

For my final project I chose to realize an interpretation of John Cage's work, *A Dip in the Lake*. The decision to do a sound design project was an easy one, as I have some experience with engineering musical recordings as well as general recordistry. I also find that work in music, or more generally, audio, helps me to reconcile my own mental models of art with ideas about visual art, which is more foreign to me.

Beyond just affection for sounds, I was also glad to have the opportunity to walk in Cage's shoes, so to speak. Prior to this course, my only knowledge of Cage was a combination of the M.C. Paul Barman lyric "No one left for the restrooms when I got on stage/I can rock the mic to silence by John Cage" combined with a foggy piece of pop culture knowledge that some artist had recorded a song that was just silence. In all honesty, I think I knew Cage's name but had him mentally interwoven with Philip Glass. My lack of knowledge about the artist was replaced with admiration the more I learned about him. I think that this largely stems from his commitment to his artistic ideals, referenced in the liner notes to *Indeterminacy* when he mentioned hitting his head on the wall of harmony. I feel like it's especially relevant to me while I'm coming to the realization that my studies haven't taught me much about being an artist. In some ways, Cage was also the answer to a question I had regarding the idea of non-theory. In my own frustration with art being seemingly scaffolded by unwritten rules, I really wanted to find work related to art for art's sake, or art that could be valid outside of the contemporary artistic lexicon. Cage is the closest I've come to finding that. I think this quote of his gets to this point: "If you develop an ear for sounds, it is like developing an ego. You begin to refuse sounds that are not musical and that way cut yourself off from a good deal of experience." I like this concept a lot, and I've

kind of experienced this idea of perception ego in audio engineering work – I’ve always been a strong proponent for documentary style music recording. My general aim is to capture the sound of musicians performing in an as accurate a way as possible. In the context of modern music, this style of recording is viewed as substandard in comparison with artificially edited, over processed production techniques that are a side effect of music being viewed as a commodity. In other words, I put value on something that others don’t. I think Cage had a similar, although much broader, agenda.

Additionally, I like Cage’s utilization of Zen Buddhism in his work. I’m not completely sure of his intentions beyond striving to make his work chance based, but I personally like to think about the role of divine forces in creation of art. For me there is also something intriguing about the ability to simplify or even eschew decision making. Having the ability to make decisions is great, but sometimes, especially when you’re not sure what you’re doing, it can lead to over thinking and analytical paralysis, causing nothing to get done. There is something comforting about knowing that you can have an “unbiased”, chance, decision.

In Cage’s original score for *A Dip in the Lake*, he drew lines between points on a Chicago map which defined the locations for recordings. Sadly, I couldn’t find much documentation about his process for choosing locations. From what info I could find, it appeared that some locations were chosen by familiarity, such as “City of Chicago correctional farm” and “Hinsdale Airport”, and others were listed by address or intersection. It’s not clear how this list was compiled, although I imagine using a phone book and some kind of chance operation might be one way Cage could have done it.

With the locations selected they were seemingly divided into groups that would come to make up the 10 groups of 2 (quicksteps), 61 groups of 3 (waltzes) and 56 groups of 4 (marches). These groups appear to be connected by colored lines with different colors indicating which of the beat types each is. The order of connection is unclear.

Though his visual “score” was completed in 1978, I believe the earliest realization of this work to be in 1982 by Peter Gena. (<http://www.petergena.com/cagedip.html>) Little information is given on the recording process used at this time other than the fact that magnetic tape was used as a medium. Thankfully there are some details given by Gena regarding the mixing process of the 1982 realization. Cage recommended using the same mixing method as another of his works, *Rozart Mix*. In this process the magnetic tape from all of the recordings was to be cut into random sized lengths up to 5 inches long and then reassembled in random order and orientation into at least 144 different loops. Gena used the I Ching to determine the length of each loop from 10 inches to 30 feet. During the performance of the piece, these loops were swapped in and out of 12 tape players.

I have found other realizations of this work documented online, and each has had interesting ways of dealing with the details left unspecified in by Cage. A realization in Washington DC used a grid system to identify the locations to be recorded. (<http://userpages.umbc.edu/~tmoore/dip.html>) One realization that took place in Luxembourg, Germany featured location selection by throwing darts at a map. (<http://www.youtube.com/watch?v=uJ3sK2rMcfo>) Another in Potenza, Italy used multiple means of location selection including children throwing a ball at a map. (<http://rosewhitemusic.com/piano/2012/12/12/a-dip-in-the-lake-in-potenza/>) I think it’s really great that this composition or composition process was left open enough that pretty much anyone could undertake it. In both of the above examples, the selection process is something easy and fun that allows anyone from the community at large, including children to participate. I think this is really relevant for this project since it already has a bit of a community orientation along with inherent local exploration that anyone could enjoy.

When I realized that I probably wouldn’t be able to find out the exact details of Cage’s process for this piece, I decided to approach it from the perspective of tools that I’m familiar with. My initial

thought was to use the Grasshopper3D software for most of the chance elements. Going off of Cage's use of a map as the basis for his visual score, I considered using a map of Greater Lafayette and writing a Grasshopper assembly to superimpose a random point field on it. A reasonable idea, this method fell short for me because it didn't offer a very clear resolution of what the location would be. In reality, I guess that level of specificity doesn't matter that much, but at the time, it seemed important – being open to decisions made by chance is not my standard modus operandi, and I had to kind of grow into using it as the project went on. I had also considered writing a computer program to generate random GPS locations, but frankly, this was a little beyond me, and a quick Google search showed that similar applications already existed. I ended up using one called GeoMidpoint.

[\(http://www.geomidpoint.com/random/\)](http://www.geomidpoint.com/random/) I was very fortunate in that this web app had just enough options for me to generate the range of locations I needed. It allowed me to select a starting point. I used the pedestrian bridge between Lafayette and West Lafayette. This location is not only relevant due to a general view of it as a link between the two cities but it is also a pretty good center point for circumscribing the two cities. Once my center point was set, I had the ability to set a radius that would limit the random location selection. By trial and error, I found that 3 miles reasonably contained both cities. Due to the odd shapes of the city limits, my chosen range contained some non-city owned areas, but I felt that it was close enough. Finally for the location generation, I had to choose how many points I wanted. I again used a trial and error process to find a number of points that was workable given the projects time constraints and also seemed to be a reasonable representation of the geography included. In retrospect, I feel bad about this decision. I was still making choices with an idyllic outcome in mind, which I think is the opposite of Cage's intention with this piece and in general.

The web application outputs a list of GPS coordinates. I don't regularly use GPS to locate areas by coordinate, so my initial reaction to this list was to start entering them to Google maps for a translation to something I could recognize. Interestingly, Google did not only identify the location on a

map, but it translated it to the nearest street location, and in most cases, address. Thanks to street view, I also got an image of the area.

The next step in my process was to record audio. Before doing so, I split up my locations into groups, similar to Cage's original composition. He used groups of 2, 3 and 4, so I felt it would be reasonable to do groups of 5. I probably should have rolled a die for this, because again, I chose 5, at least to some extent, because it seemed like a good amount of samples to have in a composition. I printed off a kind of cue sheet for each of the 4 sets. These sheets gave the address of each location, the photo from Google Maps, and a driving direction list from the first point to the last which was also generated from Google maps. I think the process of making these cue sheets put me into a mindset of recording all of the locations in each group successively. This added an element of time to the project that I found interesting, but I eventually realized that it was of little consequence due to the method I would be using to mix the audio.

Still having the idea of chronology in mind, I considered the times that I would do these recordings. This was really the point where I realized that I was thinking far too much about the outcome. Obviously, locations sound differently at different times and there are some times of day that would sound more "interesting". Thankfully, the universe made the decision for me by only giving me time to do the recordings on afternoons. Most were done between 1p and 4p.

For the technical side of the recording process, I used a Zoom H1 field recorder mounted to a tripod. 3 of the 4 sets were recorded in WAV format at 44.1k 16bit resolution. One set was accidentally recorded in MP3 format at 128k. All sets had the low frequency cutoff and dynamic compression enabled. The audio quality was set for highest performance while the audio settings were mostly attempts at dealing with distortion due to wind noise. I considered inclusion of this distortion, but ultimately I felt it was disruptive to the other sounds going on, and was not a very accurate

representation of what the human ear hears. After realizing that the first set of recordings was too distorted for my liking, I made a windscreen from a baby mitten and an elastic band.

When taking recordings I generally tried to get as close to the location specified, while also trying to approximate the positioning of the point of view of the camera from the google map street view photos. In some cases, I was able to duplicate the position pretty closely. In some others, I was able to access locations much closer to the coordinates than google maps could show me. At each location I took a photograph to compare to the Google Maps image, and recorded 2 minutes of audio. The length of the recordings was chosen because it seemed long enough to be useful in the final mix. Again, I probably should have randomized this number.

With all of my audio recorded, I moved on to the mixing stage. As detailed in Peter Gena's original work, Cage recommended the use of the *Rozart Mix* process for mixing *A Dip in the Lake*. Since I used digital recording as a medium rather than tape, I couldn't really use this method as written, so I tried to do something with the same spirit in the digital realm. My original intent was to mix the audio in the Audacity software, and use Grasshopper3D to do the chance operations. Grasshopper is really not the right tool for the job, but it can handle random number generation, and it's the "programming" software I am most familiar with. My plan was to break each recording into 15 second chunks and then use chance operations to determine whether or not a sound would play at each 15 second interval, and if so, which of the 8 chunks it would be. Each recording would have its own track in Audacity, and they would all run simultaneously. Before I was able to enact this plan, I was told about the MAX/MSP software from Cycling '74, which is kind of like Grasshopper but specifically for manipulating audio. Once I learned the software, I was able to tweak my original plan to be more random. I read in the 5 recordings for each set, and started playing them at random points for random durations. After each play, the random start point and duration reset and played again. Amusingly to me, it would be quite

easy to generate an unending soundscape. For this project though, I chose to stop new random plays at 3 minutes. This decision came from the idea of Cage assigning music types to his groups – quickstep, waltz, and march. For me, 3 minutes is around the ideal time for pop music singles. I felt this would be the duration that the audience would be most used to in musical compositions. To add an element of chance to this, I allowed already enacted sounds to continue playing to their end, which could make the final play time anywhere from 3:01-4:00.

For the first of the 4 sets I also created a video that played the completed mix while showing the Google Maps images along with the photos that I took as well as video of my MAX/MSP patcher in progress.

The outcome that I arrived at was pretty interesting to me. At every step of the way I doubted how interesting my realization would be. Each individual recording had a lot of silence, or very quiet content. When compiled though, they were very active. The resulting audio really feels to me like an aggregate of all the locations.

At the onset I really didn't think of it as much but I think my realization of A Dip in the Lake takes Cage's work in a more modern, interactive direction. I think most of this comes from the technological determinism that I am biased towards. This is most evident I think in the MAX/MSP patcher I developed for the mix. It can go on forever randomly manifesting because the chance operations are performed by the computer. It would also be really easy to integrate listener input by allowing them to trigger the plays of samples. I could even see a similar program used to make chance enabled music, like a record that sounds different every time you listen to it.

This project also made me think about Lafayette in different ways. In a physical sense, it allowed me to explore some physical areas that I'd not been before. In a perceptual way it caused me question why this place is the way it is. Overwhelmingly, the recordings contained traffic sounds. This is probably

influenced by the use of Google Maps for locations – it can only map and photograph things close to roads. Still, I think it's very reflective of the culture here. Of my 20 locations, only 3 were non-residential or non-commercial. The lack of human voices in all of this really paints a picture of a society that spends time in their homes, work, or car. I wonder how different this would sound 30 years ago.

There was also an interesting element of agency involved. I was very concerned about being questioned or asked to leave while I was recording. For some reason, I assumed that my presence would be questioned and I would be asked to leave. I think this partially stems from the fact that recording can be viewed as surveillance. I think my perception was that people would be uncomfortable being surveilled in their own spaces. I ended up having no problems in this area. I was only spoken to twice during this process, and neither was negative. During one of these events, I had parked near a condemned house. As I got out of my car with my tripod, a resident across the street said "is it finally getting torn down?" My tripod and proximity to the condemned house influenced him to make a fundamental attribution error and assume I was a city employee. It really makes you wonder how much you can get away with in regards to social engineering.

In closing, I found this to be a fun and engaging project. I liked the practical application of technology, learning to embrace chance, and generating something that can help us be more thoughtful with our perceptions. I am already considering ways to modify and apply my MAX/MSP patcher to other projects.