chapter 2

Activating Bodies

To make a sound – be it with one's body, or with a traditional instrument – retains a direct, visible, audible, and tactile link between the human making it and the temporal, timbral, and spatial organization of the sound made. In listening to sound made and organized in this bodily way, a listener, even if not directly involved in the making herself, partakes in this game of contact, articulation, and withdrawal. One facet of the game is that one can hear something of the human making the sound in the sound, or, to appeal to Roland Barthes's frequently quoted notion of 'grain': one can hear the musician's body in the music. – Deniz Peters

The strategy for electronic performance called *Activating Bodies*, a term of my own creation, entails a form of performance in which the movement, effort, and exertion of the performer's body are visibly, obviously, and meaningfully connected to the generation of sound, reformulating the tension between the body and technology. Typical performance paradigms of electronic instruments – wherein practically invisible gestures, such as key pressing and knob turning, control massive amounts of full spectrum sound, while the performers hide behind laptop screens or hulk inertly over tables of electronics – do not provide adequate activation of the body. Activated Bodies seek to access the same type of immediacy and direct connection available in traditional acoustic instruments (thereby activating the body) in the realm of electronic sound, all the while not mimicking acoustic instrument paradigms of sound generation.

Activated Bodies promote a diminishment of the acousmatic situation. The foremost concern of this strategy is the reassertion of the body into electronic performance. Additionally, and to no insignificant extent, Activated Bodies are facilitated and enabled by the very phenomenon that complicates them – technology. This paradoxical entanglement of the body and technology is a feature and mainstay of this strategy (and the other strategies to follow).

Beginning with an examination of the historical context, as well as influences and inspirations to the idea of Activated Bodies, this chapter thoroughly investigates the strategy itself as well as the role of technology via a number of my personal projects.

2.1   Background

Activated Bodies are historically rooted in several different traditions of performance art and punk/rock/noise music. The roots of performance art can be traced back to at least as early as the Dada and Fluxus art movements. At the height of the Fluxus era in the 1960s and 70s, experimental art exploded in a profusion of interdisciplinary forms, with artists such as Yoko Ono, Joseph Beuys, and Nam June Paik toting the flagship banner of the relatively young medium of performance art. The historical works I would like to focus on in this background section, however, stem from two parallel Japanese movements, which can perhaps be considered Eastern equivalents (arguably superiors) of Fluxus and Dada – Group Ongaku and Gutai – because of their close relationship to materiality and the body.

At its prominence from 1958-1962, Group Ongaku "sought to unhinge the body as a conscious vehicle to uncover creative potential for making music," and "musical work was seen as a form of anthropological 'field work' founded on noise and the interpenetration of body and objects" (LaBelle 2006). In their piece *Automatism* (1960), this interpenetration is exemplified as the group sets forth on an improvisational, action-oriented exploration of sound using household objects with recklessness and true rock'n'roll fervor. Similarly, Gutai, founded in 1954 by Jiro Yoshihara, is "[marked by] a cultivation of physical aggression in which works of art were produced by forcing the body into contact with a material objects, as in Murakami Saburo's *Many Screens of Paper* (1956)," a performance in which the artist hurled their body, ripping through a consecutive series of paper screens (see Figure 3) (LaBelle 2006). Activated Bodies draws from these movements their relation to both the body and physical objects – both elements are poised in a collision-based relationship to each other for the generation of sound and music. Physical activity, often aggressive in nature, is necessary in order to "unlock" the hidden potential of the material things involved. Later in this chapter we will see the role technology plays in assisting, augmenting, or supplementing this act of unlocking.

Figure 3 Murakami Saburo - *Many Screens of Paper* **(1965)**

Activated Bodies also borrows from comparably more impulsive or primal rock music subgenres of punk and noise. Though the genres are wrought with complexities, allow me to make a [potentially unnerving] generalization: in these styles, instrumental skill is less important than how the performer's body speaks with the instruments. Good punks can say more with how they stand, move, and hold the guitar than how they play it. Furthermore, both punks and noise musicians brought into the world of music an unprecedented level of physical intensity with their full-body thrashing and equipment destroying antics. This physical intensity often manifests itself in the form of violent stage antics – adrenaline-fueled byproducts of the performances, rather than intentional features – and is of particular interest to my Activated Bodies projects. For example, grunge idiot-jesus Kurt Cobain would often conclude concerts by smashing his guitar or, on rare occasion, "drum diving," a reckless act of launching his body airborne and down onto the drum set (see Figure 4). Impulsive, drug-addled stage antics such as these were never preplanned nor were they regarded or framed as "performance art." These actions, however, bear many similarities to all kinds of highly regarded works of performance, such as Nam June Paik's *One for Violin (1962)*, wherein the performer slowly raises a violin over his head and smashes it against a tabletop. *"The single gesture is harnessed and refined so as to uncover its*

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inherent intensity, banality, and minute detail" (LaBelle 2006). In this manner, Activated Bodies in part seeks to recontextualize the impulsive rock act as germane body movement of performance art.

In Activated Bodies I seek to explore the techniques of these kinds of works, all the while making use of electronic sound. In all of the above instances, meaningful bodily gesture, ordinarily understood as non-musical action, becomes inextricably tied to music. The idea of gesture as a liminal area of potentially both musical and non-musical action is crucial to Activated Bodies, as these pieces I will discuss critically examine the relationship between body and machine, movement and music, sound and vision.

Figure 4 Kurt Cobain of Nirvana "drum diving" mid-concert (circa 1992)

2.2   Brass Orchids

Brass Orchids is a weeklong solo performance installation emphasizing the role of the body in electronic music through the use of low-budget, fast-iteration electronics and collision-oriented body movement. Performances are privately staged and recorded, then publicly displayed the following day in the form of high definition video and audio. The installation culminates in a final public performance with audience documentation displayed in the days following.

In a staging of *Brass Orchids* in the CalArts WaveCave on February 28 – March 7, 2016, I served as the performer and staged a total of three performances, titled *Performance #1, Performance #2,* and *Performance #3.* Each piece is numbered in order of their execution and should be regarded as different movements within a larger piece. In *Performance #1,* the control circuit of an analog synthesizer was exposed and extended onto the gallery wall and my back. This setup allowed me to affect the sound by directly contacting and "rubbing" my back against the wall in various manners. In *Performance #2,* chairs, metal chains, electric razors, and various objects were outfitted with small contact microphones to act as triggers for electronic sound. I generated audio by interacting with the objects and colliding them into each other and my body. In *Performance #3,* I "dive-bombed" into a pile of recyclable materials and chairs while wearing an amplified electric guitar, thereby generating audio and noise as a byproduct of the massive collision.

In all of these performances, I intended to explore the strategy of Activating Bodies. On the most base level, each piece is set up so that no sound generation is possible without physical action from the performer that is all of direct, visible, and obvious. In *Performance #1,* the necessity of the body is highlighted by its pronounced visible presence – the performer's body is the largest entity onscreen. Contortions of the torso along the gallery wall, a type of physical action more visible than ordinary synthesizer or instrumental performance, were the predominant method of affecting the sonic qualities. In *Performance #2,* a similar sized scale of action and gesture is utilized – pushing the body and objects into each other. The performer's body is eventually so immersed in the sound-generating objects, that the body becomes literally entangled in a web of chair legs and audio cables. *Performance #3* pushes this idea of visibility to the most extreme limit, with the sound being generated by a single, large and sweeping gesture of hurling the body headlong into the air.
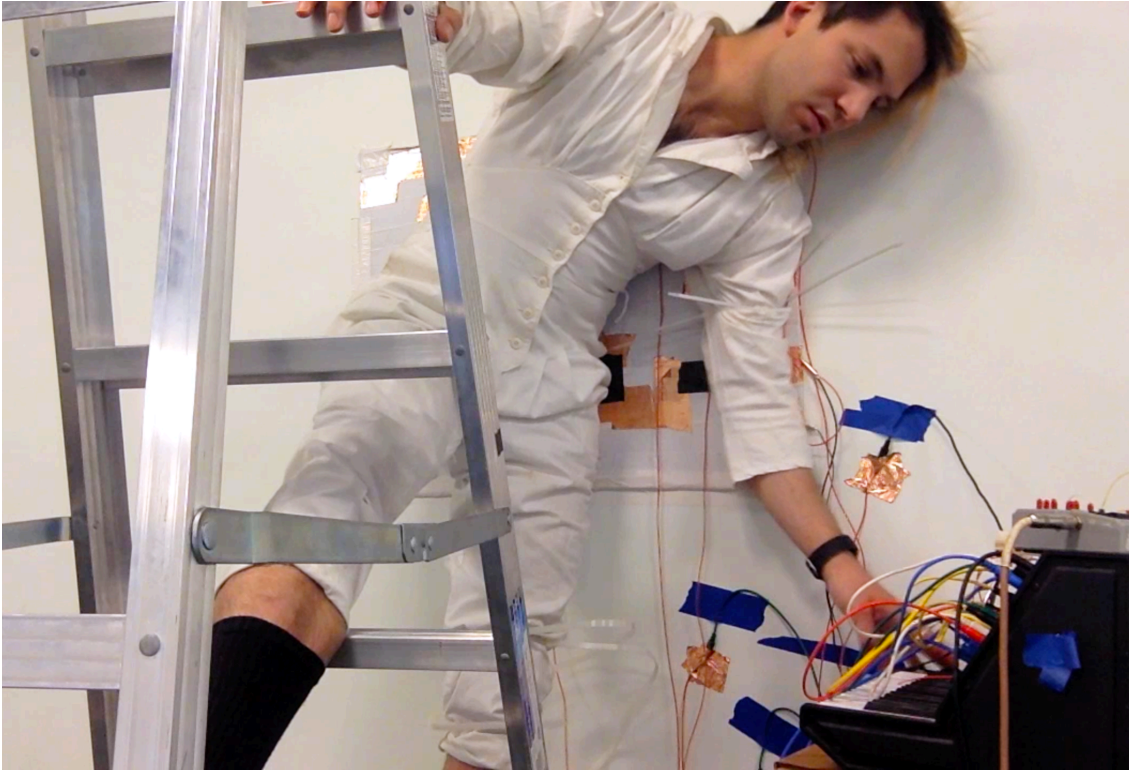
Figure 5 *Brass Orchids - Performance #1* **(2016)**

2.2.1 Conceptual Techniques

In this section I will discuss the conceptual techniques of *Brass Orchids* in more detail, elucidating the practical considerations for each piece and how they fit into the larger theme or idea of Activated Bodies. I will discuss in detail several main points of each piece and criteria for how they qualify as Activated Bodies: how they affect sound by directly involving the body, how they do so in a way that does not emulate traditional instrumental performance, how it creates music that could not otherwise be easily generated, and why or how it is compelling. Additionally, I will address some further implications of the pieces that go beyond the immediate surface of the work.

In *Performance #1,* the performer triggered and modulated analog synthesizer audio by contacting part of the synthesizer circuit on the wall with another part of the circuit extended onto the performer's back. This combination of wall/back confined both the performer's movements and complicated the means by which the performer could affect sound, forcing the

performer's movements into atypical bodily gestures and promoting a chaotic and mostly uncontrollable means of sound generation (see Figure 5). A tall metal ladder was introduced as a stand for the performer to add height and visually divide the vertical plane, both further complicating bodily movement and adding more opportunities for different postures. In traditional instrumental performance, the gaze of the viewer is usually focused on a small intersection – the area where the instrumentalist's body directly interacts with the instrument. Here, however, the musical apparatus is mostly obscured by the body of the performer, directing the viewer's focus to the body as a whole, the overarching movements and contorted quasi-dances of the performer.

The control setup of wall/back creates an area of play where there is a lack of fine gestures for musical control with intentional results. Unable to see exactly how their back interacts with the controller-wall, the best the performer can do is guess, approximate, explore, and retry different combinations of movements. The movement of the performer controls the sound; the resulting sounds of the movements re-inform the movements of the performer. Movement is wed to musical gesture; that is, nearly all movement within this piece generates sound, is of musical significance, and signifies to the viewer that musical action is occurring. Musical gesture is typically presumed to consist of considered and controlled movements with intentional results, but here we can witness an opportunity for breaking from intentionality. This break is compounded by the (intentional) potential for randomness in electronics. These control areas of un-intentionality give unto a special generation of sound and music that could not be created under normal circumstances.

"Although speech and gesture depend on movement as a necessary condition, they nonetheless transcend motility and move us into a semantic space that is also a pragmatic, intersubjective, intercorporeal space. . . . Although . . . the body 'lends itself' to gesture, gesture is never a mere motor phenomenon; it draws the body into psychological and communicative orders defined by their own pragmatic rules" (Schacher 2012).

In light of Schacher's words, as the unusual movements and the unintentional sonic results feed into, inform, guide, and prompt each other, a special and compelling situation for improvisatory performance is created – both movement and sound emerge into a singular whole greater than the sum of its parts. This unity of movement and sound is a recurrent theme in all of my pieces

for Activated Bodies and serves as a fundamental axiom in the concept of Thrashing Acousmatic.

In *Performance #2,* the performer generated audio by directly engaging the body with a large suite of objects outfitted with contact microphones – chairs, chains, audio cables, etc. By interacting with the objects through both intended and alternative uses, various forms of contact, impact, and collision were initiated, creating percussive noise, and triggering computer generated audio via the contact mics. This performance builds from the techniques of *Performance #1*, using body contact as the primary catalyst for sound generation, and additionally incorporates more visible and apparent interactions with physical objects. These interactions, however, do not emulate the use of traditional instruments. Similar to the work of the previously discussed Japanese movements, Ongaku and Gutai, the objects are thoroughly explored in an attempt to "unlock" musical potential. For example, the chairs are initially used as intended – for seats. Then, the performer begins swaying while seated, eventually lifting the legs of the chairs off the ground, creating percussive sound and generating contact to be amplified by the microphones. The full gamut of interaction is explored until finally the performer makes their way to a lying position, buried underneath a pile of chairs and other objects on the gallery floor (see Figure 6).

Again, as similarly seen in *Performance #1,* the unique situations and combinations that occur between object, body, and sound as a reimagined whole are of central significance to this piece. No single component – object, body, or sound – could stand on its own or be effective without the other. I believe this speaks to the interconnected nature of sensory and aesthetic experience within this piece (and perhaps on a more general, broader level):

"There is vision, touch, when a certain visible, a certain tangible, turns back upon the whole of the visible, the whole of the tangible, of which it is a part, or when suddenly it finds itself surrounded by them, or when between it and them, and through their commerce, is formed a Visibility, a Tangible in itself, which belong properly neither to the body qua fact nor to the world qua fact— as upon two mirrors facing one another where two indefinite series of images set in one another arise which belong really to neither of the two surfaces, since each is only the rejoinder of the other, and which therefore form a couple, a couple more real than either of them" (Merleau-Ponty 1968).

To echo the words of Merleau-Ponty, sound and movement, object and body, are engaged in a mirror-world infinite tango of information and exchange, call and answer, exposition and recapitulation. The "music," the vivacious aesthetic force, belongs to no single mode of perception or performance; rather it belongs to all and none of the modes simultaneously. To clarify, in these pieces, my definition of music is not strictly confined to the aural world; it is a cumulative effect of sound, movement, space, and everything that is perceptible. This blurring of boundaries is paramount to the idea of Thrashing Acousmatic, which seeks to expand concepts of a music that is all-inclusive in nature.

Figure 6 *Brass Orchids - Performance #2* **(2016)**
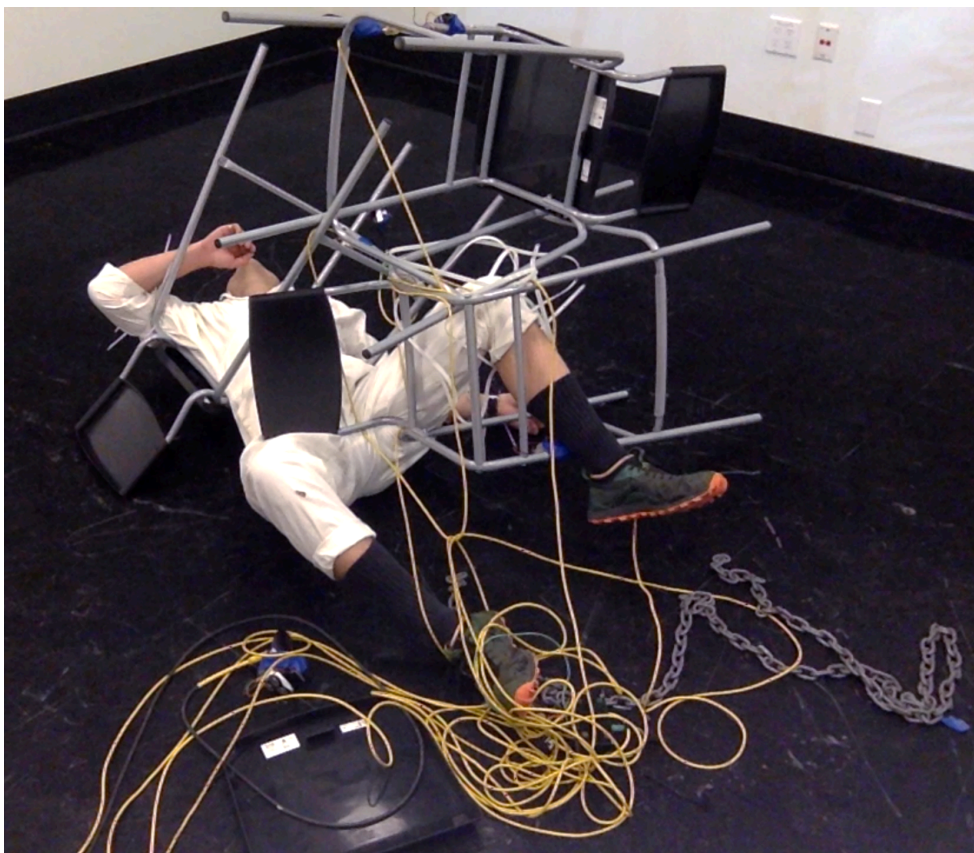
In *Performance #3,* the techniques of the previous two performances – direct contact of the performer's body and utilization of physical objects – were integrated into one, short, intense, and potentially dangerous act: the performer hurled their body onto a pile of objects, while wearing an amplified electric guitar, for maximum sound generation. By uniting a physical

gesture with the resulting sound from that action, the ultimate product and aesthetic achievement is the union of those two elements into one compelling, abstract visual-sound gesture. Since this movement is built upon the previous two, it can be said that the entire piece was leading into this one explosive final gesture.

In the center of the WaveCave gallery space, I carefully stacked several cardboard boxes, chairs, discarded recyclable, and other objects in a precarious-looking pile. As a lone drummer slowly and ominously tolled the forthcoming act, I made a short announcement to the audience instructing them to document the piece with their smartphones. As tensions arose, I turned on my guitar, blaring feedback, while the drummer played faster. I backed out of the gallery space to get a running start, dashed forward, and hurled my body into the air to fall downward on the pile. As my body came crashing downward, the guitar exploded with noise and the pile of objects erupted across the room in several directions (see Figure 7). The audience screamed out of excitement and perhaps shock and awe.

In this piece, it is fairly obvious to perceive the union of body and electronic sound – the massive collision of the body is the source of sound generation. I also utilize concepts previously discussed in *Performance #2,* in which "my music" is not confined to one mode of perception of performance. However, I also intend to extend the scope of "my music" further to include the emotions of the audience. By potentially subjecting myself to physical pain with a dangerous act, all sorts of tension, worry, and awe arise within the audience in reaction to the piece. To simplify the statement, I hoped that the audience could feel the pain of my body as I crashed into the junk pile, with the sound amplifying that feeling. With this technique, I wanted not only to blur the boundary between sound and body, but to also blur the boundary between my body and other bodies, and my mind with the audience's mind, thereby entangling everyone's emotions together for a brief instant. Again, as in *Performance #2,* I extend my definition of music to include not only what is externally perceivable but also to what is shared internally among the audience members and performers. Here, I draw on techniques of relational aesthetics in hopes that the "work" transcends the perceptible and includes something less tangible and quantifiable in a total definition of "my music."

With each of these pieces I attempt to highlight the importance of the body in electronic performance. I draw on several modes of performance and perception in order to rouse both the performer and the audience back into their bodies and into awareness of each other; this rousing is Thrashing Acousmatic. With the aforementioned techniques I hope to demonstrate

the potential of Activated Bodies as an important tool in electronic media and to also create a wholly new work that extends the definition of "my music."

2.2.2   Technical Specifications

In this section, I will discuss the overall technical approach for this project. Additionally, I will discuss in detail the technical aspects of *Performance #1* only. I have decided to omit a detailed examination of *Performance #2* and *Performance #3* from this section because they involve such simple techniques that require little to no more elaboration than has already been discussed herein.

On a general level, I opted to incorporate no-budget, low-tech, fast-iteration electronics tactics in order to allow me to begin engaging my body and experimenting with the relationship between sound and movement as fast as possible. A more refined system using a finished product would not have allowed me the same liberty to continually experiment. In my approach, a raw system allowed for more exploration, more variation, more unpredictability, and less repetition.

In *Performance #1,* I devised a "Human Body Voltage Divider" (HBVD) for voltage-controlling a Korg MS-20 Mini semi-modular analog synthesizer. With the HBVD, I essentially use my body to interrupt where the synthesizer cables are patched into synthesizer inputs. The HBVD consists of the pairing of a surface, containing the voltage divider, and the performer's back, containing the synthesizer inputs.

The surface is flat, made of cardboard, approximately 3'x2' in size, and mounted on the wall. I made a basic voltage divider, powered by a separate, external source, with multiple nodes using several resistors of various sizes connected in series. The voltage divider is physically spread across the surface with the nodes randomly distributed. The surface area of each of the nodes is enlarged using (conductive) copper tape. As a result of this setup, the surface is covered in several large nodes, each varying in voltage from -12V to +12V (see Figure 8).
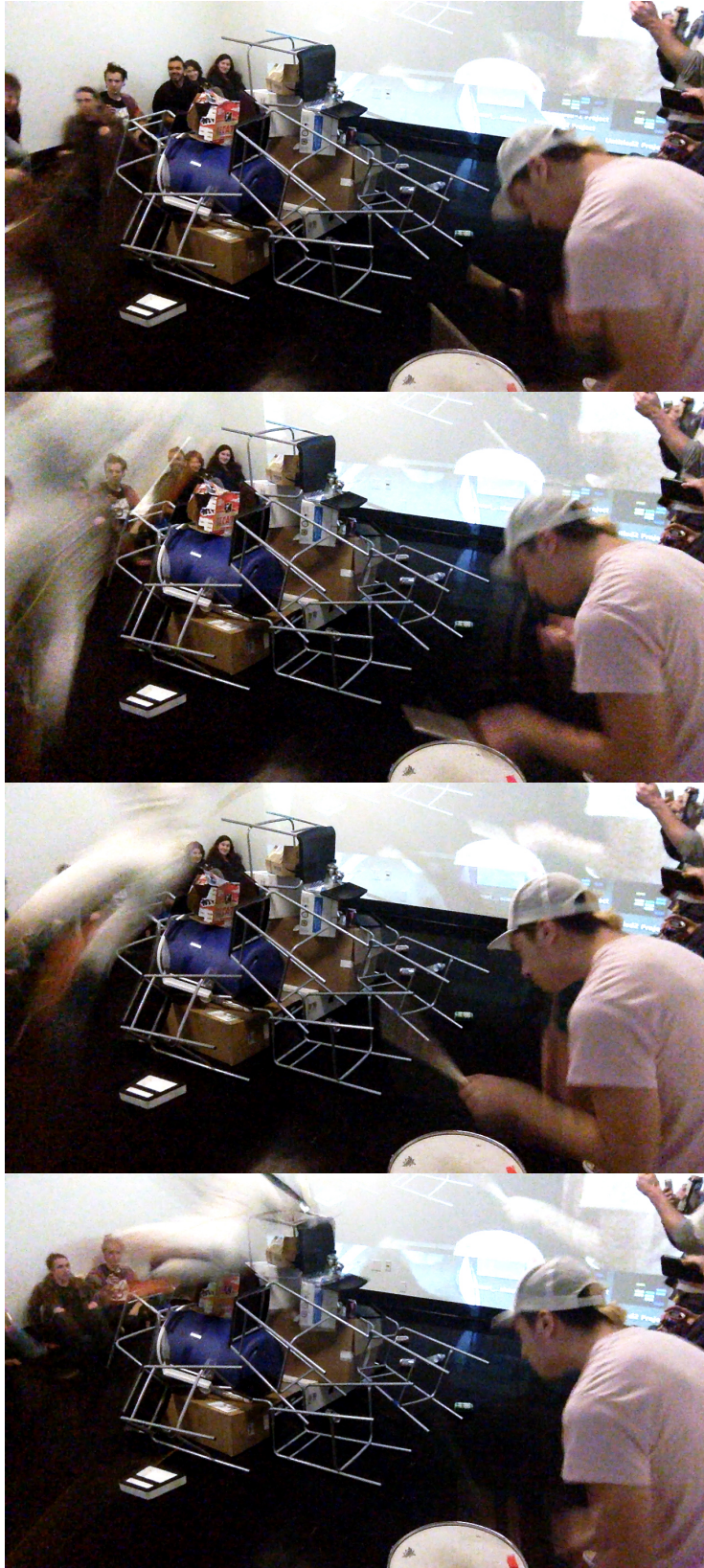
Figure 7 *Brass Orchids - Performance #3* **(2016)**
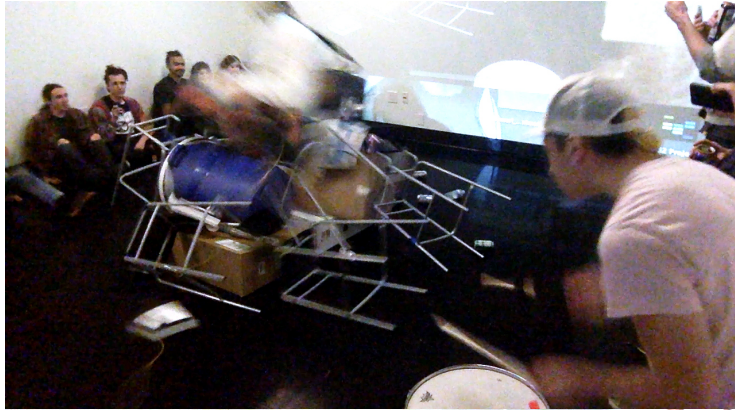
The performer's back is connected to the control-voltage inputs of the synthesizer. Several pieces of copper tape are attached to the performer's back in various areas and then connected to the synthesizer via flying wires. Whenever the performer's back makes contact with the surface, their back thereby touches an area with a specific control voltage. This control voltage is thereby connected to various synthesizer parameters, such as filter cutoff, pitch, etc., thereby affecting the sound. This apparatus allows the performer to generate sound via an analog synthesizer by actively engaging their body as opposed to playing a synthesizer by ordinary means. As the performer begins to move their back erratically along the surface, several different voltages are introduced to the synthesizer at a rapid rate, creating a chaotic, unpredictable sound.
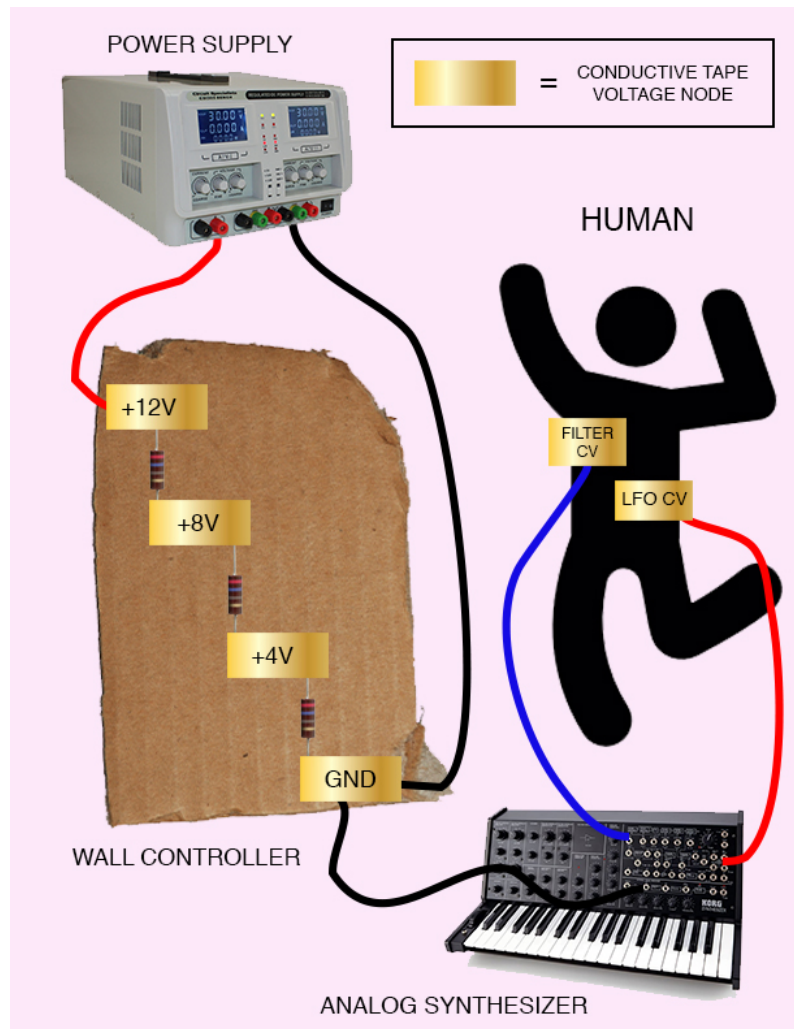
Figure 8 Diagram of Human Body Voltage Divider (HBVD)

By utilizing cheap hardware in an unconventional manner, I was able to begin directly experimenting with my body in a musical context. As a result, my body invigorated the work in an erratic, unpredictable, and "vitalistic" manner.

To recapitulate, this chapter has discussed the strategy of Activated Bodies, in which attention is being directed towards the body in electronic performance via its visibly present involvement in the generation of electronic sound. Activated Bodies are primarily a practical consideration – a hope to make performances more interesting for spectators and performers alike, providing more visual feedback than the ordinary electronic performance scenario, thereby diminishing the acousmatic situation. Both augmented and complicated by technology, the techniques of Activated Bodies result in emergent qualities uniting body and machine, sound and gesture, intentionality and un-intentionality, and performer and audience. These aforementioned emergent qualities are the substance of these works, the abstract meat on the bone that gives Activated Bodies a sense of vitalism.

Chapter 3
Deactivating Bodies

We are always in a plenum, in being, just as a face, even in repose, even in death, is always doomed to express something (there are people whose faces, in death, bear expressions of surprise, or peace, or discretion), and just as silence is still a modality of the world of sound. – Maurice Merleau-Ponty (Merleau-Ponty and Baldwin 2004)

The words 'anti' annoys me a little, because whether you are anti or for, it's two sides of the same thing. I would like to be completely – I don't know what you say – nonexistent – instead of being for or against." – Marcel Duchamp (McEvilley 2005)

The strategy for electronic performance called *Deactivating Bodies* entails a form of anti-performance that brings attention and focus to the body by stripping the performance of movement or apparent musical gesture – a performance of "doing nothing." Employment of this strategy is a particularly conceptual maneuver – it intends to raise questions concerning embodiment and music in regards to the acousmatic situation, specifically: is there such a thing as disembodied music? In other words, if electronic music is typically paradigmatically removed from the body, then is it possible to further this situation in the same direction and completely remove the body from the scenario of performance? As the above quote from Merleau-Ponty suggests, it is impossible for the human body to express absolute nothing, even in the extreme situation of death. Therefore, any attempts to completely deactivate the body in performance fail to communicate "nothing" but are instead techniques for engendering curious situations. The "thrashing" aspect of Thrashing Acousmatic is less literal in cases of Deactivated Bodies,

wherein the thrashing occurs within the headspace of the audience. The role of technology within such pieces will also be examined in this chapter.

3.1   Background

Anti-art is "a case of art that attempts to turn the dominant art of its time upside down and expose its underside… It is apt to take confrontational and antagonistic positions, turning traditional premises against themselves" (McEvilley 2005). The history of anti-art can be traced back to as early as the previously mentioned 20th century avant-garde art movement Dada, which later paved the way for Fluxus and conceptual artist experiments in performance (Richter 1965). Notable among these experimental performances is John Cage's *4'33"* (1952), perhaps the first anti-performance presented to a notably large public audience. Enacting a performance of an extended duration of "silence," this Cage work is perfect anti-performance, germinal to the concept of Deactivated Bodies; however, it is only of tangential importance, as it is not concerned with, nor does it bring attention to, the human body.

Among the more relevant to my practice of these artists is Chris Burden, whose performance acts challenged contemporary notions of art and asserted that the artist's body "bears the content and is both subject and means of aesthetic expression" (Museum of Contemporary Art Chicago 1975). Particularly of inspiration to the concept of Deactivating Bodies, is a piece titled *Doomed* (1975), in which Burden laid relatively motionless under a sheet of glass in the museum gallery until disturbed, a performance that lasted a total of 45 hours and 10 minutes (see Figure 9). By simply lying on the ground, Burden was able to create an air of tension and reverence in the gallery (Puetz 2015). This piece is not directly connected to electronic performance, and is more accurately considered to be endurance art. It is of interest, though, for its ability to create an extended duration of tension using little to no bodily movement.

Figure 9 Chris Burden - *Doomed* **(1975)**

In Alvin Lucier's *Music for Solo Performer (1965),* the composer has created a piece for Deactivating Bodies, completing the loop between anti-performance and electronic art, albeit unintentionally. In this piece, Lucier sits motionless in order to enter a meditative state wherein his amplified brain waves are used for generating music (see Figure 10). In terms of visibility, the audience (and performer) is left with an inert body, "focusing" on the music to a barely perceptible degree, yet still generating compelling sound and, more importantly an intense performance. Though the intention was to transform biological phenomenon into musically meaningful data, a technologically aided piece for Deactivated Bodies was created as a byproduct of this performance (Miller-Keller et al. 2012).

Figure 10 Alvin Lucier - *Music for Solo Performer* **(1965)**

3.2 Music for iPod

Music for iPod was performed during the CalArts Music Tech MFA show in the Fall of 2014. This Deactivating Bodies performance, playing on a tongue-in-cheek joke of "iPod as electronic musical instrument," solely utilized prerecorded samples of the native iPod "click" sound, heavily processed with effects, of the early generation model Apple iPods (circa 2006). During the performance, I stood center stage with the iPod in hand, remaining relatively motionless unless cueing tracks on the iPod. The music progressed from a sparse density of iPod clicks at a low volume to a loud dense cacophonous cloud of clicks and on into various tracks, or movements, until ending.

3.2.1 Conceptual Techniques

Whereas the aforementioned *Music for Solo Performer* could only be considered a piece for Deactivating Bodies as a byproduct of situational circumstances, *Music for iPod* intentionally seeks to become a technologically aided anti-performance. With the performer standing inert, "doing nothing," while the music drones on, the audience is left to question what is actually occurring

onstage, if anything at all (see Figure 11). In a sense, the performance is more akin to early tape music concerts, wherein all the musical action is occurring in the form of playback on the loudspeaker system; there is no active human performer. With this conceptual maneuver, the piece amplifies the acousmatic situation, rather than diminishes it. In other words, through Deactivating Bodies, or though the absence of the body, attention is being directed towards the place where the body is supposed to be, thereby highlighting the importance of its role.

Paradoxically, as exemplified by Merleau-Ponty's quote concerning the plenum in the opening of this chapter, the missing body is still inevitably and inescapably present in Deactivating Bodies. Music can never be disembodied, according to Peters, and there is "nevertheless a residue of bodily presence in the sounds we hear, both on the side of the sound and its organization as chosen for a piece" (Peters, Eckel, and Dorschel 2012). The body is still present – thereby audiences and performers are left with their own preponderances of the actual relationship of the body to the music. Thrashing Acousmatic is present here only via its absence – it is a shock to find nothing where one expects something.

Figure 11 *Music for iPod* **(2014)**

3.2.2 Technical Specifications

The technological component of this project is fairly simple and straightforward. I sampled the built-in iPod "click" sound, which ordinarily serves as a form of user feedback when scrolling through the library, and processed it with various software programs. The processed samples were saved as separate and distinct files, so that I could pick and choose among them, as one would select music to suit their mood on a jog, drive, or other daily activity.

This format creates musical structure in a way that is inherent to the iPod – all the content is fixed (prerecorded files are not modifiable), the durations are flexible (as I can jump from file to file whenever I please), and the transitions are jarring (with no fades between files). I allowed the machine to perform both itself and *me*, governing my actions and musical possibilities. This piece amplifies how technology mitigates the body by performing only the actions made available in an interaction with the iPod. This idea of music implicit in technology is akin to the work of David Tudor, who famously stated, "The object should teach you what it wants to hear," or in other words, the object becomes the score (Schonfeld 1972).

3.3   Chris Burden Rip-off

As the title clearly suggests, this Deactivating Bodies piece is heavily inspired by the aforementioned performance by Chris Burden, *Doomed.* In *Chris Burden Rip-off*, without any spoken warning or acknowledgment, I took position flat on the ground, shirtless, lying face up, underneath a piece of grimy plexi-glass hoisted by two stands at waist height, with single strip of LEDs flashing irrelevantly on the floor nearby, and a modular synthesizer at my side generating ever so slightly changing sounds (see Figure 12). I attempted to stay as motionless as possible with my eyes shut, making only slight unintentional shifts irregularly. Enacted in the context of a larger show, the performance lasted, unpredictably, the entire duration of my allotment until the show organizer ended the music.

3.3.1   Conceptual Techniques

With *Chris Burden Rip-off,* I hoped to investigate ideas of endurance performance in the context of electronic music. I employed the element of surprise a la Artaud's Theater of Cruelty in order to shock audiences into questioning what was occurring in the performance. Due to lack of any explanation of my part, several onlookers came into some noteworthy conclusions of their own, according to the audience reviews I conducted afterward. Common amongst nearly all

interviewees was a curiosity concerning the relationship of the music to my movement. The synth patch was set up to be extremely repetitive, with subtle phasing rhythmic shifts occurring gradually over a period of time. The only bodily movements I made were small readjustments for comfort (which the audience didn't realize were unintentional). Some audience members incorrectly associated these two subtle occurrences of change in sound and movement with each other, and misconstrued the cause to have something to do with interactive electronics. This empirical study demonstrates the way viewers seek and expect connections between sound and body. Furthermore, it demonstrates that any movement in Deactivating Bodies, no matter how small or unintentional, becomes magnified by the lack of any other physicality occurring. In a sense, the experiment failed its original intent as endurance art but succeeded as an experimental piece for Deactivating Bodies. Again, as in *Music for Solo iPod,* Thrashing Acousmatic occurs in this piece via the jarring absence of any typically-present performance aspects.
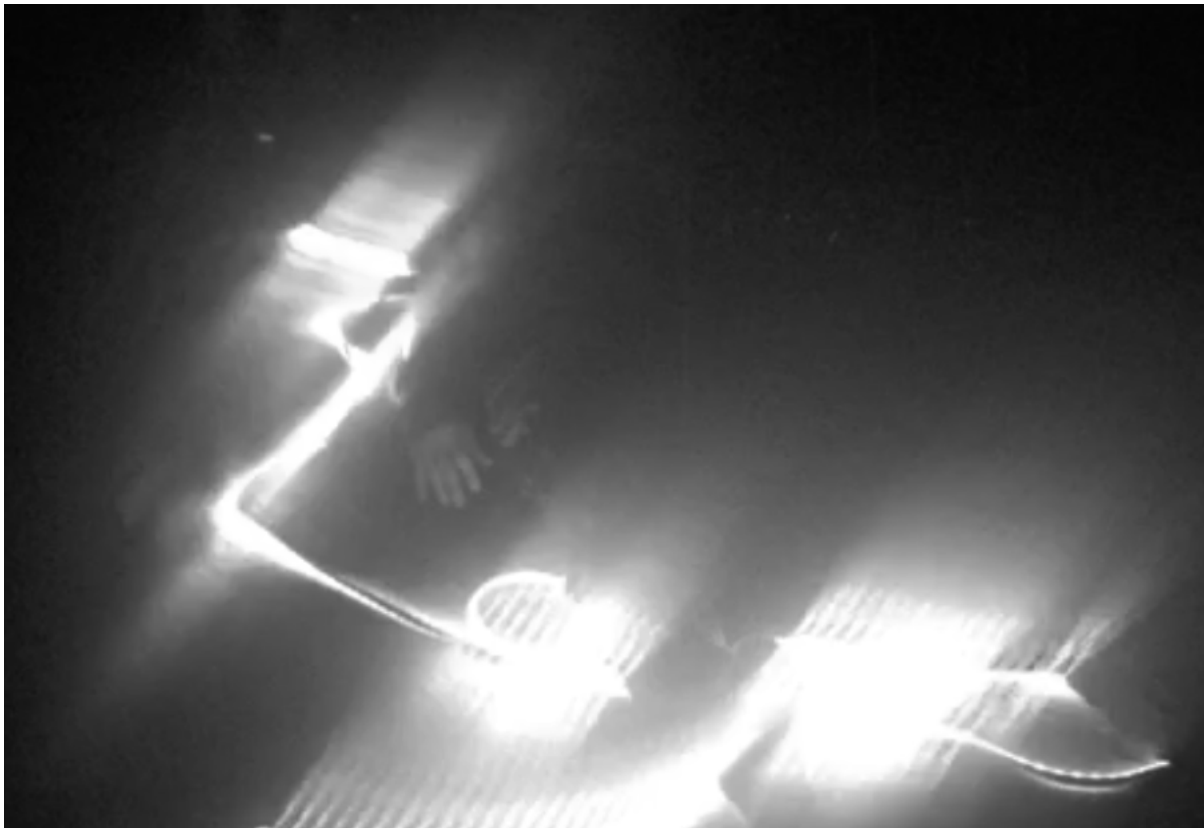

Figure 12 *Chris Burden Rip-Off (2016)*

3.3.2 Technical Specifications

The use of technology in this piece is primarily to provide a means of sound generation, but, additionally, its simple presence raises questions of relation to the body. If properly patched, modular synthesizers can provide ongoing sound generation, without the need for human intervention, for practically infinite amounts of time. Using low-frequency oscillators, gradual shifts and subtle variations can be programmed into the music, compensating for the absent body by providing dynamism and structure. As a result of the performer's disengagement, the synthesizer patch becomes the musical score, but the audience still connects the musical events to physical actions.

To recapitulate, this chapter covered the strategy of Deactivating Bodies, in which attention is being directed towards the body via its absence, thereby reinforcing its importance in performance scenarios. By drawing attention to the body, audiences have a tendency to draw a connection between the sound and the body, even when there is none. Deactivated Bodies attempt to convey a sense of "doing nothing," but always are inescapably doing something, illustrating the impossibility of completely disembodying music. In these works, the object, equipment, or programming become the dictators of the music score as a result of the bodily inaction, leaving audience and performers with questions and ideas concerning the relationship of the body to both technology and music.

Chapter 4

Extending Bodies

"For us, composing a piece of music is like building a new instrument, an instrument whose behavior makes up the performance. We act at once as performer, composer, and instrument builder, in some ways working more like sculptors than traditional musicians" - John Bischoff and Tim Perkis (Bischoff and Perkis 1989).

"Technology is an extension of human faculties." – Marshall McLuhan (McLuhan, Fiore, and Agel 1967)

In this section I will discuss a strategy of body engagement distinct from the previously discussed two categories called *Extending Bodies*. Works for Extending Bodies involve integrating hardware, sculpture, and other physical objects external to the body in order to foster a performance environment in which the audience can easily visually perceive what actions are affecting the sound, and additionally, to allow for a direct, hands-on method of interaction for the performer. Extended Bodies derive their name from the above McLuhan quote, and, as stated in said quote from the famous thinker, technology is an inseparable component of this strategy. The technology and strategy of Extended Bodies involves electronic musical instruments that do not imitate traditional acoustic instruments but provide the same type of effectiveness in visual cues. The external devices used in Extended Bodies require the intervention of the performer's body; however, they do not involve a significant amount of bodily action/non-action to qualify as either Activating or Deactivating Bodies. And yet, Extended Bodies are, by necessity, more visible and visually engaging than common electronic instruments. Additionally, Extended Bodies have the ability to illuminate some ideas about our own bodies, its faculties, and its deficiencies. These ideas represent the concept of Thrashing Acousmatic thoroughly via the engagement of the body, the ability to expand the definition of "music," and the way that it bridges the senses and manipulates the tensions between body,

sound, and machine. Regarding my own work, I will discuss the HAIR Interface – a custom built interface for compelling audio-visual performance – including conceptual implications while paying special attention to technical details.

4.1 Background

Electronic artists have been designing, building, and performing with devices that control computer generated sound at least as early as the 1980s. Academics and artists such as Michel Waisvisz, Nicolas Collins, Laetitia Sonami, and Atau Tanaka are but a few of the early pioneers in the genre to attempt to introduce physicality and gesture into the realm of electronic sound (Collins and Escrivan 2007). Equipped with pressure sensors, accelerometers, and various other physical computing devices, these "alternative" controllers take the shape of hyper gloves, kinetic sculptures, or augmented musical instruments. Today, a staggering number of controllers have been brought into existence by individuals of varying levels of expertise with the advent of ever-increasingly available home-computing systems, micro-controllers, sensors, and real-world interfacing devices. The intention is always relatively the same: to integrate physicality into the domain of electronic music. This type of performance shares some similarities with that of traditional instrumental music performance – the attention is directed towards the interactions between the performer and the instrument. These electronic devices, however, diverge from the traditional paradigm in that they allow the flow of interactions to proliferate in multiple directions. In other words, traditional instruments dictate that they be acted upon; they do nothing without the performer. These new controlling devices, on the other hand, can be programmed to act chaotically, unpredictably, or otherwise act upon their performer.

To reiterate, there is a well-established history of alternative controlling devices and the technology widely available and easily applicable for musical purposes. In this chapter, the work I will present is made possible by the aforementioned predecessors and extends their tradition of controller building. In the following section, I will first discuss some ideas borrowed from the medium of sculpture as they pertain to some preliminary concepts of Extending Bodies.

4.2 Sculpture / Sound Sculpture

"The painting of a body puts it at a certain remove in a certain imaginary space, but the sculpture of a body puts it in literal space. It becomes a partner to our own body, rather than a remote reference to it. Indeed, it becomes a

peculiar obstacle and objection to our own body, for it confronts our occupancy of space with its own, forcing us back on our own visceral givenness, our own insistent right to occur physically in space. In short, the unmistakable sign of sculpture is that it makes us aware of our body as the fundament of our being by reason of its own ability to express fundamental bodiliness. Sculpture is most convincing when it makes us conscious of our innermost feelings about our body." – Anthony Gormley (Gormley 2016)

In the above quote, Gormley argues that all [his] sculptural work is heavily preoccupied with the body. The HAIR Interface was initially intended to be an extension of my sound sculpture practice. Sculpture and object making is about negotiating the body, external bodies. From a certain perspective, we, as subjective viewers, can locate sound in three-dimensional space. If we take into account a reading of Maurice Merleau Ponty's <u>The Visible and the Invisible</u> we can perceive an interrelated functionality of our senses – hearing is an extension of touch, listening is like being touched, looking at a thing is like touching that thing, etc. In turn, by locating a sound source in three-dimensional space, it can become sculpture and, as Gormley stated, a partner to our body. There are less abstract examples of this inter-enmeshing of our senses, too. Via the medium of sound sculpture, sound can more easily be married to an object. Even if the sound is being emitted from concealed speakers somewhere within the sculpture, it is less of a stretch of the imagination for us as viewers to wed the sound and the sculptural object in a very literal sense. This is an easy, stupid, and over-explained form of union between sound and object. However, the medium of sound sculpture is capable of exploring this union in more subtle and interesting ways. In the next subsection, I will briefly examine one of my sound sculptures in order to elucidate the concept of "extension" in Extended Bodies.

4.2.1 "Sitting Outside the Pavilion with the Elitist J. Vagushin"

In my sound sculpture titled *Sitting Outside the Pavilion with the Elitist J. Vagushin* (2015), an assemblage of household (readymade) goods and custom electronics converge into a unified, flashing, tone-generating automaton (see Figure 13). A ceiling fan is mounted onto a large wooden surface, which in turn is hung from the wall, causing the fan to hang sideways, with the lighting apparatus facing the viewer. Custom electronics supply power to the fan and alter the speed of the fan at irregular intervals. A wireless microphone is attached to one blade on the fan. With each rotation, the blade with the attached microphone passes directly in front of a speaker,

generating both a short feedback tone and, with the help of custom electronics, a flash of light from the ceiling fan's built-in light fixture.

In this sound sculpture, several commonplace, consumer-grade objects come together to form a whole, greater than the sum of its parts. The fan's built-in functionality is brought to life into self-powered automatism through the assistance and interaction of the other objects. No human intervention is necessary for it to continually operate.

Every single piece is necessary in order for the full functionality to be achieved. The microphone must face the speaker in order for the feedback to sound. The fan must rotate so that the feedback sounds as a periodic "blip." The feedback must sound to make the light flash. The custom electronics are the silent, not-so-obvious glue of functionality, perpetuating the fan into motion and abruptly flashing the light when sound is detected. On the viewer's end, all three major perceptible elements – the fan, the light, and the tone – are thus engaged in an unclear cause-effect relationship, posing the question: which element is causing which other element to occur? The piece provides no immediate clues. Simultaneously and paradoxically, each disparate element is also unified into one larger gestalt of the entire piece. The sculpture of the augmented fan-thing spins and flashes and beeps tirelessly, and it appears to do so as a single entity. All of its comprising parts appear as organs within a larger whole, rather than individual elements interacting within a conversational network. The direct analogy to our own body's composite nature is apparent enough, but not necessarily enlightening nor inspiring. Rather, the "personality" (for lack of a better term) of the sculpture is where we obtain the more useful information regarding our own bodiliness – the violent and jarring way the fan spins, precarious and threatening yet somehow consistent and secure, the loud shrieking yelp of the feedback tone, the urgent and consistent flashing of light. It is as though the piece is crying out for help, or shrieking in pain, or demanding attention like a needy, reckless child. Whatever interpretation of it the viewer may have, this sound sculpture speaks to us most effectively via its corporeality and our own.
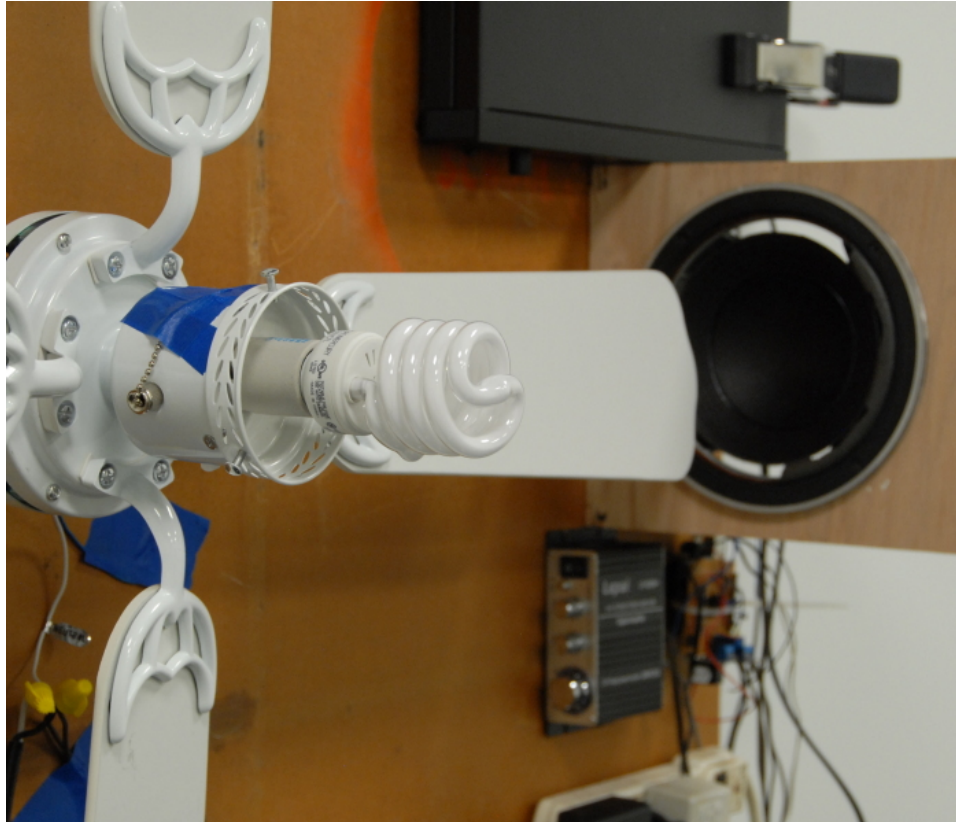
Figure 13 *Sitting Outside the Pavilion... (2015)*

Sitting Outside the Pavilion, however, is not specifically within the primary area of focus of this thesis – performance. I do not present this piece as a digression; rather, it serves as a conceptual stepping-stone in understanding how external objects relate to or extend the body via my own work. In the particular case of this piece, an installation-based piece with the performer absent, the sculpture serves more as a partner to the audience's body rather than an extension. However, its bodiliness is evident; it only needs a performer-as-partner in order to qualify and serve as an extension. With the concept of partnered-external-object-bodiliness thoroughly examined in this section, I will examine in the next chapter the ways in which these objects serve as extensions.

4.3   HAIR Interface

Untitled HAIR is an interface for computer-aided music performance designed to generate sound based on color information, thereby providing a correlation between visual information and sonic information.

In most recent performances, HAIR utilizes an RGB color sensor, four touch-capacitive sensing plates, a potentiometer, and a turntable-like mechanism with a rotating disk to trigger musical events. The RGB sensor, aimed at the surface of a rotating disk, is fed physical color data distributed on top of the disk by the performer. Color data took the form of paint swatches (solid color sheets of cardstock). As the disk rotates at a speed controllable by the potentiometer, various colors rotate in and out of range of the sensor, thereby triggering sonic events in a manner dependent upon the software implementation. The most recent software implementation involved "memorizing" colors, associating sound samples with each color, and playing the samples each time a memorized color was detected. The interface also includes several other hardware and software features allowing for deeper and more complex audio modulation and other performance techniques.

In the following sections I will explain the interface in detail with regards to conceptual techniques and technical information. I will also discuss the specific ways in which it serves as an Extended Body.

4.3.1   Conceptual Techniques

The hope and intention of designing this interface is to foster a performance environment in which the audience can easily visually perceive what performance actions are affecting the sound, and additionally, to allow for a direct, hands-on method of interaction for the performer outside of the computer. In a majority of popular electronic or computer-aided music situations, our vision is directed to one or more screens – the performer and audience are either affixed on projections and/or the laptop screen. Commonly, there is no feedback between visual and sonic information; visuals exist solely as an ornamental layer stacked on top of the pre-existing music. With HAIR, we can pop out of the screen and back into corporeality; HAIR is a work for Extended Bodies by virtue of its existence in tangible space. Furthermore, sound and vision in this piece inform each other, bridging our senses, allowing us to see-hear in an idiosyncratic manner.

HAIR is a partner to our own body, reflecting some of the abilities of our own body – namely, perception in the form of a reduced type of vision. In other words, the interface's color sensor mirrors the ability of our own eye. By reducing color to a crude and cold set of three numerical RGB values, it reflects and amplifies the benefits and deficiencies of our own vision and perception. The electric eye is at once both more crude and more precise than our human vision. It is crude in its inability to represent in a way that is true or useful for seeing/thinking beings, crude because it can only sense this singular property of a sensible object. It is precise in its ability to put an exact number on a color, to prove our own assumed-to-be reliable vision as faulty in the face of cold, hard numbers.

Observe the effects of the differences in visions in a performance scenario: As the turntable spins round and round, both eyes, organic and electric, are affixed on the same locus in space; we wait for the moment to occur when a color will pass under the electric eye. Eventually, a color, say for example, red, passes under the sensor; in response, an easily recognizable sound sample is played. This same sample will play each time the color red passes under the sensor. New sounds will be generated each time a new color is introduced to the vision of the sensor. We, as viewers, can automatically form an association between the colors and the distinct sounds they make. Throughout this imaginary performance scenario, we have already seen-heard several results: we know what red sounds like, and we know what purple sounds like, but what about this new color that is somewhere between purple and red? Will it be rounded up to one of the previous colors or will it sound as its own color? As the new color rotates into view of the electric eye, a sound will occur and it can either be in accordance with or against our expectations. This difference between the actual and the expected comprises the true Extended Body of this piece, entangling our vision with a piece of hardware. Our vision is extended into something more complex than a one-to-one relationship: what we see is not always what we get. Rather, our vision is affirmed or denied vis-à-vis a signal from our hearing, ultimately derived from a technological process. Our perception faculties are integrated with the machine in a slippery and imprecise causality loop.

The term "extension" of Extended Bodies is in some degrees in line with the same term in Marshall McLuhan in <u>Understanding Media</u>. In the McLuhanian sense, technology silently acknowledges the shortcomings of our own bodies and aims to amend or supplement, the focus being on the medium itself, without regards to content. In this original document, his definition of extension is left rather vague and open, the author using many types of media and

technological processes as examples, yielding several types of results, both good and bad. However, he does not include examples of technological art, such as the Untitled HAIR interface, wherein the medium and the content can potentially be inseparable – the unordinary medium, which is not solely the medium, becomes the message. Extended Bodies complicate both our relationship with technology and the process of extension.
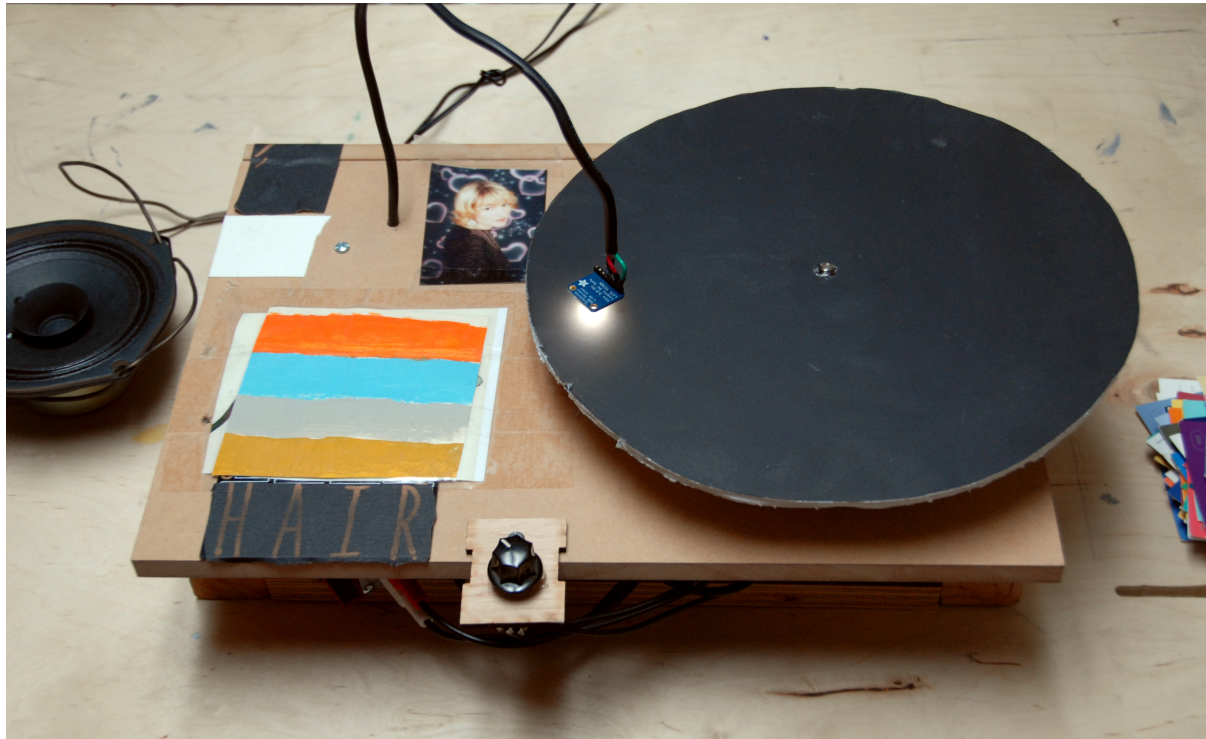
Figure 14 *HAIR Interface (Unnamed Prototype)* **(2014-2015)**

4.4   HAIR Interface Technical Specifications

In this section I will discuss some technical considerations that went into the Untitled HAIR interface. I do this merely as an aide to understand how the interface was performed and to demonstrate how it engaged the body of the performer. Even though this project presented many technical challenges, I will refrain from divulging too much detail; this thesis does not serve as a technical manual.

4.4.1 Information on Color Mappings

Artists have been examining the relationship between sound and color for centuries. Typically, composers have mapped color directly to frequency, progressing in a parallel manner through the visible spectrum and the chromatic scale. For example, in the case of DD Jameson, red, the longest wavelength (lowest frequency) on the visible spectrum is mapped to C (Jameson 1844). As color frequency increases, pitch frequency also increases. Therefore, orange corresponds with D, yellow with E, etc. Though the actual mappings vary amongst composers, the typical convention is to map color to pitch frequency.

However, all these mappings are subjective; the correlation between aural and visual has no scientific basis. There exists little to no continuity in color-pitch relationships from one individual to the next or any explanation as to why, for example, the color red is specifically associated with the note C. Utilizing any of the pre-existing mappings would not explicitly create a strong link for the user between visual information and sound. I experimented with these mappings initially and found them to be dissatisfactory. Additionally, the relationship between color and pitch is not of interest in this project; I am specifically interested in creating a link in visual information and sonic information for the benefit of a compelling performance.

Abandoning the aforementioned color-to-sound mapping paradigm, I decided to implement a system that utilizes color, distinction, memory, and association. With HAIR, colors are sensed, checked for distinction and/or "newness", stored in memory ("memorized"), and associated with a sound sample. Each time a memorized color is sensed, the associated sample is triggered. If a new color is within close enough range of a previous color, it gets rounded up and treated as that previous color.

4.4.2 Other Sensors

The four touch-capacitive sensing pads output one value corresponding to the amount of human touch they are given. This value is scaled and mapped to various parameters and audio effects. In most recent iterations, the first touch sensor controls a chorus effect depth modulation, the second sensor a delay feedback level, the third another chorus depth modulation, and the fourth a pitch-shifter interval amount. The touch capacitive sensors are very useful in giving the performer an immediate, direct, and tactile ability of manipulating the sound.

The potentiometer is mapped directly to the speed of the motor that rotates the turntable, as well as the volume level of a background sound loop. Therefore, the rotation of the turntable is directly tied to a sound. When the turntable is rotating, a background loop is audible, and similarly, the loop is not audible when the turntable is motionless.

4.4.3 Extended Gestural Techniques

HAIR is programmed with extended gestures for performance techniques beyond the aforementioned one-to-one mappings. By engaging the sensors in particular ways, the performer is able to clear the color memory, change sound sample sets, or switch the interface into alternative modes.

If the performer turns the motor-controlling potentiometer beyond a set threshold, the color-storing memory of HAIR will be cleared and reset. Furthermore, when the motor is turned up to this high speed beyond the threshold, the paper swatches on top of the disk will also be cleared (or thrown off), thereby connecting a physical, visible action to a performatively useful software process.

If the performer both makes contact with all four touch sensors and sets the motor to a speed beyond a preset threshold, then the bank of sound samples in use can be changed. This action allows for variation in sound, progressing the music into new movements.

Through use of all these sensors I was able to engage in a system of physical play and exploration with this device, connecting various physical actions to performatively useful software processes, thereby entangling the senses and also making for a visually appealing and fun performance.

To recapitulate, this chapter covered the strategy of Extending Bodies, in which traditions of electronic instrument building, concepts of sculptural practices, and questions of sensory experience are thoroughly investigated. In hopes of diminishing the acousmatic situation (or Thrashing Acousmatic), Extending Bodies provide a correlated bodily figure for the performer to engage in a dialogue and for the audience to witness. Extended Bodies additionally provide tangible physical evidence for complex and abstract musical gestures, engaging our senses in a slippery push and pull between perceptual modes and expectations.

Chapter 5

Conclusion – Multiplying Bodies

5.1   Summary

Within this thesis I have discussed a historically pervasive setback of electronic music, the acousmatic situation, and the ways in which it has excluded the body of the performer from works of electronic art. I have presented a number of strategies via my personal artwork for negotiating this setback via "revitalizing" and engaging the body, namely: Activating Bodies, Deactivating Bodies, and Extending Bodies. Each of these strategies incorporates a raw, reckless, immediate, fast, and impulsive approach, thereby "thrashing the acousmatic situation." With the aid of electronic music technology, I have demonstrated the body of the performer can be directly injected into the work, bearing content and stressing its fundamental importance. Through this strategic integration of body and machine, the work can transcend the boundaries of music, and furthermore, allow deeper connections to be formed between audiences and performers.

5.2   Primary Contributions

The work in this thesis demonstrates the potential role of the body in the context of electronic performance and its beneficial results. I also demonstrate how this potential role is augmented by the use of technology, and similarly, vice versa, how the body augments technology via a

number of strategies. These strategies each yield unique contributions. Activated Bodies promotes a meaningful connection between exertion, movement, and involvement of the body and the generation of sound via custom electronics. Deactivated Bodies employs a non-involvement of the body, thoroughly informed by Conceptual Art, to highlight the impossibility of removing the body from electronic art. Extended Bodies utilizes unique electronic interfaces to make performance more visually appealing and to show the ways in which our bodies, perceptually and corporeally, are entangled in technology. Though many of these pieces in this thesis resulted in the creation of new electronic music devices, I consider the primary contribution to be the works themselves that were produced using the specific combination of technology and the human body.

5.3   Other Discussions – "Multiplying Bodies"

Multiplying Bodies is a strategy that involves incorporating all or several of the previously discussed strategies within the span of a single work. I offer this strategy here in the concluding chapter as it represents a good summary of the thesis, reflecting several disparate possibilities of engaging the body within a single work.

Works that incorporate multiple strategies tend to push the work to the boundaries of the medium, oftentimes straddling the line between types of performances (music performance, performance art, etc), if not altogether pushing from one type into another, thereby constituting a multimedia work. In other words, incorporation of multiple strategies is conducive to creating works that are multimedia in nature. Multiplying Bodies embrace this multimedia, multi-strategy approach, and, as a result, create more boundary areas, or liminal zones where the work becomes more difficult to categorize. These boundary areas are where works of Multiplying Bodies flourish. The "multiple" of Multiplying Bodies comes from: multiple strategies, multiple media, and multiple boundary areas.

In this chapter, I will briefly discuss plasma Pool VI, a work of Multiplying Bodies, and will highlight the ways in which this performance utilizes each previously discussed strategy, as well as how using multiple strategies lends itself to being a work of Multiplying Bodies.

5.3.1 Plasma Pool VII

"PLASMA POOL VII: ALTAR EDITION is a trans-media non-opera psycho-lecture that tells, or rather demonstrates, the experiments of estranged ex-choir director Cordey Lopez and his relationship to the baffling, organic hyper-computer inhabiting his subterranean studio apartment. In this immersive experience of hi-sci-fi meets lo-art, sculpture, dance, interactive electronics, video, puppetry, breaks into song, and blah-blah-whatever are crammed into a particle accelerator (clank-crackle-swoosh-pop!), yielding an orgiastic, primordial ballet. The audience is invited to become part of this absurdist gezamtkumstverk and take an acid bath in the core processor's voltaic cell (which looks a lot like a relaxing swimming pool). "– show blurb from Plasma Pool press release

Plasma Pool VII is a multimedia experimental theater piece incorporating live electronic sound/music, computer generated visuals/video art, and movement/dance. This play stages a dramatic lecture integrating the audience into the performance as they sit in an indoor swimming pool – the "Plasma Pool." Using lecture slide format, the lecturer uses a Powerpoint presentation to tell the story of the mysterious, possibly magical, transformative powers of the Plasma Pool. Anything that enters the pool will be irreversibly and inexplicably transformed into an entirely different thing. The slippery logic and mysterious functionality of the pool is believed by the main character to be encoded in the Beach Boys song "Surf's Up" – by understanding the song, one can understand the pool.

Throughout the lecture, the performers demonstrate the various transformative effects of the pool by introducing different Surf's-Up-related objects into the Plasma Pool and observing how they change at the output. Each time this process of transformation occurrs, or "Transmogrification," as it is referred to within the piece, the pool environment explodes into a state of audiovisual chaos via modular synthesizer, visual projections, and structured-improvisational movement (see Figure 15). Several other non-lecture events occur periodically throughout the piece illuminating the dark personal history of the fictitious lecturer. Some of this drama occurs in the form of breaks into song, solo dances, visual projections representing dream states, interaction with sculptural objects, etc. Eventually, the main character becomes so consumed with both his dark past and the pool itself that he hurls his body in the pool, concluding the play in an extended duration of darkness.

Figure 15 A Scene Depicting Transmogrification in *Plasma Pool VII* (2015)

This play utilizes all of the previously discussed strategies, encapsulating several [musical] micro-performances into one larger work. Electronic sound is present throughout the play, cueing movement, action, and transitions. The Activated Bodies strategy is manifested via the wild movement of the performers triggering sound events throughout the play. Furthermore, the audience is brought into awareness of their own bodiliness as they must sit inside an indoor swimming pool for the duration of the performance. The Deactivated Bodies strategy is most present in the final scene, in which all of the performers and audience witness the main performer float inert in the pool in an extended duration of darkness. The Extended Bodies strategy is utilized primarily via the Plasma Pool – throughout the play the pool demonstrates its "power" on objects and people. As a result of integrating multiple strategies and multiple media, the nature of the performance proliferates in several directions simultaneously, leaving the audience to make several questions regarding what kind of work they are witnessing, including but not limited to: is this a play? Is this experimental music? Is this a dance piece? As a result, Plasma Pool VII resides in a boundary area where it blurs the separation between performance and real life, performer and audience. The most effective tool for the creating this blur is the human body – by their immediate presence and proximity, audiences are submerged and immersed in an enthralling work. Through its ability to integrate all the strategies of this thesis

into one work, *Plasma Pool VII* serves as a good example for the Multiplying Bodies strategy and the utter definition of Thrashing Acousmatic.

Figure 16 Angel Treviño as the "King" in *Plasma Pool VII*

5.4   Final Thoughts

"We start our lives with the body, and the body is the substrate of our understanding. But as we learn to do new things, as we learn to use new tools, we extend and transform our body, just as we extend and transform our understandings. Electronic music doesn't take the body away. It gives us a new body." – Alva Noe

This thesis stresses the importance of the role of the human body as a necessary agent to create compelling performances of electronic art. Engaging the body is, in essence, making the performance more real, more energetic, more "vitalistic," more powerful to all those that bear witness, both audience and performer. Though technology can potentially create situations in which the body is deemphasized, we, as artists and thinkers, should view these situations as opportunities for reinvention, for Thrashing Acousmatic, wherein the body and technology can emerge as a totally new and other whole for expressing concepts regarding the interconnectedness of our human nature via the fundament of our being – corporeality. Flesh made sound, and sound made flesh, our music can extend beyond the aural sphere, becoming

something like connective tissue, a rejoinder for a direct line of communication between our emotions and intellects.

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