Things Talk Back

The Embodiment of Technology as Praxis

By

Liz Allbee

Faculty Advisor: Anthony Braxton

A dissertation submitted to the faculty of Wesleyan University in partial fulfillment of the requirements for the degree of Master of Arts in Music Composition.
I’d like to thank Professor Braxton for his mentorship and for the continued inspiration of his music to me over two decades. Thanks to Professor Matthusen for her abiding and crucial support, and to Professor Kuivila for motivating me to investigate my work - and its contexts - more deeply.
TABLE OF CONTENTS

Introduction 1.

Microscoping 5.
   Partialities 6.
   Improvisation 16.

Telescoping 21.
   Time, Myth, and Music 22.
   Reflections on an Interview with Gordon Mumma 30.
   An Interview with Ute Wassermann 34.

Conclusion 42.

Works 44.
   *Quadraphonic Trumpets I & II* 45.
   *For Fingertips and Small Motors* 56.
   *For Fingertips and Small Motors: Console Edition* 60.
   *Library Sound Generator* 63.
   *Speak More Clearly* 69.
   *S'Tools & Sissy Fiss* 71.
   *Ear, Noise & Throat* 75.
   *Steth Test Two* 77.
   *Feedback Hands* 82.
   *For Trumpet, Piano, and Sine Waves* 84.
   *Tine Waves 1: Improvising Space and Resonance* 85.
   *Tine Waves 2: Tuning Forks for Dining Philosophers* 90.

Bibliography 95.

Links to Audio & Video Documentation 97.
INTRODUCTION

The question, ‘what do I do and why?’ has been near to me throughout my time at Wesleyan. I’m lucky to have had the opportunity to ask this question, because engaging with it requires the time and experimentation (including those crucial dead-ends and mistakes) which often isn’t available to composers and musicians. Since I’ve begun asking this question, two things have occurred. One, my practice has become somewhat clearer to me in a verbal way, and simultaneously, I’ve begun to realize how deeply my practice, and the question itself, is rooted in my personal experience.

I’d like to start by saying that this thesis begins from the personal, and from a process of inquiry that identifies with internal resonance before abstract theory. I chose the term Praxis in my title because it stipulates practice and experience as the beginning point of inquiry, before theory, concepts, or ideology. This resonated strongly with me.

That said, I was curious and driven to find out what others might also have to say about the ideas and thoughts I’ve had when I make things. It can be both fascinating and frustrating to engage with ideas but not always, or necessarily, through the vehicle of words. It’s certainly a communication, but how do you begin to talk about it?
The jumping off point for my research was identifying what compelled me. Could I name one singular thread that ran through everything I did, something like an over-arching or all-encompassing drive? No, but there were a lot of inter-related partialities in my work – elements that floated and danced around each other, themes that combined in different ways in various pieces and questions that continually rose to the surface. For example, I recognized issues and questions related to objects and to the permeability of myself and of things. Sometimes it seemed like things talked back. Another issue, arising from this, was the idea of feedback, of mutual and reciprocal transformation. It seemed to me like the lines between subject and object weren’t clean, and I liked that!

Throughout this process, I’ve tried to maintain an awareness of my ‘internal resonance’ meter, ie: does this really speak to my practice? My hope is that by having briefly described the various stages of questioning, research, and writing as I have above, you might forgive me for getting in over my head. It does reflect a genuine enthusiasm and a struggle to understand - with the subsequent confusion and messiness which that process sometimes entails.
I grew up in medium-sized towns by Vermont standards, by which I mean towns of 10,000 or so people, equipped with the necessary post offices and VFW Halls and traffic lights. I also spent a good deal of time in my grandparents’ village nearby, which at that point had a population of just over 300 people and which in reality was less a village than an assortment of houses scattered in the spit of a valley. My earliest memories are there. In one, I am being held in someone’s arms and suddenly I understand where I am – streams, house…

I don’t recall much more about that moment, and I’m hesitant to ascribe too many words to such a distant memory, which can be slippery. But I can say this with conviction: what I recognized about where I was that day was where I and those things were in relation to each other.

While I don’t feel particularly nostalgic or romantic about where I come from, I’ve slowly realized over the years that I retain a deep and intimately felt sense of place, which is not an insignificant part of who I am.

In the process of preparing this thesis I was often reminded of a story my grandmother told me, just around the time I started at Wesleyan. The story was about the time my grandfather tried to teach her how to dowse - a method of finding water - which in her telling appeared both worlds away and not so very different from this:

3.
Once the stick has become a familiar instrument, the world of feelable things recedes and now begins, not at the outer skin of the hand, but at the end of the stick....The pressures on the hand and the stick are no longer given; the stick is no longer an object perceived by the blind man, but an instrument with which he perceives. It is a bodily auxiliary, an extension of the bodily synthesis.¹

MICROSCOPING:

Partialities and Improvisation
PARTIALITIES

About Partialities

I chose the word partialities to describe the elements, aspects, themes, concepts, issues and ideas identified in my work because it allowed for all of the above words and more to apply. A partiality doesn’t represent a total enveloping schema or a self-contained case, and the list is never complete. Also, it is not a definition to overlay onto a work, piece, or a project. Instead, I’d like to introduce my partialities as akin to questions or proposals, hopefully more like a series of engagements. In this way, questions are allowed to lead to more questions, and answers are conceived of as various responses in a large conversation.

Some of the attributes and behavior of partialities

~ No one piece or project in this thesis includes all of the partialities.
~ A partiality often functions differently between pieces/projects. (This helps to expand its character and provides me with further questions and paths to explore).
~ A partiality is not a closed world, or in a closed world: the experiment leaks.
~ The materials/objects of a particular piece or project are in direct relation to its partialities; form and content relate.
~ The combinatory possibilities of the various partialities help serve to define the piece.
Partial List of Partialities

1. Embodiments and Extensions
2. Tools and Technologies
3. Feedback
4. Bricolage
5. Space (Between)
6. Filters and Focus
7. Cyborgs, Chimeras, Hybrids and Multiples
8. Aberrations
9. Listening Feeling

Valences, or meta-partialities

It occurred to me that the above list of partialities could itself be seen as a ‘set of’ or a kind of meta-bricolage. Borrowing from Professor Braxton’s terminology: while bricolage-in-the-house-of-bricolage is possible, it doesn’t have to be the case. For example, there is always the house of aberration. Also, a piece could include none of the elements in this list. My hope in creating the beginning stages of this non-taxonomy is to have a system that allows for its own contradictions, and most importantly, one which serves as a reminder to continually embrace the unknown.
Embodiments and Extensions

Embodiment and extension are two of the central considerations in much of my work. Extended techniques as well as the literal extensions or alterations on my trumpet were some of the first and still remain some of the most personal and significant elements of my practice. I view Quadrrophonic Trumpet I as the bridge between this initial trumpet extensionality and much of the subsequent electro-acoustic work I’ve made since arriving at Wesleyan. Additionally, the simple physical relation involved in playing an instrument - which I experience through the lens of my own trumpet practice - has been a critical point of departure for many of the thoughts, questions, ruminations and investigations within my pieces. On the most basic level, I view my trumpet as a tool or piece of technology, one that is an extension of me as much as I am a part of it: in other words, a reciprocal relationship. In some of the pieces I’ve developed at Wesleyan I’ve explored possibilities of extending oneself via other tools and technologies, and have wondered at the shift in perception which might be attained by this type of embodiment. In the newest installation console version of For Fingertips and Small Motors, I aim to cobble together an instrument which invites participants to explore a different kind of sonic embodiment and extensionality, in this way I hope to create an opening outwards towards the experiencer (as opposed to developing extensions intended only for a specific performer or performance).
Tools and Technologies

The focus of tools and technology in my work is primarily one of reconfiguration. By reconfiguring something an aspect or characteristic of it which might not have been realized before is allowed to surface. Sometimes a reconfiguration is simply putting a tool into a new or unexpected context, like a shoe that becomes a hammer (s'Tool and Sissy Fiss). Sometimes it is a structural reconfiguration, as in the re-routing of the trumpet valves in Quadraphonic Trumpets I and II. Technologies can be re-coupled (For Fingertips and Small Motors) and repurposed (Feedback Hands), in order to be made into new instruments. Additionally, tools can be re-contextualized to bring out the other qualities of familiar instruments like the voice (Ear, Noise, & Throat and Steth Test Two.) One common characteristic of Tools and Technology in my own work is its ‘lo-fi’ nature. This is primarily due to limited knowledge and resource, but is also an intrinsic part of my process, which is to start from ‘what’s at hand’. I like to imagine that the reconfiguration of the tool opens up new possibilities in the relationship between it and the user, and in so doing, can effect transformations in people as well.

But, in fact, learning to use a tool involves a transformation in which a tool that is “outside” the body becomes integrated into the body schema….Once it becomes absorbed into a body schema, the schema becomes extended in new ways and, as a consequence, our perceptual relationship to the world also changes.²

Following from this, I’m curious to continue on: can an observer (ie: a listener) also experience a shift in perception by witnessing reconfiguration and altered user-tool relations? Is this a type of embodiment without touch?

Feedback
Feedback refers to both the sonic phenomenon - sending the output back into the input - and to a more abstract model of people and objects that reciprocally and simultaneously transform themselves in relation to another: the user and tool acting upon each other, as I described above. Sometimes both of the above definitions of feedback are referenced in the same piece, for instance in Feedback Hands. In the pieces Ears, Noise & Throat and Steth Test Two, literal feedback from the stethoscope instrument is used to speak metaphorically about language. The most abstractly conceived concept of feedback appears in the circular responses and interactions of the signal-flow in For Trumpet, Piano, and Sine Waves.

Bricolage
Bricolage is a word that kept popping into my head when I was considering this thesis and how to talk about my work. I loosely knew of the definition as a kind of ‘working with what you can find’, which seemed to relate. I also wondered if there might be an element of pointlessness or inefficiency to it, which interested me very much.
In its old sense the verb ‘bricoler’ applied to ball games and billiards, to hunting, shooting and riding. It was however always used with reference to some extraneous movement: a ball rebounding, a dog straying or a horse swerving from its direct course to avoid an obstacle. And in our own time, the ‘bricoleur’ is still someone who works with his hands and uses devious means compared to those of a craftsman.  

I would liken these devious means to ‘angles’—much like in the etymology above—except that rather than being inadvertent these directional courses have intentionality. An angle is the path or trajectory by which I can choose to approach something: a problem, object, project, etc. For example, instead of coming at something in the usual way I might head parallel to it and then take a sharp left. This is inefficient but it can be effective. These angles are cousins of the ‘reconfigurations’ in Tools and Technologies, and both are related to certain characteristics of Filters and Focus. Schwitter’s Merzbow comes to my mind as a concrete example of bricolage and angles:

Further, the ‘bricoleur’ also, and indeed principally, derives his poetry from the fact that he does not confine himself to accomplishment and execution; he ‘speaks’ not only with things, as we have already seen, but also through the medium of things; giving an account of his personality and life by the choices he makes between the limited possibilities. The ‘bricoleur’ may not ever complete his purpose but he always puts something of himself into it.

As Levi-Strauss describes, ‘bricolage’ is the engagement with a continually re-arrangeable but limited set. This resonates in regards to my improvisational practice

- particularly my collection of trumpet mutes and extensions - and also because as I conceive it, improvisation by its nature ‘may not ever complete its purpose’. Additionally, the definition of bricolage in the citation above speaks to the personal aspects of a practice. Pieces of mine that I identify as having elements of bricolage are both realizations of *For Fingertips and Small Motors*, as well as *Feedback Hands, s’Tool, Sissy Fiss*, and *Tine Waves I and II*.

**Space (between)**

There are a couple of attributes that I identify with the partiality Space in my work. The first is in identifying a unique acoustic characteristic of a particular room or area and playing with and within that characteristic. The acoustic version of *Tine Waves* utilizes space in this way. Another attribute is the idea of ‘blowing up’ into space, like Stockhausen was fond of doing. I think of *Quadraphonic Trumpets I and II* as a blowing up of the trumpet into space. Another idea of space is displacement. *Library Sound Generator* displaces a sound source into the same/similar space, replicating and dispersing the original source nearby. Then there is the attribute of the *space between*. One example is in *Feedback Hands*, where the shape of the space between the palms creates and alters the sound. By picturing space and in-between as malleable (expanding, contracting, blowing up, displacing, dispersing) I wonder about the lines and limits which we use to demarcate, categorize, and sort, and how they might also be re-configured and transcended.
Filters and Focus

The partiality Filters and Focus concerns itself with strategies of ‘what and how’ we might decide to engage or perceive. Another F word for this is Frame. An example that comes immediately to mind is Cage’s 4’33”. By framing, filtering and focusing we can play down the signal and turn up the noise, or shift between background and foreground. I’d like to imagine there are limitless possibilities. Filtering and focusing is related to angles and reconfigurations because it also concerns issues of tools and transparency (concealing, revealing, highlighting, attenuating) and perceptual or intentional approach. *Speak More Clearly* engages with aspects of filters and focus, primarily as they relate to speech and expression.

Cyborgs, Chimeras, Hybrids, Monsters, Robots and other creatures

This partiality deals with another aspect of combinatory logics, of beings and things re-constituting themselves in various configurations. This partiality appeals to me because it challenges the inviolability of categories and also blurs the line between subjects and objects: what are beings and who are things?

From another perspective, a cyborg world might be about lived social and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of permanently partial identities and contradictory standpoints. The political struggle is to see from both perspectives at once because each reveals both dominations and possibilities unimaginable from the other vantage point. Single vision produces worse illusions than double vision or many-headed monsters. Cyborg unities are monstrous and illegitimate; in our present political circumstances, we could hardly hope for more potent myths for resistance and re-coupling.\(^5\)

---

Before coming to Wesleyan I enjoyed playing in this partiality a lot, particularly in my longest running duo – Marauder & Alibi – where we created monsters, made masks, and fashioned rudimentary electronic and musical prosthetics that attached to our bodies in often absurd ways. In my work here, I would say that *Feedback Hands, For Fingertips and Small Motors*, and *Quadraphonic Trumpet I and II* touch on this partiality, though perhaps in a more tangential or abstract way. I think *Ear, Noise, & Throat* and *Steth Test Two* also play with it: in regard to man-machine coupling and hopefully on the more theatrical level as well.

**Aberrations**

Aberrations deviate from the norm or fall just outside of the acceptable bandwidth. They are aberrations because while still identified as ‘being of’ a set, group, or definition, they also don’t quite fit. Further qualities of an aberration may also be its unpredictability or unexpectedness. *Speak More Clearly* makes use of aberrations, and sometimes elements of my trumpet language do as well.

**Listening Feeling**

Last year a friend invited me to a concert that had an entire wall of sub-woofers. It was bass paradise, and I could feel an amazing beating in my bones. Bone dance conduction! Another aspect I am reminded of in listening feeling – on a different level – is ‘listening to your gut’ ie: internal awareness or intuition. Both listening on the level of feeling and feeling on the level of listening play a part in my work, as process
as much as end result. Some pieces that engage with this partiality are *Feedback Hands, Tine Waves* and *For Fingertips and Small Motors*. Critically, for me the practice of improvisation deals directly with the intuitive process of listening feeling as well.

In Vermont while lying in bed at night my son often asked what the strange vibration of the earth was, until we noted that this vibration modulated into the clearly heard approach of a high-flying jet airplane some minutes after the first “felt” detection of its approach. Later we all recognized the transition of “felt” to “heard” sound which the jet displayed.6

---

IMPROVISATION

One of the most critical components in my work is the role of improvisation. Of the pieces I describe in this Thesis, nearly all of them are improvisatory to varying degrees and in various ways.

A standard methodology among the pieces in this thesis is the selection of an area of inquiry. (This could be conceived as a focus, filter, or frame.) This area is a mode of investigation of the interactions between an object and myself, and it is here where the line between the two begins to blur. This embodied blurring is an improvisational act, and as such is more about finding out than about already knowing. For example, Feedback Hands concerns itself with the interplay of hands, each with an earbud attached, to create the signals and patterns of feedback. The limits of this area, as seen in the video, can be expressed by separating my hands (the outer limits of a hand clap stop the feedback) by closing my hands from each other (fists), or by various other actions which are particular but not fully predictable beforehand.

By setting the range and limits of each area, I can now investigate what is possible within it. I learn the terrain by doing, improvisationally, and I keep it open to the extent that the performance of the piece expresses it’s identifiable structure and limits but never becomes set, or fully known. It remains open within certain parameters.

16.
Clearly, the improvisational use of the instruments violated any “designer intent” regarding designed use...the instruments are material devices that engage types of human *embodiment*, bodily actions, to produce the music phenomenon, but also *imagination* is engaged in such a way that the questions are not: *What is this instrument for? What is it? What is its design?* Rather, the questions become: *What can this thing be? What is the range of possibilities? How far can we go with this?* 

In *For Fingertips...Console Edition* audience members are themselves invited to investigate and improvise within the established area of inquiry. They can play, and play with, the instruments/fingertip mics alone or with others in duo, trio or quartet.

In *Quadraphonic Trumpet I* a score was created from the recording of a structured improvisation, which was performed in studio after investigating the area of inquiry. The notational language for the score was then developed to identify the aspects of the piece, and was written after the fact as an aid for the listener to understand the syntax and spatial character. The score is not intended to serve as a definitive or stable direction for a subsequent performance. In my practice the role of performance and notation is often inverted, perhaps closer to transcriptions of jazz solos. Sometimes I will use a notational system as a loose mnemonic device in order to outline a structure for performance, while still allowing the live version to remain flexible. A score is only used when needed for some referential purpose, but does not express a piece.

In *Steth Test Two* and in *Tine Waves (Tuning Forks for Dining Philosophers)*, the score is more closely in line with a traditional score. In both works however, the notated structure allows for ‘flex-time’ and intuitive timing of entrances and exits, as well as areas of improvisation and unknowable interactions. Increasingly in my work I’m intrigued by this combination of ‘planning’ or structuring while ‘leaving open’ as a conscious decision. This bears no resemblance to the composer ‘not knowing what he wants’.

In *Tine Waves*, which requires 7 players, the score plays a guiding but not definitive role. The tuning fork notation is intentionally left ambiguous in order to give the players the verbal instruction: play with the sense of timing in the space and then slow it down in order to find the space-between as well as the sonic overlaps. In this way I imagine bringing the players and audience together into the act of witnessing a sonic manifestation. This requires that the players understand the intention of the piece and find their own timing through the act of their own listening-feeling in the NOW, and can convey that intentionality to the audience. This sense of timing – collective and individual - within improvisation is another kind of opening. It requires focused listening and a listening feeling. I feel it as like ‘being in the pocket’ but when the pocket is multiple. And much like the non-productive nature of bricolage and counter-lineage of cyborgs, improvisation in its expression (time) does not follow an efficient course or move towards its own progress.
In *Ear, Noise & Throat* and *Steth Test Two*, as well as in *Feedback Hands*, the feedback systems themselves create open and unpredictable systems. This lack of complete system control can invite the live performance onto a razor’s edge, which is a difficult but necessary component, and much like the sense of timing in other improvisatory pieces, opens up an intensely present NOW. A razor’s edge creates an instability which allows the element of not-knowing to be present within a piece, and this is a crucial component. I regard not-knowing in its positive sense, as allowing for a heightened sensitivity rather than as the courting of ignorance or disavowal of history. It invites in the unknown and opens up the vast potential for other ways of knowing:

“…the Ra mantra, which his longtime trumpeter Michael Ray transmits to the new Arkestra and its variants today: “You’ve got to play what you don’t know. Which means you’re forever learning how to do something and then un-learning it. This is how we live.” ⁸

In my experiences as an improviser, there have been precious and rare moments when I surprise myself, when something comes out I didn’t know I knew, that I can’t ‘take credit for’. I believe we are all infinitely more complex than we can grasp, and that music – and improvisation in particular - is one of the ways we are able to engage with various ways and states of knowing.

Finally and most importantly, in my experiences as an improviser and as a listener there are others and their experiences as improvisers and as listeners. We are attempting the collective creation of social bodies: (re) assembling, configuring, and combining them in various ways throughout the world.*

*Following from what George Lewis calls a ‘transcultural musical practice’.
TELESCOPING:

*Wider thoughts on music, myths, beings, objects, technology and time*
TIME, MYTH, MUSIC

Focusing in on certain aspects and issues of my work in this thesis – issues of embodiment, technologies, and the dialogue between beings and things – has had the secondary effect of rendering them more apparent to me in everyday life. There seem to be no shortage of media stories about the blur of the biological and technological or about the lives of animals and the threshold perceptions that seem so related to the field of electronic music. And when I take stock, I realize that I live with bountiful examples of both as well. In March I was told that a colleague had to have another open-heart surgery as the pig heart valve – which has been functioning as part of his heart for a number of years – needs to be replaced every ten years. Currently some of my favorite electronic music is a live-feed of seal sounds from the Antarctic which I like to listen to at night before sleeping. The sweeps, flanges, envelopes, and oscillations of the seal sounds are uncannily familiar to me in the form of modular synthesizer sounds. Conversely, during a walk earlier this spring with a friend both of us stopped in our tracks to listen to two birds in stereo on either side of the trail. What struck us both was the human-like timing of

their dialogue. It wasn’t bird-like enough! Then later that week, while interviewing Ute for this thesis, she told me about her friend and colleague who is researching bird songs in the UK, and who has documented snippets of English folk tunes from the region that are a hundred years old, still being sung by the birds there. I find these kinds of circularities, or feedback originations, exciting.

Quite a lot has been written about concepts of time and the re-consideration of the categories nature and culture, especially as this pertains to our technological innovations within modern ideas of linearity and progress. In his book *Politics of Nature*, theorist Bruno Latour writes:

“But it can begin this exploration only if it abandons the definition of progress. There are in fact not one but two arrows of time...the first one, modernist, goes toward an ever-increasing separation between objectivity and subjectivity, and the other, non-modern, goes toward ever more intricate attachments”.$^{12}$

Significantly, Latour and others from diverse fields have begun to acknowledge the agency of objects. And while this and the quote above might at first seem unrelated to the question of music composition, I can recognize an innate connection. For instance, one of the most crucial elements of musical practice are the “intricate attachments” of objectivities and subjectivities: we merge into our instruments. We embody them, they extend us, and they can be said to have an existence of their

own: we meet with their realities and resistances and so we must begin to relate with them, to engage and shift. George Lewis talks about the critical process of a musician finding her voice, which can be viewed as a partial function of the inability to realize the voice of another. This has been my experience with the trumpet, however I’d like to add that for me this process has also been a struggle and negotiation with the object: the instrument and I finding our voice together.

I visualize my practice as a kind of blending into the objects, tools, and technology that I use, a mutual re-shifting. Latour describes this ontological blending as such:

“We should be talking about morphism. Morphism is the place where technomorphisms, zoomorphisms, phusimorphisms, ideomorphisms, theomorphisms, sociomorphisms, psychomorphisms, all come together.” 13

Returning now to the circularities and the idea of feedback origination at the beginning of the chapter, I’m struck by how closely our current emerging technologies – animal-human hybrids, cyborgs, chimeras, investigations into artificial intelligence and more human-like robots – are inscribed in myth. Many ancient stories and myths concern themselves with the “intricate attachments” of subjectivity and objectivity and the very same morphing phenomenon described in the quotes above – in the merging of animals, humans, and machines and in the animation of

objects. By current definition, Osiris was an early cyborg and the Golem was an A.I. being (the hardware was mud, the crucial software the certain word inserted in his mouth). Chimeras like the Minotaur and the musical bird-humans known as the Sirens were predecessors to current experiments in genomic innovation and hybridity being carried out by research institutes for future commercial and military means. It’s hard not to notice that the more technologically advanced we become, the more we are playing through much earlier scripts: ancient myth to threshold sci-fi.

In this direct link between ancient myth and futuristic technologies I’m reminded of Sun Ra. Maybe Attali’s musical model of heralding was of a non-modern sort, in which case Sun Ra speaks directly to Latour’s concept of this non-modern arrow by providing us with a model of historical heralding. Ancient Egypt and a sci-fi techno future. Myth and new technology. Other ways of knowing. A concept of communication with radically other subjectivities. A non-linear proposal of time coupled with a deep knowledge of history. I see in some aspects of Sun Ra – the self-proclaimed scientist – an early example for many of the ideas of non-modernity within a musical context. I’m also reminded of the great experimental music group The Art Ensemble of Chicago, whose credo was Great Black Music: Ancient to Future, and of their master trumpet player Lester Bowie, donning his lab coat on stage.

14. Jacques Attali, Noise: The Political Economy of Music. (Minneapolis: University of Minnesota Press, 1985) 4. Atalli referring to music in Noise: “It heralds, for it is prophetic. It has always been in its essence a herald of times to come”.

25.
The storm irresistibly propels him into the future to which his back is turned, while the pile of debris before him grows skyward. This storm is what we call progress. – Walter Benjamin (from “On The Concept of History”)
I'm like a man walking into the future backwards. – Marion Brown
It’s after the end of the world. Don’t you know that yet? – Sun Ra
The future is already here, it’s just not evenly distributed. – William Gibson
GORDON MUMMA

In one of the videos from Robert Ashley’s series *Music with Roots in the Aether* 15, Ashley interviews Gordon Mumma. Although Mr. Mumma works on a higher and much more knowledgeable level than I do technologically, I can recognize some commonalities and also interesting differences, both of which help shed light on aspects of my own work and provide another thread of connection*, among many threads.

Mr. Mumma talks about his concept of folk instruments in our modern technological culture. He states that ‘electronic instruments can also be folk instruments’ and identifies his own creations as folk instruments. He identifies some aspects of such instruments:

- not about age: they are invented all the time
- allow for a great range of virtuosity
- vast expanse of ‘technology’: ie: high and low
- often use cast-off commerce or technology (reconfigurations)
- not mass produced, no strong standardization
- not consumed in mainstream culture
- no broadly useful function

At some point Robert Ashley asks him, regarding his folk instruments: “how legitimate are your electronics?” Gordon Mumma replies:

---


*Also, he’s a horn player.
“Well, you mentioned about what the engineers would think of what I do. I’m on the edge all the time of uh, well, disrespect. Disrespectful attitudes towards the sacredness of the technology.”

He goes on to describe using the cast-off engineering, military & commercial technologies to make ‘something out of nothing’ by ‘looking at it another way’. This reminds me of the angles of bricolage, and follows also directly from Levi-Strauss in his differentiation between engineer and bricoleur. The rejected parts element resonates with me in my own reconfigurations, and the embrace of illegitimacy as a working model reminds me of my relation to aberrational elements within a working process. He tells a story of how a bricoleured object can find unanticipated uses between users:

“I made a box for David Tudor once….he had used one that I’d made for somebody else and he wanted me to make him one. So I made him one…and I sent it off to him in the mail and some months later he showed up in town ‘cause he was doing a concert with John Cage you remember on that roof at the parking garage. And he had this thing and he wasn't using it the way it was designed for use. There were a certain number of inputs and a certain number of outputs and he had outputs plugged into inputs and he had inputs going into outputs and other things that had nothing to do with the original conception of it or what it was for. But he had a whole thing going. He had a spectacular musical thing going. And it's not that he misunderstood me. There was no misunderstanding at all. It was just that he asked me to make him something and I had one point of reference and he had another...perfectly reasonable. Perfectly reasonable situation that's a kind of ‘folkloric usage’.

One area where I can identify some difference is in the beginning conceptualization of a piece. Mr. Mumma states that it more often begins for him with a ‘technological concept’ rather than a sound idea. Perhaps it’s due to the technological complexity of
his work in contrast to the relative simplicity of mine, but in general I approach a
piece by stumbling upon a sound configuration that intrigues me while engaging in a
physical configuration as well. In this sense I would liken my own practice to a kind of
tandem ‘listen and touch’ method, with the conceptualization of a piece emerging
from the process of sound and material investigation itself, rather than the sound
emerging from the conceptualization. Maybe with a bit more working knowledge of
circuitry I would begin to envision my projects in a more ‘technologically conceptual’
way as well. I don’t necessarily see this as a lack though - rather as a difference in
working methodology, possibly due to a different knowledge set or level of expertise.
From my perspective, both approaches have valid conceptual and sonic standing,
regardless of which was the precipitating factor.

In the second half of the episode, some of Gordon Mumma’s works are shown. Here
I was able to see and hear some of the work and recognize other elements that
resonated with me. In Some Voltage Drop I the actors wear the technology on their
bodies. Additionally, there is a distinct sci-fi theatricality to the video, with the
landscape and costuming alluding to other planets and spacemen. The camera
angle is detached and moves as if it is providing surveillance. The camera has a
telescoping lens which in certain shots creates a slightly rounded image - calling to
mind a telescope or other scientific viewing device. In a description in Mr. Mumma’s
bio, (it’s unclear to me whether this relates to the backpack telemetry system used in
Some Voltage Drop) one of his developed technologies is described as: “Ambivex, a
surrogate myoelectric telemetering system with pairs of performing appendages”. Who exactly are the appendages to which Mumma is referring? Are people, who are wearing his technology, the moving appendages of a kind of techno-conceptual system? Or are they embodying a technology which is an extension of themselves?
UTE WASSERMANN

Ute Wassermann is a vocalist and a colleague in Berlin. We play together in the quartet AnimalNacht, with Felicity Mangan and Olaf Hochherz. The quartet focuses on creating improvised sonic eco-systems from field recordings, computer synthesis, and extended vocal & trumpet techniques. Last December I attended a salon where Ute had been invited to talk about her work. I was surprised by some of the areas of overlap we share in our practices, which I hadn’t known about despite playing with her on a pretty regular basis. I met with her in March to talk with her more. Here she explains a bit of her biography and the arcs of her practice.

Liz: What is the relationship between voice as an instrument and the extension of the voice for you? Or, what happened between moving from a flutist and extending the flute towards moving into someone who uses their voice, and then extending that voice outwards.

Ute: Well, I think in some ways it’s my personal biography. I did music all my life basically…my childhood I learned instruments and we improvised at home. It was always part of my life. But then in the beginning of the 80s when I was looking for a place to study I kind of
didn’t want to study classical music because for me it didn’t seem to be right – although I loved doing it but just as one part of my life. I couldn’t imagine to work in the orchestra as a flutist…because in Germany the schools were very very academic. I think it was probably different in the States, I know it was different in the States. There were lots of really interesting composers teaching. There was the extended…Phil Larson in San Diego, Pauline Oliveros and the Extended Vocal Techniques Ensemble and all this I found really exciting but there was no way I could study this kind of music in Germany, it was still very academic. Then when I was 16 I saw a performance by Laurie Anderson which really impressed me. She was very young and wasn’t a pop-star yet. She was performing in a squatted house – this was a festival in Hamburg and she was doing just a solo performance with a violin and a tape bow, these tape bow pieces. I was very impressed how the instrument would turn to project this…because she would move the bow in the air and suddenly it would be a screen, or she would play a tape backwards and forwards or talk with her violin, and there were lots of, you know, a whole evening with concepts like that. I ended up then being accepted at the art school in Hamburg. Because I looked at music schools but I heard that that art school was a very experimental place. So I just showed my works there and they accepted me, surprisingly. (laughs)
...it was really a very experimental place and lots of artists from Fluxus movement came teaching, and basically what I did is that I started studying music at art school. Once a week we would meet and the artist I worked with Claus Böhmler...in his class there were film, performance, it was really mixed media which I was very attracted to. I started doing performance pieces. I did huge drawings which I didn’t realize at that time but if I look at them now they were really concepts or almost like scores with rhythms. I worked with pencils, also mixed media but they were huge, long like story boards but really kind of performative drawings, which I wasn’t so aware of but if I look at them now I think they look like scores. Musicians came to do workshops or teach, and I always worked with them, the guest professors.

I got more and more into music and I think working with extensions in some way is coming from my work as a young art student - that my thinking about music is still influenced by visual arts, in the way that I think about space, or when I think about sound I look at it as an object or as something...also if I sing I imagine the space of my body or the outside space in relation. Or how I project the sound in space and how I work with the sound in my body, or outside. I obviously work with very clear images, also if I do workshops. I'm not so concerned
with notating precise rhythms or pitches. I do work with pitches and rhythms but it's more this approach of visualizing the sounds for myself. I'm not so interested in notating it precisely.

And then I was always interested in singing in art school and I got in touch with the works of Meredith Monk, Diamanda Galas. Joan La Barbara, we met there. And John Cage came also. We did projects with Cage and Nam June Paik, Kosugi, Merce Cunningham. Whoever would come to town, to Hamburg, would pop in at art school and do something with us. So it was very exciting in a way. So I got all these inspirations and influences and I think that really shaped my thinking about music more than if I probably would have studied singing….

At that time also I worked with my flute. But I just found that flute at some point a really boring instrument. (laughs) I was just looking for ways to do something with it. So I started working with these microphones on the keys…it started that I would put contact mics on the keys and play with the rhythm. And then I thought I had this salad of cables and it didn’t look very nice, so one performance I decided to set it up as if I would perform in a ‘noten system’…like a…
L: like a staff...

U: yeah, so that was one idea...and so I was exploring the touch of the fingers, the rhythms and I started exploring taking the flute sound further, and that’s how I got more and more into voice. So I did a whole series of these works....I mean this started truly with the sound. Then looking at the flute I thought – oh the fingers do all these things, just looking at the object. And then the music came and then the visuals came. I didn’t think in the beginning oh I want to do something with the staff lines. That was the next step that then I improvised with the material. And then at that time friends told me oh but the sound isn’t so interesting, the tapping – why don’t you use electronics to make it more interesting? But at that time I wasn’t interested to work in that way, it was truly the object and keep it very simple.

*Ute talks about extending the flute further and developing flute and tape pieces with which she began to concentrate on the voice. She continues:*

U. And then, feedback, speakers, microphones, kind of grew out of these tape and flute pieces. I started doing these pieces for my voice where I would attach speakers to my body. Very simple actually, with two speakers and with panning and I had two microphones. One
microphone was for my natural voice, and the other microphone would sit here, and then this sheet metal would vibrate (wearing them over speakers) and made really cool sounds, almost like chords. And then I would take the vocal mic and then it would be amplified. And the amplified sounded really great with this vibrating metal. So I kind of really wrote down gestures, so this gesture would be singing through these speakers, this would cause feedback which I amplified which sounded really cool through the metal....so I just investigated really what I could do with that concept. So in some ways these pieces were pretty conceptual because you would have the object and the object would tell me what to do, almost like an instrument, I would go the limits and explore it. And the sound exploration was always improvisational, you know?

L: And when you say the object “told you what to do?”

U: Because it gave me a kind of frame. It’s like an instrument, basically the same - you have an instrument and you investigate the possibilities. So this was kind of a self-built, custom instrument.
It was then the thing with all these ideas was that, you know I did it all myself, soldering and building it and it got bigger and bigger and bigger, and at some point I think I’d have needed a team to work with me or a technician or someone to work with me, if I had followed. But then I discovered my voice more and more, singing through these things and somehow I started feeling uncomfortable with spending most of my time building all these things and soldering and not having time to prepare the concert actually, to practice, you know? This was a kind of clear decision….I stopped it for awhile.

(She mentions that she stopped building large-scale instruments but that to this day she still uses some of the electro-acoustic vocal extension objects that she built then...)

U: I did that gong also, which I still use (pointing to picture). That’s with a piezo, and am doing pieces for that now. And I have a kind of speaker object prepared with the cork and felt and then when I sing with that speaker I touch the gong and the gong takes the resonances of the voice, whispering or consonants. It’s like an instrument for the voice, but very simple technique and very easy to handle. The other things were quite fragile and got bigger bigger. So I decided okay, I just stop this for now and focus on my voice. Because you know, all
these sounds, all these multi-phonic sounds – while I was working with this I realized I discovered them in my body actually and I found that interesting too. And I thought wow, that’s a great sound and started then really working on these sounds to memorize them and just do them with my body.

L: I always find it interesting how the more “out” you get, the more “in” somehow.

U: Yeah, and it had that effect actually. One concert that went really wrong I thought this is so nerve-wracking. And okay, at the moment I’m not the boss-type to say: ‘you do this for me and you do this for me, and I decide’. So I re-focused.
CONCLUSION

Like Ute, the story of the extensions and embodiments of my practice is biographical, and I can trace the arcs of my own telescoping and microscoping – of various influences and how they manifest in my incorporation of them – over many years. Towards the end of our conversation, Ute remarked that she has begun to return to ideas she began with 25 years ago, incorporating again more elements of performance art into her practice. She noted how good it felt, to experience this kind of holistic cycle.

I can attest to this as well, as I also began my studies in the visual arts. Discovering Fluxus was for me a seminal moment for a number of reasons. For example, I had grown up hearing about Yoko Ono as ‘that woman who broke up the Beatles’. But here she was, a formidable artist in her own right, and there were these streams of thought and action – Action! – flowing seemingly unnoticed through our culture. This for me was like a revelation, and it was when I began to think about concepts of time, and as time itself as a medium.

Shortly after that – by chance really – I heard Leo Smith in a performance of his solo trumpet music. The impact of that concert was similarly revelatory. It was the first
time I heard music that directly affected me. Later that year I heard the Braxton Tentet live at Yoshi’s, and for the third time in just over a year, my mind was blown.

All of these – and countless more since – are the currents which run through my practice. Like my partialities, they inform my work in various ways and combinations over time. Sometimes elements seem to disappear, but I think they’re just not floating near enough the surface to be seen.

While at Wesleyan, I’ve sensed a more holistic reckoning in my own practice. I’ve been able to go back to some of the earliest elements of my work – visuals, video and performance art – and incorporate them with the improvisational instrumental sound practice on which I’ve largely focused over the last fifteen years. At Wesleyan I’ve returned to objects, but I haven’t discarded the element of time or the qualities of sound which they might engender.

For me the themes of this thesis – embodiment, extension and the relationship to things – are a means of talking about a kind of way-of-being in the world, which is another way of saying, on a personal level: a means to wonder and marvel at it all.
WORKS
QUADRAPHONIC TRUMPET I & II

Quadraphonic Trumpet I was originally conceived and performed in October 2011.

Quadraphonic Trumpet II was performed as part of my Thesis Concert in May 2013. This realization made use of a microphone built by Sukandar Kartadinata. The microphone has four discrete channels with a separate switch for each, so that each channel can be expressed both acoustically and electronically (amplified).

In both Quadraphonic Trumpet pieces, I investigate methods of exploding the trumpet in space and of imploding it back in again, de(re)constructing the instrument in an electro-acoustic context.
Basic Schemata – Each valve (v1, v2, v3 plus Bell) corresponds to one of four speakers in the room.
First the trumpet was altered by removing some of the metal tubing, so that each trumpet valve controlled a separate channel, or voice, on the horn. Small custom-made bell attachments replaced the tubing which had been removed, so that the trumpet had 3 bells in addition to its original bell at the end of the horn (please see corresponding photographs). Each of these individual bells, or channels, was amplified using microphones, with each assigned its own speaker in the room.

I then looked to identify sonic areas (ie: possibilities of an extended language making use of theme, pattern, combination and repetition) and internalize the map of fingers/embouchure/valves to speakers in order to compose and play the object, space and material with fluency.

This internalized mapping process is an important element in this piece for me. I consider the re-configuration to start at the body, where the fingers must learn a new association with the trumpet and a new meaning for the routing of air through the valves.

The studio recording associated with the score was made in the fall of 2011. It was recorded live in quad (4-channels) and has been mixed to stereo for documentation purposes: two channels have been panned far left and right, the other two channels have been panned mid-field left and right. The score was created by listening to the structured improvisation and transcribing a notational system.*

*For more on this, please see the Chapter on Improvisation.
Quadraphonic Trumpet in 4 Parts – Score

Movements I, II, III, and IV labeled in the score correspond to the four audio tracks named ‘Quadraphonic Trumpet’ I, II, III, and IV, respectively.

Glossary/Legend of Terms – Extended Technique:

Buzz - *
Flutter Tongue - flz
(Blowing Flutter Tongue – B flz )
(Slow Flutter Tongue – S flz)
(Throat Flutter - T flz)
Grun/Gutteral – { }
Hiss - --------------
Inhale - >
Exhale - <
Spit – sp
Squeaks - +
Stacatto Tonguing - ///
Suck – “
Tongue Slap - ^
Vocalization (through horn) – vc
Whistle (through horn) - wh
<table>
<thead>
<tr>
<th>Bell</th>
<th>&quot;&lt;&lt; &gt; sp&gt; &lt; ^ &gt; &lt; &lt;&lt; &lt;&lt; flz...</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1</td>
<td>^ &gt; &gt; &lt; &lt;&lt; &gt;&gt;’” &gt;</td>
</tr>
<tr>
<td>V2</td>
<td>” }&lt;&lt;&lt;&lt; &gt; &lt; &lt; &lt; ^ ^ ^ ^” &lt; ^</td>
</tr>
<tr>
<td>V3</td>
<td>&gt; &gt; &gt;&gt; &gt;&gt;&gt;’” &gt; &lt;&lt;&lt;&lt; flz..</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Time</th>
<th>V1</th>
<th>V2</th>
<th>V3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:30</td>
<td>&lt;-</td>
<td>flz</td>
<td>&lt;-</td>
</tr>
<tr>
<td>1:35</td>
<td>flz</td>
<td>&lt;-</td>
<td>&lt;-</td>
</tr>
<tr>
<td>1:40</td>
<td>....</td>
<td>&lt;-</td>
<td>&lt;-</td>
</tr>
<tr>
<td>1:45</td>
<td>&lt;-</td>
<td>flz</td>
<td>&lt;-</td>
</tr>
<tr>
<td>1:50</td>
<td>&lt;-</td>
<td>flz</td>
<td>&lt;-</td>
</tr>
<tr>
<td>1:55</td>
<td>&lt;-</td>
<td>flz</td>
<td>&lt;-</td>
</tr>
<tr>
<td>2:00</td>
<td>&lt;-</td>
<td>flz</td>
<td>&lt;-</td>
</tr>
<tr>
<td>2:05</td>
<td>&lt;-</td>
<td>flz</td>
<td>&lt;-</td>
</tr>
<tr>
<td>2:10</td>
<td>&lt;-</td>
<td>flz</td>
<td>&lt;-</td>
</tr>
<tr>
<td>2:15</td>
<td>&lt;-</td>
<td>flz</td>
<td>&lt;-</td>
</tr>
</tbody>
</table>

Bell

- flz...
- flz...
- flz...
- flz...
- flz...
- flz...
- flz...
- flz...
- flz...
- flz...
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:15</td>
<td>Bell</td>
</tr>
<tr>
<td></td>
<td>flz</td>
</tr>
<tr>
<td></td>
<td>flz</td>
</tr>
<tr>
<td></td>
<td>flz</td>
</tr>
<tr>
<td></td>
<td>flz</td>
</tr>
<tr>
<td></td>
<td>flz</td>
</tr>
<tr>
<td></td>
<td>sp&gt;</td>
</tr>
<tr>
<td>2:20</td>
<td>V1</td>
</tr>
<tr>
<td></td>
<td>flz</td>
</tr>
<tr>
<td></td>
<td>&gt;</td>
</tr>
<tr>
<td></td>
<td>sp&gt;</td>
</tr>
</tbody>
</table>
|     |       | ***************
| 2:25 | V2    |
|      | <     |
|      | sp>   |
| 2:30 | V3    |
|      | flz   |
|      | <     |
|      | >>    |
|     |       | *****
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:45</td>
<td>Bell</td>
</tr>
<tr>
<td>3:50</td>
<td>V1</td>
</tr>
<tr>
<td>3:55</td>
<td>V2</td>
</tr>
<tr>
<td>4:00</td>
<td>V3</td>
</tr>
</tbody>
</table>

**Bell**

```javascript
{vc} {vc} {vc}   ///viz{ }{ }{ }{ }{ }{ }
```

**V1**

```javascript
{} {vc} {vc}   ///wh{ }{ }{ }{ }{ }
```

**V2**

```javascript
{vc} {vc} ^ {vc} ^ ^ ^ ///viz{ }{ }{ }{ }
```

**V3**

```javascript
{vc} {vc} {vc} ^ ^ ^
```
For Fingertips and Small Motors

For Fingertips and Small Motors was designed, developed, and performed in the fall of 2011. In this piece I sought to make a unique electronic instrument that relied on an embodied connection with a machine. The instrument consists of two parts: wearable fingertip contact microphones, and small spinning motors and mechanisms. Physical contact between these elements creates the various sounds, textures, and oscillations.

The audio recording was made by improvising with the instrument over a period of some months, in order to identify and become familiar with the possible sounds and to become more physically fluent with the layout of the motors and the contact of the fingertips to them. The score was made after the fact and reflects the structure and sonic areas through a simple mapping of the physical location of the motors and mechanisms.
Pictured above are the small motors and internal mechanisms from discarded walkmans and dictaphones. The motors and mechanisms each have their own particular sonic palette and properties.

Contacting the spinning motors and parts with the piezo fingernails provides the friction necessary to create various electronic oscillations.

The numbers indicate these various contact points.
Pictured above are self-made Fingertip Microphones.

The microphones can be worn on one or both hands. They were fabricated using piezo discs attached to metal banjo picks. Each microphone connects to a discrete channel on a mixer.

When brought into contact with spinning motors and mechanisms, various sonic oscillations are created.
‘For Fingertips and Small Motors’ - Score
For Fingertips and Small Motors: Console Edition
For my Thesis Concert, I decided to make two instruments utilizing the motors and fingertip piezos, and give them to a pair of colleagues to play. The instruments were housed inside two ‘Franklin Mint’ wooden coin boxes that I found at the Goodwill. The motors were arrayed inside foam matting, the wiring was laid underneath the foam to the back of the box where a power connection was drilled and an adaptor/wall-wart could be inserted.

Four new fingernail piezos were wired up and covered in plasti-dip. Then the boxes, fingernails, cables, and power adaptors were given to Will Northlich and Nestor Prieto to familiarize themselves with the instrument for a few weeks before the concert in order to prepare for a 4-5 minute improvisational duo.

Another aspect of the ‘Console Edition’ models was to invite the audience to try it out at the end of the concert, so that people could wear the fingernails and play with the sounds. Finally, one of the boxes will travel with me this summer when I and a colleague will team-teach a children’s improvisation and listening workshop in Moers, Germany. My hope was that by opening up the instruments to audience investigation and to the children’s workshop I could extend the embodiment of the instrument in a socially pertinent way by inviting people:
1.) To interact with the instrument in order to create their own touching/listening experiences.

2.) To have the possibility to engage in sound making with others - perhaps expanding the social experience in wholly unpredictable ways.
LIBRARY SOUND GENERATOR

In my first few weeks at Wesleyan, I came upon a large motor on the third floor of the library. It’s sound was instantly magnetizing: it sounded so many different subtle pitches, rhythms, and textures, and these changed and merged into and out of the field of perception depending on where the listener stood. I found I could hear it one floor below, and by two floors below could only imagine its traces. It was comforting to be around and I often studied in that area of the library. Sometimes I went just to pay a visit. I wondered about how other people might engage with it, and thought of ways to stretch it, magnify some of the acoustical aspects, and introduce it to others.

Library Sound Generator was realized in late November 2011 as a site-specific installation within the Wesleyan University Library. In this piece I was interested in environmental sounds and their spatial and acoustic re-contextualization. My aim was to identify and magnify the multiple properties of a particular sound within a space in order to probe the subtle characteristics of sonic phenomenon and to point towards an embodied act of listening.

The large motor and ventilation system (machine) on the top floor of the library was recorded from various positions. Each recorded track of the machine was then filtered to isolate the particular frequencies that each recording position was able to capture in the room.
These six filtered tracks were then hidden with mini-speakers in the stacks two floors below, and reproduced in an approximately similar position, at a minimal volume level at or below the original volume of the machine.

The audience entered from this bottom floor. As they climbed to the next floor, the sound of the filtered tracks slowly disappeared and the sound of the real-time machine slowly emerged. Finally, on the top floor, the sound of the source machine in the space became a sonic object of reflection: a point of arrival or departure for listening.

Since researching this thesis, I've become more curious about how machines might ‘talk’ in our everyday lives. In her essay ‘Listening to Machines’, Karin Bijsterveld describes car-owners and their sounding cars:

“Car handbooks for the early generations of mass motorists often included sections explaining to drivers how to listen to their cars. These books literally clarified how the car 'spoke' to the driver. A ‘sneezing’ car had something to ‘tell’ about an obstruction in the spray nozzle of the tube from the carburetor’s mixing chamber. A ‘trained ear’ could hear that this sneezing never started overnight, but announced itself by the change of engine pitch and rhythm. ‘Pinking’ and ‘conking’ recounted more serious problems. A German author compared the sounds of cars to those of musical instruments, assuming that this would help with identification: ‘Engine is pounding (muffled timpano): bearings disrupted.”

Reading this, I was instantly reminded of a conversation I had a few months ago with a friend who is currently doing a sound & computer-programming gig for a custom electronic racecar. He was recounting to me how the car, which is very powerful, needs to sound to the driver as if it were a more conventional car with a recognizable tone and gears. We had a good time thinking of what kind of secret button he could program which would cue the sound of horses’ hooves.
Library Sound Generator - Spatial Score

Sound Source: Large Motor and Ventilation Duct

Sound Source: Recorded from various positions on floor 3

Audience moves upwards

Sound Source Playback: Filtered for specific resonant frequencies and reproduced on floor 2, reflecting original recording position

Wesleyan University Library, Floors 2, 2A, 3  November 2011
Library Sound Generator: Machine, Stairs, Stacks

Wesleyan University Library, November 2011
start here
use the staircase
marked on the map
to move up two flights,
to floor 3,
at your leisure.
Speak More Clearly was initially a British instructional video, aimed at teaching the proper pronunciation of the ‘th’ sound*.

While the subject matter was meant to focus on just the ‘th’ phonemes, it was the sibilance in the video which drew my attention, until I was primarily hearing the occurrences of the S (and sometimes T or D) sounds of the spoken text instead of the original content. This noise or secondary attribute of the spoken text was much more interesting sonically: at times there was even a nearly rhythmic flow to the sibilance.

In order to isolate these phonemes, I located the audio bandwidth of the S (including soft C) and T/hard D sounds (these most often fell at the end of words). I then eq’d this bandwidth up, and eq’d the rest down. It was then possible to open the audio file and see the phonemes as higher volume peaks in the waveform, which allowed me to edit out all phonemes besides S (including soft C) and the clipped T/hard D sounds and replace them with silence.

At this point the residual visuals had become more stressed and accentuated – the face in the video speaking without, or separated from, the voice – which in turn became a jumping-off point for the unzipped sound and gesture investigations of the stethoscope performances…

*on first viewing it (on youtube) I was reminded of the ‘Rain in Spain scene’ in My Fair Lady.

69.
"Accent - ad cantum - is something which brings the voice into the vicinity of singing, and a heavy and codified. After all, it is a norm which differs from the ruling norm - this is what makes it an accent is deeply wrought by the class division; there is a constant 'linguistic class struggle' which underlies its constitution, and we need only remember Shaw's Paviland for an egregious
demonstration."

"Accent suddenly makes us aware of the material support of the voice which we lend immediately to the voice in its passage through the throat. You will feel the tongue tickle a bit as you do this. Do not let go of your top teeth on your tongue too quickly. Notice how I use my tongue, lips, teeth, jaw position, and face muscles to make the sound. Now, I will say the sound in some words: THIS THIS THIS THIS.

"HELLO FROM SPEAK MORE CLEARLY. WE ARE GOING TO LEARN HOW TO SAY THE VOICED ‘TH’ SOUND. THE ‘THHH’ SOUND. THIS SOUND IS MADE BY STICKING THE FRONT PART OF YOUR TONGUE OUT BETWEEN YOUR TEETH. FIRST, STICK YOUR TONGUE OUT ONLY A LITTLE BIT. THEN FEEL YOUR TOP TEETH VERY GENTLY TOUCHING THE TOP SURFACE OF YOUR TONGUE. WHILE HOLDING YOUR TONGUE IN THIS POSITION, BLOW AIR OUT OVER YOUR TONGUE AND SWITCH ON THE VOICE IN YOUR THROAT. YOU WILL FEEL THE TONGUE TICKLE A BIT AS YOU DO THIS. DO NOT LET GO OF YOUR TOP TEETH ON YOUR TONGUE TOO QUICKLY. NOTICE HOW I USE MY TONGUE, LIPS, TEETH, JAW POSITION, AND FACE MUSCLES TO MAKE THE SOUND. NOW, I WILL SAY THE SOUND IN SOME WORDS: THIS THIS THIS THIS.

"Accent suddenly makes us aware of the material support of the voice which we lend immediately to the voice in its passage through the throat. You will feel the tongue tickle a bit as you do this. Do not let go of your top teeth on your tongue too quickly. Notice how I use my tongue, lips, teeth, jaw position, and face muscles to make the sound. Now, I will say the sound in some words: THIS THIS THIS THIS.

"Accent suddenly makes us aware of the material support of the voice which we lend immediately to the voice in its passage through the throat. You will feel the tongue tickle a bit as you do this. Do not let go of your top teeth on your tongue too quickly. Notice how I use my tongue, lips, teeth, jaw position, and face muscles to make the sound. Now, I will say the sound in some words: THIS THIS THIS THIS.

S’TOOL
The first version of S’ TOOL was performed in March 2012, of which the following score is a reflection. The original target audience size was small, with an ideal of 5 people. A variation was performed for my Thesis Concert under the moniker: Sissy Fiss.

**S’ TOOL:**

**ELEMENTS:**
- Stools
- Large (stool-sized) color photograph of a stool
- 8.5x11 Letters – Sx2, T, Ox2, L
- Double-sided sticky tape
- Tacks
- Sneakers

**PREPARATIONS:**
The photograph of the stool should be attached to the wall, beginning from the floor up. The actual stool object should be placed just to the side of it. On the wall, the letters spelling out S T O O L should be attached to the wall with tape, high enough to be just out of reach. The shoes should have tacks placed throughout their little rubber souls, and should then be placed at the foot of the stool.
DIRECTIONS:

- Enter carrying the remaining S in your hand and sit on the stool. Put on the shoes.

- Skate and slide on sneakers to another stool in the room, push it towards the ‘performance area’. The shoes slip. Noise of stool and slipping shoes. Sisyphus.

- Continue slipping and pushing until stools are corralled. Sort them in varying ways (size, color, shape, etc.). Noises.

- Put a stool or two near the wall and climb up.

- Balancing carefully on the stool, pull a tack out of the rubber soul of your shoe.

- Use it to add the S in your hand to the end of S T O O L S.

- Take off a shoe. Use it as a hammer to secure the tack. Drop the shoe.

- Reach over and peel off the first S, sort it by applying it to the last S, so it now reads T O O L S.

- Peel off an O. sort it onto the other O.

- Move L to where the initial S was.

- Move T to where the L was. Now it reads L O T S.

- Array stools in a circle in ‘performance area’.

- Sit with the audience. Talk.
STOOLS

- peel off an 'O'. Sort it onto other 'O'.

- there where initial 'S' was.

S'TOOL Sketch
Ear, Noise & Throat

Ear, Noise & Throat was an improvised performance piece developed through material investigations in the studio over a period of a couple months. A stethoscope with a microphone place at the end of the tube, about 12" from the diaphragm, was attached with velcro rip-ties just at the soft spot under the adams apple. It captured throat sounds, vocal sounds, and heartbeat sounds which could be filtered or highlighted by eq’ing its channel on the mixer. The performance took place at a podium in darkness. On the podium was a clip-on mic running to a second channel on the mixer, which allowed for the instigation of a feedback circuit with a small earbud in my mouth (the earbud was plugged into the headphones out). The clip-on mic also served as a sort of visual prop like the podium. The mixer was on the podium just at my hand to allow for the mixing/eq’ing during the performance. The lighting was a bedroom lamp with a toilet paper roll over it, taped over into a small square, to create only a narrow window of light.
The lamp was on the podium. The performance was approximately 6 minutes. Through my investigations I had developed an idea of how to start the improvisation, but standing at the podium at that moment my heart was beating loudly and I made the spontaneous decision to filter and isolate the heartbeat sounds and to begin the performance from there.

Stethoscope Microphones
Steth Test Two

*Steth Test Two* was a follow-up from *Ear, Noise & Throat*. In *Steth Test Two* I was interested in expanding the material investigations out to other performers, as well as creating a different ‘dramaturgical field’ using pacing, expression and movement, stage-setting, and lighting. I asked two vocalists, Stephanie Trotter and Andrew Colwell, if they would be willing to perform the piece, and then met once with each of them to get a sense of what their voices and language was like.

The sounds and movements/expressions in Act I are conceived as being one ‘group’. Each performer has three of these sound/movement/expression ‘groups’. In Act II and III, combinations of silence, sound, movement and lighting are highlighted. At one point Player 1 is only gesturing with lights, while Player 2 is sounding in darkness.

The lighting was a combination of two work lights, filtered by pie-tins with a small hole cut. These were placed a few feet in front of each performer and were turned off abruptly after Act I. Act II used thin light-sticks that were attached to black gloves worn on Player 1’s hands. In Act III, Player 1 continued with the light-stick socks, and Player 2 turned on his hand-held lighting which beamed from his lap to his face, shining red.
In Act III the sound of the eq'd signal was brought up until feedback was reached. The Players were frozen in their face gestures, eventually cutting their lights. The sound stopped shortly after that.

A theatrical inspiration for the pacing, setting, and to some extent, the lighting of this piece came from a long admiration of Samuel Beckett's short work *Come and Go*, which is a combination of duos made from the gossiping trio of three old ladies sitting on a bench.
STETH TEST TWO
Setting: A Play in 3 Acts.

Two Chairs. Two work lights in front of chairs, casting shadows against the back wall. Two Players, each sitting in a chair, each with stethoscope microphone on throat. Player 1 is wearing ‘light stick socks’. Player 2 is wearing ‘headlamp hand sock’. Act 1: Hands remain on laps, unilluminated. Work lights on. Act 2: Work lights out. Player 1 hand lights up. Act 3: Player 2 hand light up.

Stereo Mix, subtle panning.

1. MONO-DIALOGUES: Slow Motion, Each Player has three sets of movement/sound/expression + pause/silence

An attempt at dialogue in a viscous bubble, an old couple talking about the weather, modern dissociative disorder, the everyday.

SLOW! Lots of space between!

<table>
<thead>
<tr>
<th>Player 1: (Stephanie)</th>
<th>EYE/HEAD</th>
<th>FACIAL EXPRESSION</th>
<th>SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, Nodding</td>
<td></td>
<td>Smile, Eyebrows</td>
<td>High Pitched Inhale</td>
</tr>
<tr>
<td>Turn slowly toward Player 2, Then back towards center</td>
<td>Cheeks Blown Out</td>
<td>Rolling R’s</td>
<td></td>
</tr>
<tr>
<td>Nodding and turning left and right almost as if to a beat. Eyes panning.</td>
<td>Smile, Teeth, Enunciation Heavily Accented</td>
<td>II: Ta Ta Ta Ta</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Player 2: (Andrew)</th>
<th>EYE/HEAD</th>
<th>FACIAL EXPRESSION</th>
<th>SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, Shaking</td>
<td></td>
<td>Jaw Dropped, Concerned, Mouth opened</td>
<td>Low ‘Ohhh’</td>
</tr>
<tr>
<td>Turn slowly toward Player 1, Then back towards center</td>
<td>Lips closed and pursed</td>
<td>Multi-phonics w/mouth closed</td>
<td></td>
</tr>
<tr>
<td>Eyes Closed</td>
<td></td>
<td>Grin</td>
<td>E E E E E</td>
</tr>
</tbody>
</table>

Duration: approximately 4 minutes. End Frozen in Silence. Liz: LIGHTS OUT.....
2. HANDS AND ISJREE  Duration: approx. 3 minutes

**Player 1:** Raises hands from lap, making sure to keep the lights facing away from audience so effect is one of glowing. Brings hands up to side of face, then forward, up to forehead, then forward. SLOWLY. Changing frozen expressions. Freeze at side of face when Player 2 stops harjita (ie: silence and hand light on).

**Player 2:** Harjita in darkness. When finished, silence, turn on hand light.

3. HEARTBEATS AND FEEDBACK:  Duration: approx. 2-3 minutes

**Player 1 + 2:** Sitting in silence (breathing as quietly as possible). Heartbeat sounds from eq. Hold through SUB-Feedback w/frozen faces OHHH.

Sound cuts. Lights Down.

END.
Feedback Hands is a quad-screen video composition of edited improvised material. The sound is linked directly to the image and was recorded live. Each screen (image/action) retains its own sound in the edited version, so when all four screens are running then there are the four corresponding sounds as well.

Attached with tape to each hand is an earbud, of the type handed out on airplanes or which sometimes come with walk-mans or mp3 players. One of the earbuds (hand) is plugged into a channel on the mixer, while the other earbud (hand) is plugged into the headphones out of the same mixer. By increasing the gain on the input channel,
and adjusting the eq knobs, feedback can be created when the hands are brought into contact with one another. Additionally, the feedback can be altered and sculpted by changing the position of the hands. The system is hard to predict and even with the same earbuds, mixer, and room, can somehow change from day to day. In general however, after some time certain consistencies and patterns emerged, some of which were recorded and edited into the video composition included in the dvd.
For Trumpet, Piano, and Sine Waves

This is a structured, non-notated improvisation which exists in sonic form on the accompanying cd.

The piece was recorded in Spring 2012. I imagined it as a kind of conceptual feedback loop with objects. The trumpet triggers the piano and responds to it as well (full-valve instigation of the strings and half-valve accompaniment). The sine waves interact with the oscillations of both piano strings and trumpet.

Someday I’d like to develop a live version of this, where the sine wave generator could read and respond to the pitches of its co-players.
Tine Waves

_Tine Waves_ came about when I happened upon some tuning forks in the studio. I began playing with them and enjoyed how they sounded on the desk and in the sound cubbies on the walls. The piece was written with Crowell Concert Hall in mind (because of access to both a grand piano and the same cubby-like acoustic buffering found in the studio) but could be conceived in any space, even without a piano, with not so much effort. A pleasant resonance of the room would be ideal. Found objects like wooden boxes, desks, or chairs could be used as resonators in place of the acoustic buffering structure.

My desire for the piece was to create an environment that could ‘slow down’, allowing the tuning forks to ring out separately and in various improvised overlapping ways, while also allowing a sense of space and space-between to manifest. I imagine this as a collective endeavor including both performers and listeners. In this piece I can definitely recognize a resonance with Pauline Oliveros and her Deep Listening work.

The following score, _Tine Waves_ was written for 6 players and a piano player. The six players each have two tuning forks, representing two separate pitch sets. Two of the players play inside the piano, which has the sustain pedal down for the entire piece. The four other players are positioned along the side wall of the acoustic...
buffering, across the space. The sense of timing is open and for that reason I didn’t include an indication of the length of the piece in the score. I imagine it taking upwards of 15 minutes to be realized, however much longer iterations could possibly be more in the spirit of the piece.

The instructions for the piece are as follows:

Tuning fork players improvise with an idea of ‘slowing it down’ in order to find the space-between, as well as the sonic overlaps, of the different tones. Let the decay happen. Let space happen.

Directions:

- Use the various potential aspects and objects within the space - boxes, walls, windows, seats, and pianos as resonators for the tuning forks.
- The players should be spread out in a non-stage oriented way within the space.
- Piano player holds the sustain pedal throughout (or a weight can be placed on the pedal). Piano is used as a cue between movements.

The score shows a sense of pacing and density. The short structure is as follows:

I. Inside piano tuning fork players and piano play. 3rd time of the piano note is end of Part I.

II. Tuning forks which are spread around the space begin. Eventually inside piano tuning fork enters in a periodical way. Slowly the other players thin out the frequency of their soundings. Piano cues end of Part II.

III. Inside piano tuning fork begins. Slowly space tuning forks enter utilizing 2nd pitch set. Second inside piano tuning fork player plays with prepared string for metallic effect. Slowly space tuning fork players thin their soundings out. Piece ends with inside piano tuning fork players.

Tine Waves 2 (Tuning Forks for Dining Philosophers) came out of this version of Tine Waves.

86.
I’d like to adapt and introduce elements of this piece over the summer, as part of a children’s improvisation and listening workshop. I’m curious what the kids will discover as resonators, and how together we might decide to structure the piece in the room.

Disregarding the score, I’d place the kernel of Tine Waves 1 as a collective undertaking in ‘physical pitch instigations and resonating objects’.
Tine Waves

For 6 players and pianist

Tuning fork players improvise with an idea of ‘slowing it down’ in order to find the space-between, as well as the sonic overlaps, of the different tones. Let the decay happen. Let space happen.

Directions:
Use the various potential aspects and objects within the space - boxes, walls, windows, seats, and pianos as resonators for the tuning forks.
The players should be spread out in a non-stage oriented way within the space.
Piano player holds the sustain pedal throughout (or a weight can be placed on the pedals). Piano is used as a cue between movements.
The score below shows a sense of density. The short structure is as follows:

I. Inside piano tuning fork players and piano play. 3rd time of the piano note is end of Part I.
II. Tuning forks which are spread around the space begin. Eventually inside piano tuning fork enters in a periodical way.
Slowly the other players thin out the frequency of their soundings. Piano cues end of Part II.
III. Inside piano tuning fork begins. Slowly space tuning forks enter utilizing 2nd pitch set.
Second inside piano tuning fork player plays with prepared string for metallic effect.
Slowly space tuning fork players thin their soundings out. Place ends with inside piano tuning fork players.
Tine Waves 2 (Tuning Forks for Dining Philosophers)

*Tine Waves 2* came out of acoustic investigations with the tuning forks, and morphed into investigations into live quadraphonic, electro-acoustic slow-paced listening. I was also curious to create the sound movements and patterns with a series of performer gestures – passing the forks and creating the pitch movements in the room. This interest was sparked over the spring break, when I saw an illustration and was smitten by the ‘Dining Philosophers’ test (imagine 5 guys with beards sitting at the dinner table, talking and eating. There are 5 forks. A dining philosopher can’t
eat until he has a fork in each hand, but either can his colleagues.) In the studio a couple weeks later the movements of the forks came up as a compositional element and as a solution to the problem of speaker assignation*. This patterning of the passing of the forks in the second part was important to me, as I was looking to create a structure for the listener (though one which hopefully wasn’t immediately clear).

In the beginning part (Pitch Set 1) three elements were deemed important: setting the initial pace of both the performer and listener by slowing everything down, opening up the end of the section to improvisation to create unexpected interactions, and asking the performers to move their hands slightly and create physical oscillations of the forks through the speakers. In the second part (Pitch Set 2) the movements of the passing forks and their subsequent sonic placement in the room was the focus. The third part was meant as a kind of coda, bringing up in the end the oscillations between the piano middle C and the ‘disagreeing C’s’ of the two tuning forks. A final aspect that I hoped might be framed were the natural oscillations of the piano sounding. I found when I was working through the piece that I became much more aware of the oscillations and pulses not only of the forks of the piano as well, and became enamored of the slow rate of decay of the acoustic sound. I hoped that these elements might be brought into focus within a slow collective listening.

*The relation of passing forks in Tine Waves 2 to the Dining Philosophers is anecdotal. It’s not attempting to be a direct model of that scenario.
Tine Waves 2
Tuning Forks for Dining Philosophers

Liz Allbee

piano: approx. 45 sec. introductory solo.
pause before A begins.......

improvising with your given pitches, increasingly creating oscillations of various/varying speeds.
approx 3 mins.

piano: throughout A part: improvising in and with the pitches and spaces using:
middle c, c/c#, d#, and d#/e combinations.
B1. 3 times pitch set 2+

Starting pitches for pitch set 2:
Jasmine - F
Christopher - 128
John - F#
Nathan - 100

Movements:
slow coordinated movements passing forks
slow movement towards mics
take care not to hit mic!

*note: for the purposes of this score, the pitches in "pitch set 2" are not ascribed to a particular performer, rather are correlated to the setting at the table. Therefore the notated pitch 'A' is not a sounding pitch, rather an indication of timing, while the pattern of the tuning forks' placement creates the pitch structure - in other words, follow the directions for movement and play what you have in your hands.
Tine Waves 2: visualization of movement patterns

Start:

B1: 1: 2cc 1cc switch d, c

2: 2cc 1cc switch d,c

3: 2cc 1cc switch d,c

KEY

c: clockwise
cc: counter-clockwise
switch: only the places indicated
Bibliography


LINKS TO AUDIO AND VIDEO DOCUMENTATION

Video:

Feedback Hands:
https://www.youtube.com/watch?v=rBPasg6-rg4

Ear, Noise, & Throat:
https://www.youtube.com/watch?v=ZAk1TtkWzgs

Speak More Clearly:
https://www.youtube.com/watch?v=he7ExNNEEeU

Audio:

Quadrophonic Trumpet:
https://www.youtube.com/watch?v=oJT1uv0W6o0

For Fingertips and Small Motors:
https://www.youtube.com/watch?v=3MQiWARYgSo

For Trumpet, Piano, and Sine Waves:
https://www.youtube.com/watch?v=5OYgJs_T6j0

Library Sound Generator:
https://www.youtube.com/watch?v=nT9VQ-HQ7gA