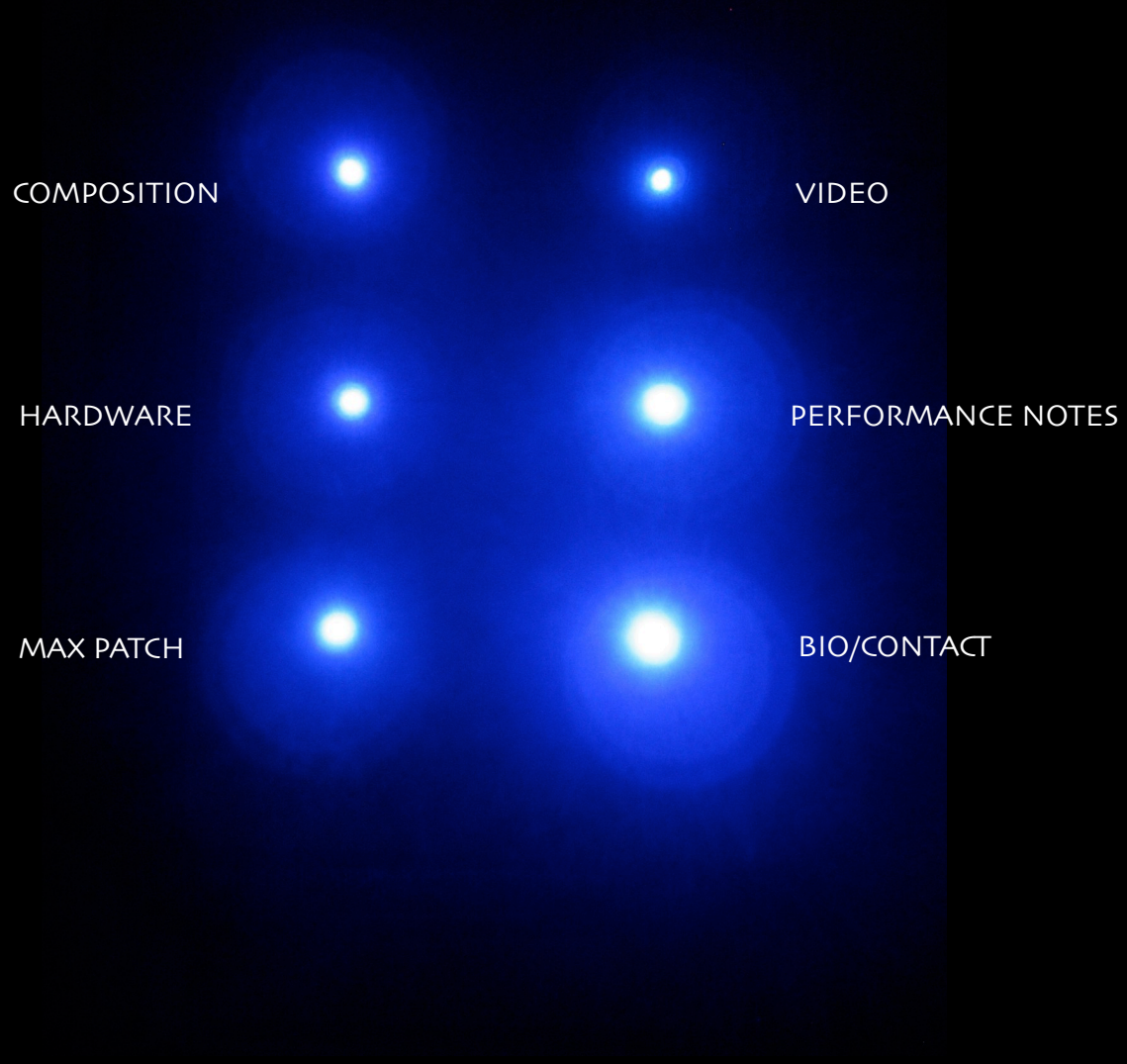
Giving Sound to the Seeing

PAUL DAVID THOMAS

DOCUMENTATION



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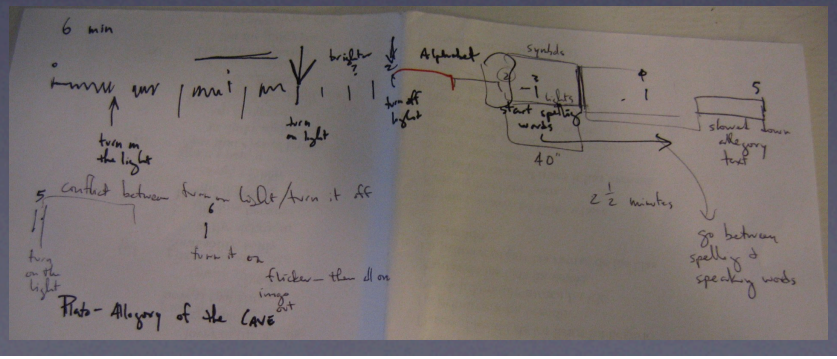
COMPOSITION

This piece uses text recorded from a text-reading software that is commonly used by seeing-impaired individuals to "read" text on computers and other electronic devices. For practical reasons the person operating the text reader can change the rate of speed to a point where it is faster than a normal speaking voice; a person unaccustomed to the sound hears gibberish while the the seeing-impaired person hears meaningful information. This simple technology ignited a number of questions that I felt I could explore in a piece of music. Mainly, I wanted to explore how a person cannot judge an object's meaning without first being willing to understand and educate themselves about the object. I wanted to take the listener into a foreign experience that he/she did not understand and see if, over time, I could bring the listener into a sense of understanding.

The biggest question I faced when I began this project was how was I going to make an interesting piece out of only sounds from a text-reading software? I had considered using the concept of rapid-fire text for sometime in the context of a tape piece but had difficulty imagining a piece with such limited material. This is when intermedia came into play; by using different audio and visual elements I felt I could compose a piece that was both interesting and highly economical in its material.

Below is the initial sketch of the piece. From earlier drafts of this piece (obstructions) I knew I wanted to use the concept/text of "turning on the light" and the inclusion of Plato's "Allegory of the Cave" seemed like an obvious choice since I wanted to explore how listeners can come to understand something foreign to them over time, or come into en"light"enment. I then went about the task of seeing how my different media components could aid in that goal. My main components were:

1. Audio - Speedy readings of portions of Plato's Allegory along with small sentences I prerecorded such as "Turn on the light" and "I don't see it."
2. Braille box - A wooden box containing six LEDs in the formation of a Braille symbol; taking the symbols from a tactile experience and into a visual one.
3. Video - photos of a hand making letters in sign language
4. Sound Diffusion - This was the last component I came up with and worked to create the sense of space and the perception of multiple voices, enabling me to create something of a narrative.



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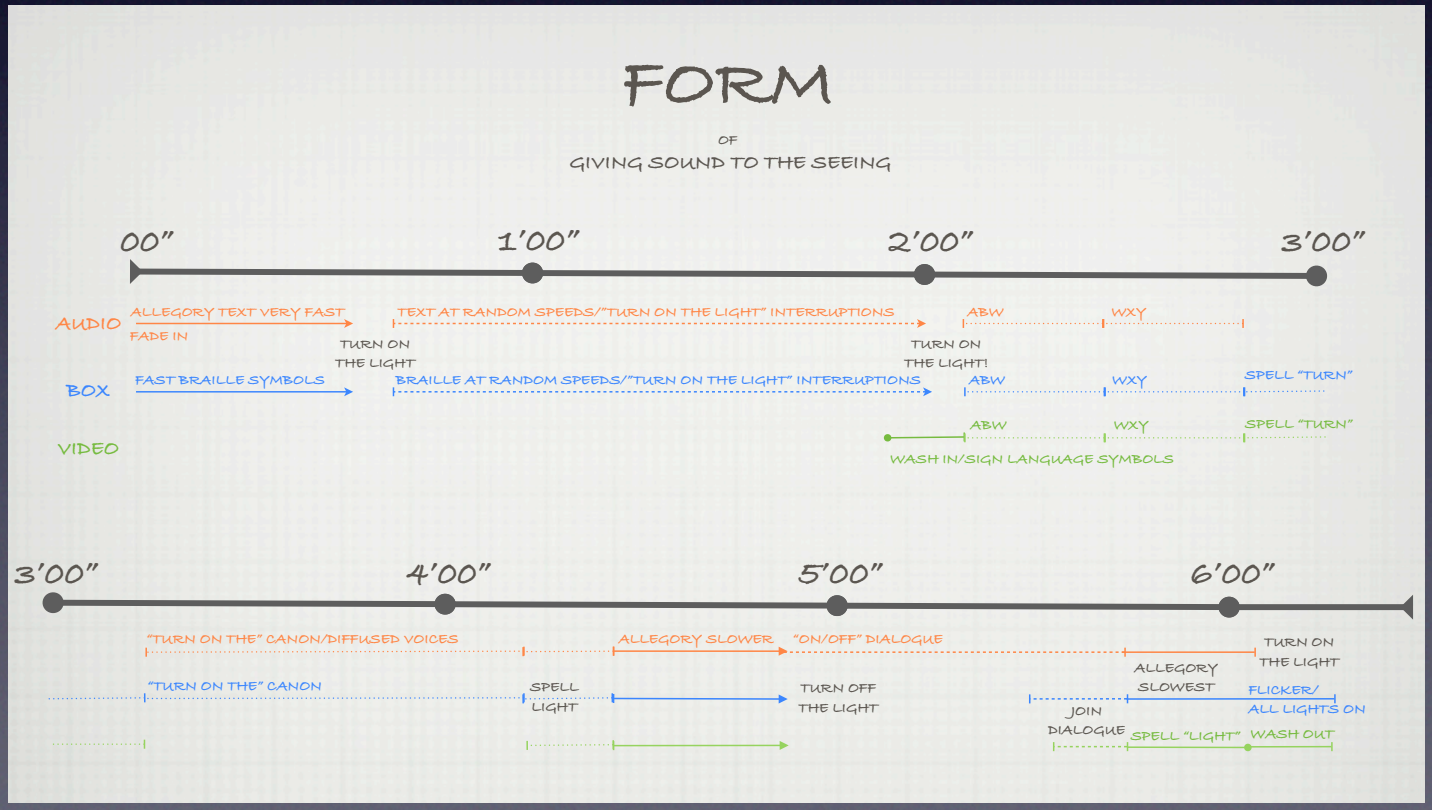
COMPOSITION

I tried to treat each of these structural components dynamically. That is to say, I varied the media components so that the organization of the material (what's playing and not playing right now) played just as important of a role as the material itself in presenting the piece's concept/ narrative. This dynamic structure played out in a number of ways.

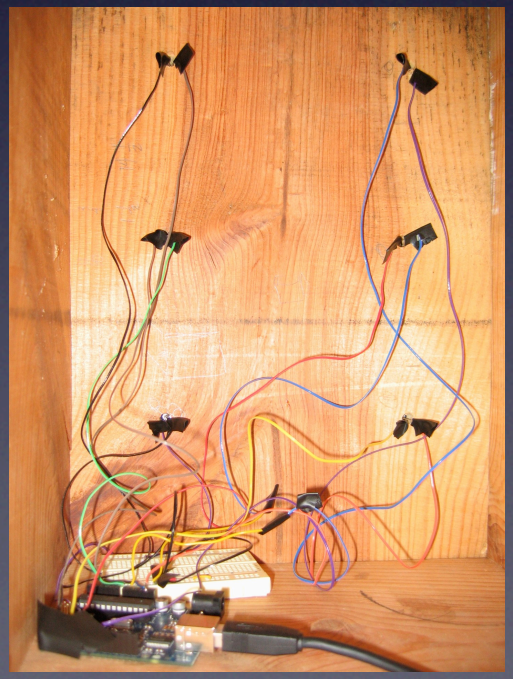
- Delaying the entrance of the video until two minutes into the piece.
- Changing the rate of the text and gradually slowing down the text as the piece progressed - I found it interesting that I received a number of questions asking if the text had in fact slowed down or if they had just become able to understand it.
- Using diffusion very selectively and when I wanted moments where there would be more than one "voice".
- Having moments when only one or two components are doing something such as when the audio "turns off the light" and continues speaking while the Braille box and video remain idle.

Below is a look at the final form of the piece and how I used the different components.



Giving Sound to the Seeing
DOCUMENTATION
HARDWARE

The Braille box was made out of a long 11 by 3/4 inch plank of wood I found in my garage. After cutting out the five sides and attaching them with nails and some corner brackets, I drilled six 1/4 inch holes in the shape of a Braille letter and attached a blue 5mm LED to a plastic snap-in LED holder and inserted one into each hole.

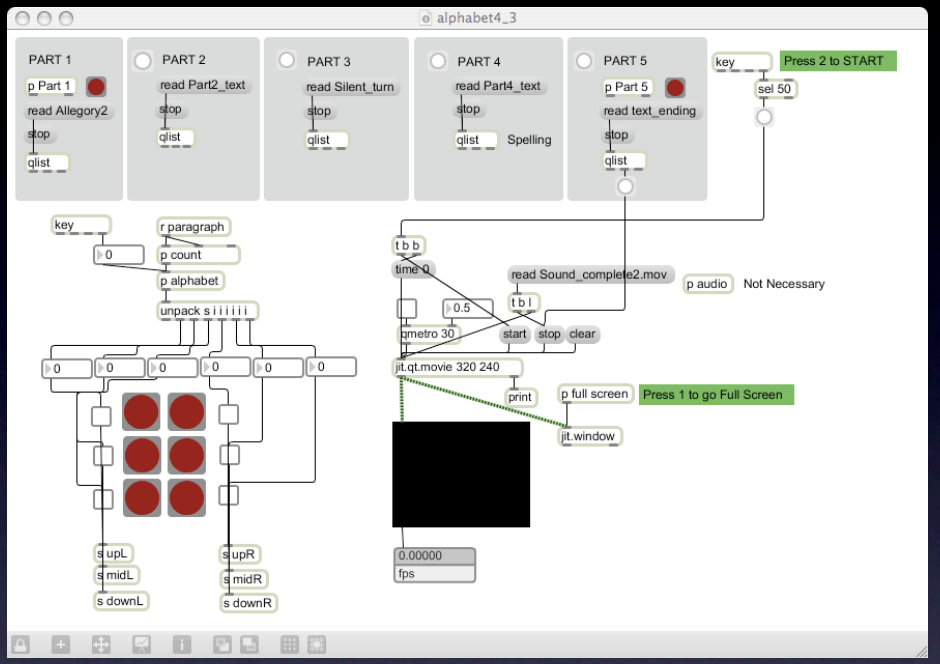


I then wired each of the shorter prongs of the LEDs to one of the digital ins on an Arduino Decimillia and wired the longer prongs to the Arduino's 3 volt power by way of a breadboard. As you can see, I used electrical tape but I recommend soldering if you can. The Ardiuno then runs via a USB cable into my computer.

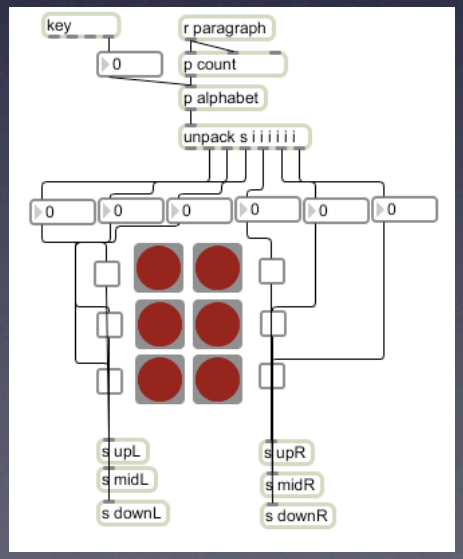
Giving Sound to the Seeing
DOCUMENTATION
MAX PATCH

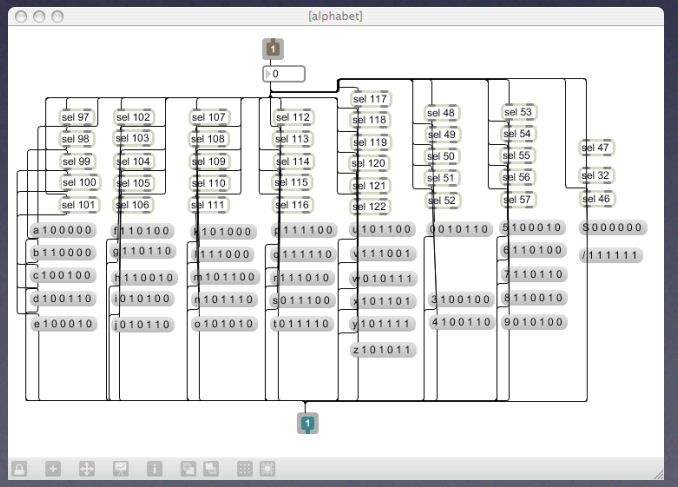
On the right is the max patch I made for "Giving Sound to the Seeing." Below I will talk through how it works by showing sections of this patch along with related sub-patches.

The main function of this patch is to send data to the Braille Box. I created a virtual Braille box seen here as six large red LEDs. Each LED turns on or off by receiving a 1 or 0 respectively. I then mapped each letter of the Braille alphabet to the 6 LEDs - for example, the Braille letter "a" is represented by only the upper left dot so the code for producing the letter on the Braille box would be 100000.



To the far right is the subpatch "alphabet" that turns any letter I type on the keyboard into its ascii numerical representative. This then activates a six-digit message (i.e. 110000 or letter "b") to turn on the correct LEDs.





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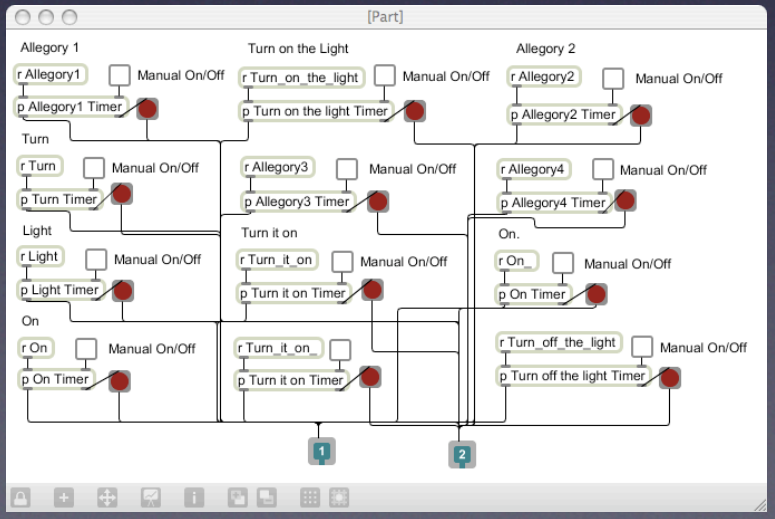
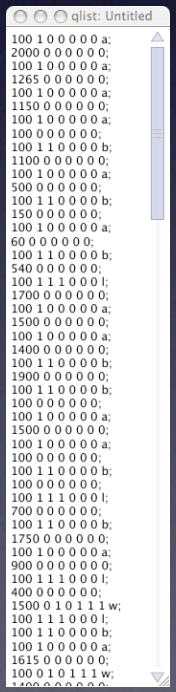
MAX PATCH

The next and most lengthy step was creating a system that would send the correct six-digit messages to the LEDs at the appropriate times. This was accomplished by setting up a series of five qlists as can be seen in the image below. As the first qlist finished, it activated the second qlist and so one.

The qlists sent two types of commands. The first command was just the six-digit code precluded by a time value (an example of this qlist can be seen on the right). This was used in sections where single letters were all that needed to be sent.

The second type of command involved sending entire sentences or paragraphs of text. Below is the Part 1 subpatch which contains twelve smaller patches; each of which contains text that can be sent to the Braille box when activated by a qlist command.





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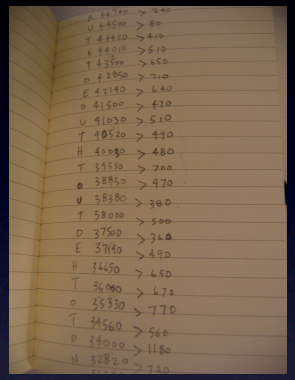
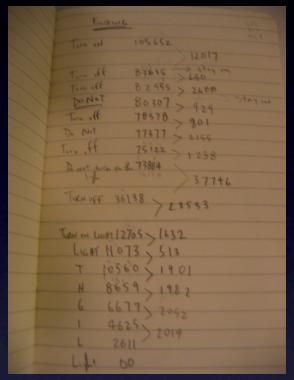
MAX PATCH

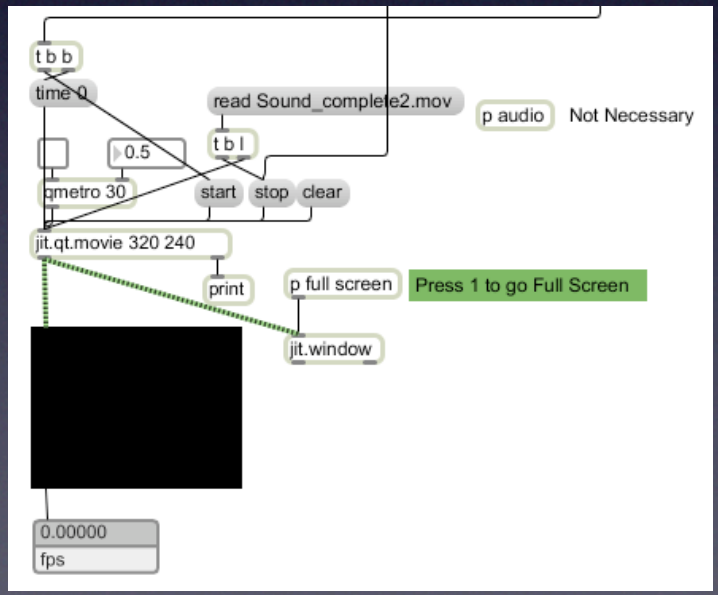
All the qlist commands where timed to the audio since that was the first thing to be finished. Needless to say, specifying all the timings between events was very time consuming and required a great deal of fine tuning along of the way. Below are a couple pages from my notebook that shows the process of determining the correct timings in between audio events.





The last part of the max patch is the simplest. On the right is the setup for running the video with Jitter. Since the video/audio was finished in iMovie, all I had to do was sync up the Jitter playback with the start of the first qlist.

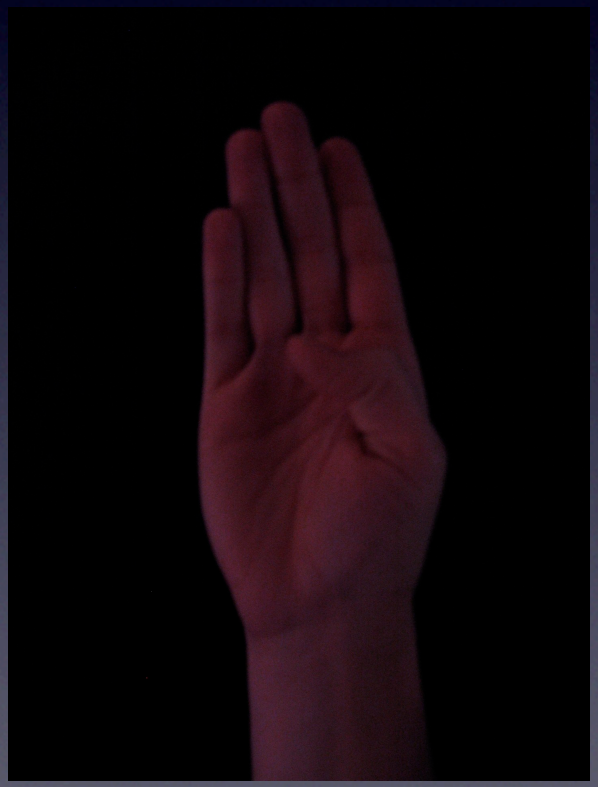
There is more I could say about the patch but hopefully this gives a good overview of what was going on.



Giving Sound to the Seeing
DOCUMENTATION
VIDEO

I first photographed my wife signing different letters of the alphabet. I then went into photoshop and turned the photos black and white, adjusted the contrast, and used the cutout filter to create the final image.

After manipulating all the necessary images, I used iMovie to create the video. Since I had already made the audio and Braille light cues, I just had to place the images so that they coordinated with the audio. In addition to the images, I also used a ten second wash-in effect right before the first image appears and a ten second wash-out after the final "Turn on the light."



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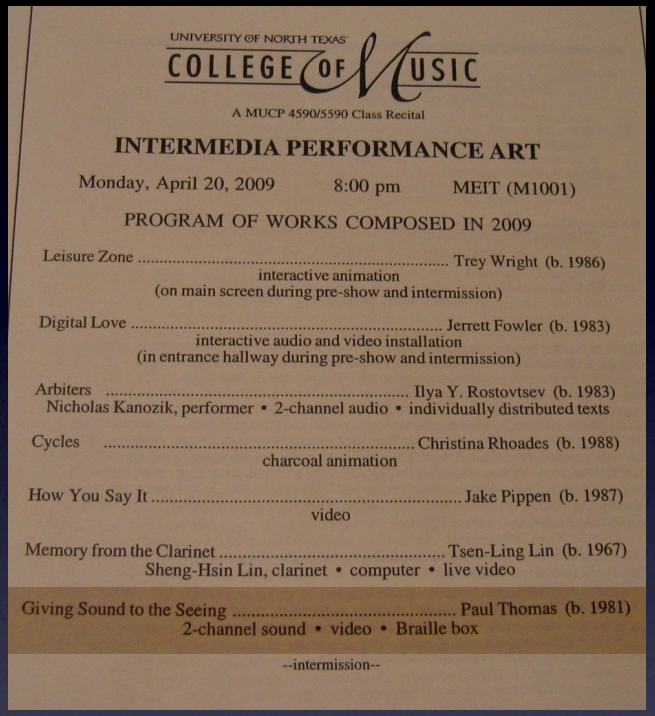
PERFORMANCE NOTES



UNIVERSITY OF NORTH TEXAS
COLLEGE OF MUSIC

A MUCP 4590/5590 Class Recital

INTERMEDIA PERFORMANCE ART

Monday, April 20, 2009 8:00 pm MEIT (M1001)

PROGRAM OF WORKS COMPOSED IN 2009

Leisure Zone ..... Trey Wright (b. 1986)
interactive animation
(on main screen during pre-show and intermission)

Digital Love ..... Jerrett Fowler (b. 1983)
interactive audio and video installation
(in entrance hallway during pre-show and intermission)

Arbiters ..... Ilya Y. Rostovtsev (b. 1983)
Nicholas Kanozik, performer • 2-channel audio • individually distributed texts

Cycles ..... Christina Rhoades (b. 1988)
charcoal animation

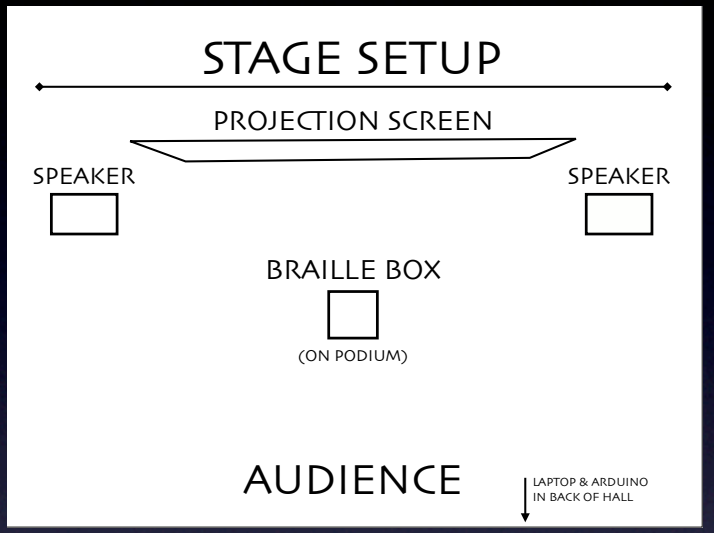
How You Say It ..... Jake Pippen (b. 1987)
video

Memory from the Clarinet ..... Tsen-Ling Lin (b. 1967)
Sheng-Hsin Lin, clarinet • computer • live video

Giving Sound to the Seeing ..... Paul Thomas (b. 1981)
2-channel sound • video • Braille box

--intermission--

This piece is a result of my friendship with two brothers who happen to be blind. All of the personal electronics these brothers use, from cell phones to laptops, have software that reads aloud whatever text is on display. Over time they have increased the speed by which the software reads the text to the point where it sounds like gibberish to someone not accustomed to it. This fascinated me and made me wonder if I can be a true judge of meaning or whether I only assign meaning to things I understand. In this piece I recorded the text reading software speaking selected parts of Plato's Allegory of the Cave along with other text fragments. I then used the resulting audio in conjunction with Braille symbols and images to explore how meaning and our own understanding can change over time.

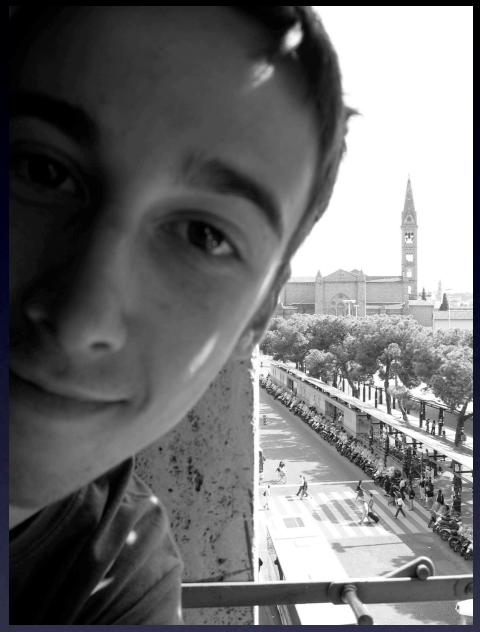


* The video included on this disc has been edited. I had to use a split screen effect in postproduction to show both the box and the video simultaneously since neither camera taping the concert included both elements in their entirety.

Paul David Thomas

BIO/CONTACT

Paul is a DMA fellow at the University of North Texas. Paul's acoustic and electronic music has been presented throughout the United States and Europe including Florida Electroacoustic Music Festival, Most Significant Bytes Festival, Threshold Electroacoustic Music Festival, Electric Pacific, Chamber Music in Grantham with the Mendelssohn Piano Trio, Western Illinois New Music Festival, Delta State University New Music Ensemble, New Music Hartford, Música Viva Festival Soundwalk (Portugal), Greater Denton Arts Council, Soundcrawl: Nashville, Electronic Music Midwest, Electroacoustic Juke Joint, American Composers Forum/Los Angeles, and the Conservatorio Luigi Cherubini in Florence, Italy. Originally from northeastern Ohio, Paul received degrees in composition from Cedarville University and Bowling Green State University and has studied with Marilyn Shrude, Elainie Lillios, Mikel Kuehn, Cindy McTee, Andrew May, David Bithell, and Joseph Klein. Paul is an active accompanist and associate director of music at Trinity United Methodist Church in Denton, TX – all of which helps support his composing habit.



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