

“My friends are my power station”
A poetic installation about loneliness in big cities

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A thesis document submitted in partial fulfillment of the requirements for the degree of
Master of Fine Arts in Design and Technology
Parsons School of Design, May 2020

Abstract

My friends are my power station. It is an installation about loneliness in big cities. This installation employs a large number of units of spinning wire, with statements about intimate relationships projected onto the spinning surfaces. These words, and the battery units that propel them, form a poetic, subtle, and interactive understanding of loneliness and transience. By making loneliness more visible, and shared in a public platform, this work also aims to send a central message to viewers: you are not alone.

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Chapter 1 Introduction

1.1 Concept Statement

This installation employs a large number of units of spinning wire, with statements about intimate relationships projected onto the spinning surfaces. These words, and the battery units that propel them, form a poetic, subtle, and interactive understanding of loneliness and transience.

The title “My friends are my power station” is the story of my friend Yu Tian. When she went through a recent heartbreak, she would take a 2-hour train ride to her best friend’s home, talking with her on her sofa all night. After spending this time with her friend, she felt better and more energetic.

I used simple and functional materials to build an installation from objects within everyday life. The mechanism of rotation is a homopolar motor made with battery, magnets, and copper wire. The spinning wire is a commonplace modular form, its symbolic connection to industrial production appropriated as a metaphor of ordinary people in big cities—a crowd of small individuals within a massive forest of iron.

Loneliness is a personal feeling that is hard to discuss, define or depict. It is unique to each person in the moment when they experience it, but listening to stories can inspire empathy and understanding in others. The spinning wire will carry a piece of paper above it to ‘catch’ projected words which spell out stories of loneliness and isolation. Over the course of [say what time frame], I interviewed with my friends, who are [say if they are students, what age, where they each live, work, etc.]. I wanted to listen and collect their lonely moments, and learn about how their interpersonal relationships influence and support them emotionally.

I selected key quotes from their stories, and projected the sentences on a flat paper surface attached to the spinning battery structures. The result was that a single word appeared each time the structure would spin. Upon first glance, this installation may look separated and undecipherable, because different words appear and change each second. However, once viewers focus on one rotating unit, waiting for the changing words to converge as sentences, the lonely message spelled out in these words becomes clear.

This work pairs traditional mechanical materials with digital live stream projection tools to provide an intimate feeling of reading other people's loneliness. It creates a delicate contrast between flashing spinning moments and continuous stories, a single unit encompassed within a large number making up the whole, the singularity of each story set against the industrial rhythm of the structure's rotating movement. When loneliness can be visible and intimated, you are less alone. Through these juxtapositions, I hope that the viewer might relate and feel less alone.

1.2 Impetus

I felt lonely when I was in NYC last year as a first year graduate student, and again in Hangzhou, where I spent my summer working as an intern. I tend to feel lonely easily, and I only wonder if, after graduation, I might be in a new place, a new city to start my new life. I am tired of anticipating the stress of dislocation when I may need to inevitably move again.

People relocate frequently nowadays to pursue work or study, and they have to rebuild their connections each time. My friends in distant places are also struggling to overcome loneliness. "Looking forward to communicating, but also being afraid of social life," my friend Sijun Kang posted in a WeChat bulletin board feature called "moments".

How do we build friendship circles when we move to a new place for education or work? How do we create networks that can sustain us emotionally? These questions sparked my interest in sharing more about interpersonal relationships amidst experiences of loneliness.

1.3 Why It Matters

Loneliness is a universal, perhaps unavoidable feeling. People in general need nourishment from close relationships to reinforce their sense of themselves in the world. Because of the expansion of city life, where more and more people are living in cities, , our social patterns change rapidly, along with our abilities to sustain our social connections. We are still learning how we can better treat ourselves with new challenges in today's context. Therefore, I think this topic is worthwhile for me to investigate and contribute this installation as a response to this larger contemporary experience.

Many people move frequently nowadays for work or education, and experience loneliness as a result. Relocation can cause a sense of isolation, and building new networks takes time. This helps explain why so many international students, like myself, often face difficulties sustaining meaningful personal relationships. I share many of the same experiences as my peers, and due to the physical distance and different time zones, our social networks remain in a state of transience and instability. It is impossible to recreate the connections we used to have, and we need to adjust to developing new connections in new places. In addition, a short-term living situation is a more difficult context for making friends.

We are dealing with more complicated interpersonal tasks since many of the relationships we maintain now are through online platforms such as WhatsApp, Wechat,

Instagram, YouTube or Twitter. We perform a large amount of emotional maintenance work on the Internet. We may have some strong connection with our core friends and family, and we might even have hundreds of loose links. But how do we deal with a newly evolving relationship outside of these online platforms, in our new locations? How do we treat our new forms of communication? Can we balance face-to-face interactions with virtual attachments? Through this installation, I aim to share the experiences of friends who grapple with these questions on a regular basis.

Chapter 2 Context

2.1 Research

Feeling lonely is a natural reaction to perceived isolation and also a motivator for seeking new social attachments. Based on Maslow's human need theory, human beings need social connection. Real and meaningful connections are not only influential factors in happiness but they also affect mental health. An interpersonal relationship network that is 'lovable, happy and useful' can sustain us.¹ Based on research, social isolation will lead to increases in depression, suicide, and low self-esteem.² According to Aristotle's theory on the significance of authentic connections for a happy life, a reliable friendship has the following characteristics: mutual love and respect based on virtue, joint activity and shared life.³

How is loneliness depicted or perceived from the point of view of others? As Johann Hari stated, "If you are depressed, If you are anxious, you are not crazy, you are not weak, you are not, in the main, a machine with broken parts, you are human beings with unmet needs".⁴ This is a feeling that is common and we do not need to be frightened, instead we need to be patient with ourselves and others. More importantly, loneliness is not just an individual issue, it affects so many groups of people, so they can pull together. To represent this, in my work, I create a group of spinning units instead of only one.

¹ Kiliarnta, Sofia. "Using Aristotle's Theory of Friendship to Classify Online Friendships: a Critical Counterview." *Ethics and Information Technology* 18, no. 2 (2016): 65–79. <https://doi.org/10.1007/s10676-016-9384-2>.

² Hall-Lande, Jennifer A, et al. "Social Isolation, Psychological Health, and Protective Factors in Adolescence." *Adolescence*, vol. 42, no. 166, 2019, pp. 265–286, experts.umn.edu/en/publications/social-isolation-psychological-health-and-protective-factors-in-a. Accessed 7 Aug. 2019.

³ Horchow, Roger, and Sally Horchow. *The Art of Friendship: 70 Simple Rules for Making Meaningful Connections*. St. Martin's Press, 2007.

⁴ Zach Rhoads. "Johann Hari's Journey of Discovery About Depression." Filter, March 1, 2019. <https://filtermag.org/johann-haris-journey-of-discovery-about-depression/>.

We are more connected digitally than ever before, and it could be assumed that because of this we should not feel lonely. This might be a result from the lack of authentic and meaningful connection. In modern society nowadays, especially in big cities, we may live far away from our friends and family. Despite the convenience of technical communication tools, such as chatting apps, or Facetime. We still can not participate in face-to-face activities. The virtual relationships we build online can be described as low-quality connections. In many cases, we do not create real and meaningful connections on social media. Many of us have hundreds of so-called friends or followers, but how many of them do we actually spend time with? And how often? The fact is that we have complex feelings toward social media, and feeling lonely is exacerbated by social apps.

Sometimes, too much exposure to social media will cause people to feel exhausted. As one of my favourite youtubers said in his recent video “How to balance, social networks? This is a task I am learning. I feel exhausted.” Fear of missing out (FOMO) is a phenomenon happening right now on social media, in which people feel anxiety caused by not participating in exciting or interesting events shared on social media.⁵ The fact is that we have complex feelings toward social media, and feeling lonely is exacerbated by social apps. As Sherry Turkle mentioned in her essay “Alone Together,” “Sometimes you don’t have time for your friends except if they’re online, is a common complaint...When is downtime, when is stillness? The text-driven world of rapid response does not make self-reflection impossible, but does little to cultivate it.”⁶

⁵ Barker, Eric. “This Is The Best Way to Overcome Fear of Missing Out.” *Time*, Time, 7 June 2016, time.com/4358140/overcome-fomo/. Accessed 19 Nov. 2019.

⁶ Turkle, Sherry. *Alone Together : Why We Expect More from Technology and Less from Each Other*. New York, Basic Books, 2017.

Instead of communicating in real time in a mutual way, the text-driven phenomenon that Sherry described is more like one-way behavior. Posts on the Internet is more a channel for self expression rather than an exchange of listening and responding.

On the other hand, an online platform can be used as an effective tool for connecting outside of one's physical space. People who live separate from old friends and family members can still stay in touch with people they cherish and miss. From the friends I interviewed, many of them think technology provides more possibilities to connect with people and gain a wider exposure to others' lives.

That being said, I believe that offline connection is more meaningful and supportive. In-person interactions can have more dimensions and sensory feelings, and an overall richer experience beyond the one-way relationships of online platforms. My friend Yueying Wang, in her user interview with me, emphasizes the importance of spending time with people offline. As another friend, Yue Chen, said in an interview, 'If you have time to chat online, why don't we come out to meet?'

So how do we balance online and offline attachments? How can we better deal with our loneliness when we feel disconnection and loneliness? As Turkle said, "In a way, there's an immaturity to our relationship with technology. It's still evolving."⁷ We can still have ways to influence the future of our social life. How do we want it to be? How can we comfort ourselves in such lives? These are the conversations I think are critically significant because it means right now we may not have a perfect solution to it, but it should not undermine the necessity of thinking, discussing, and investigating such questions.

2.2 Precedents

⁷ Turkle, Sherry. *Alone Together : Why We Expect More from Technology and Less from Each Other*. New York, Basic Books, 2017.

2.2.1 Arthur Ganson, kinetic sculpture



Figure 2.1 Arthur Ganson's kinetic sculpture <https://www.arthurganson.com/>

Arthur Ganson creates mechanical art with wires and other mechanical parts. The themes of many of his works are about the relationship between human and society in an industrial context. “ I would make things for people as a way of showing my love... I would put my ideas and my passions in objects. And learning how to speak with my hands. So the whole activity of working with my hands and creating objects is very much connected with not only the idea realm, but also very much of the feeling realm.” As he described his art style and interest he loves “ the flow of logical events”, and he makes “visual and mechanical decisions ” in his artwork. As an industrial designer and User Experience Designer, I am trained to work using logical steps. But through Genson's work I am inspired to try something different, more artistic.

The first picture is his work *Loneliness*, which is expressed by the contrast in scale. It is a tiny human figure sitting on an extremely high terrace. The contrast of one person versus a large group impacted the way I thought of contrasting a single unit versus a large group in order to convey the sense of loneliness.

2.2.2 Zimoun

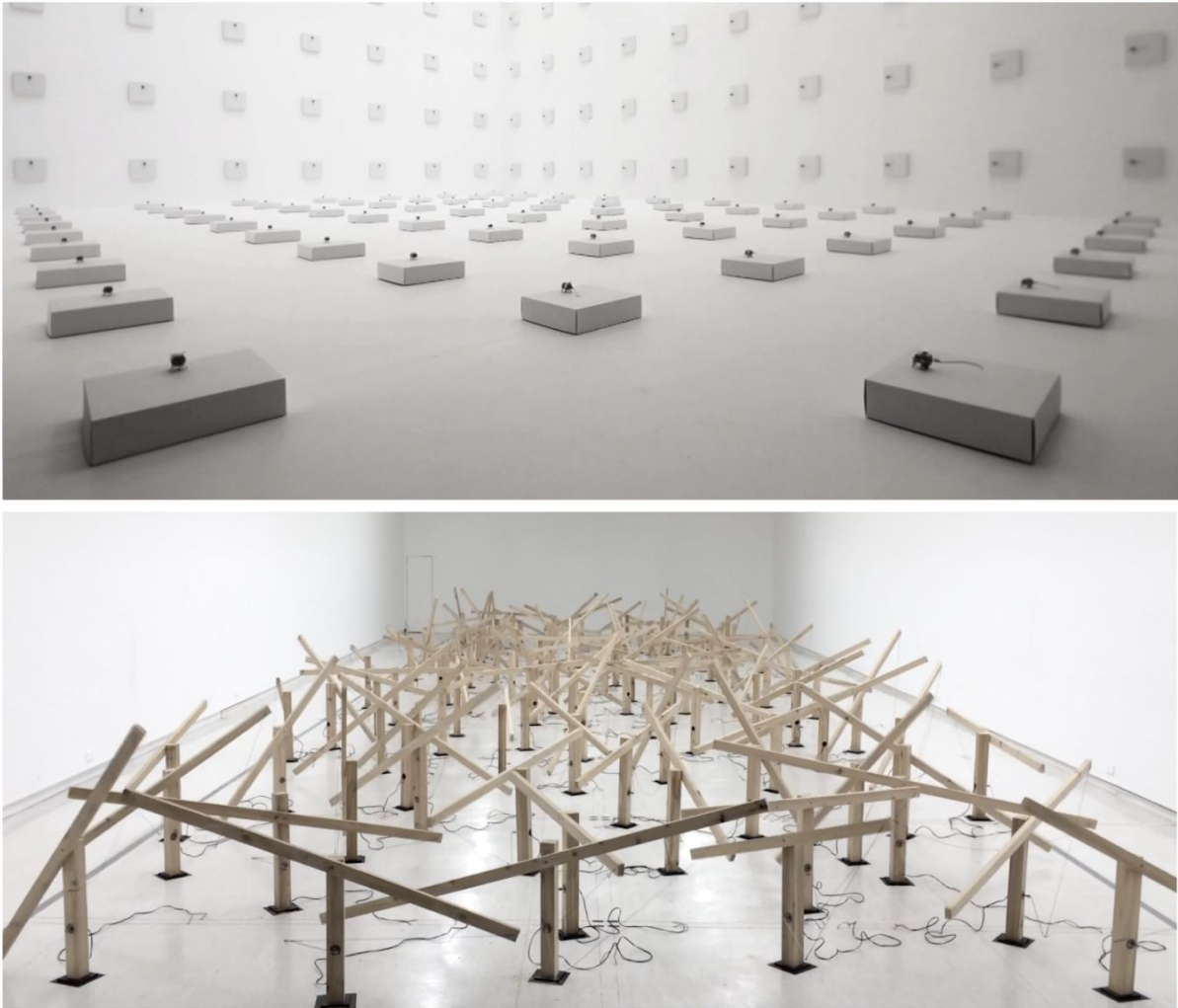


Figure 2.2 Zimoun's sound projects <https://zimoun.net/>

Zimoun's form inspired me to think about how to arrange each unit in a space to compose a unified piece. He uses everyday materials to make mechanical sound installations. He inspired me a lot when I dealt with how to arrange the units after I decided on the ideal of spinning wire. I struggled with the number of units and how to set them up. In addition, I received feedback from mid-term reviews which helped me realize I could make different setups for specific tasks using the same units. So during the COVID19 Shelter in place time, I just created my thesis work within the possible scope of my bedroom first. Maybe in the future, if I have the chance, I can revise this presentation scale to fit a different type of space.

In addition, Zimoun's work emphasizes sound, which emphasizes rhythm in motion.

This helped me view my work through a sound perspective. I really like the sound in my work when the spinning wire hits the batteries and magnets, making various mechanical noises adds to the aesthetic rhythm.

2.2.3 *Es Devlin, Victoria & Albert Museum , Singing Trees*



Figure 2.3 Victoria & Albert Museum , Singing Trees
(<https://www.vam.ac.uk/articles/christmas-tree-installations>)

The *Singing Tree* uses machine learning to select words collected from the public about Christmas. The text message appears in the form of a single word and each second creates a poetic flicker. However, the fragmented messages actually capture people's curiosity and focus because it is informative and changing. The single word is concise and easy to acquire compared with massive reading tasks. This inspired me to frame my idea by converting the story into short sentences, and outputting them one word at a time.

Also, I was inspired to use a projection mapper tool to achieve the effect I want. This is a powerful and effective way to provide live steam information projected in a physical space.

2.2.4 Sarah Sze

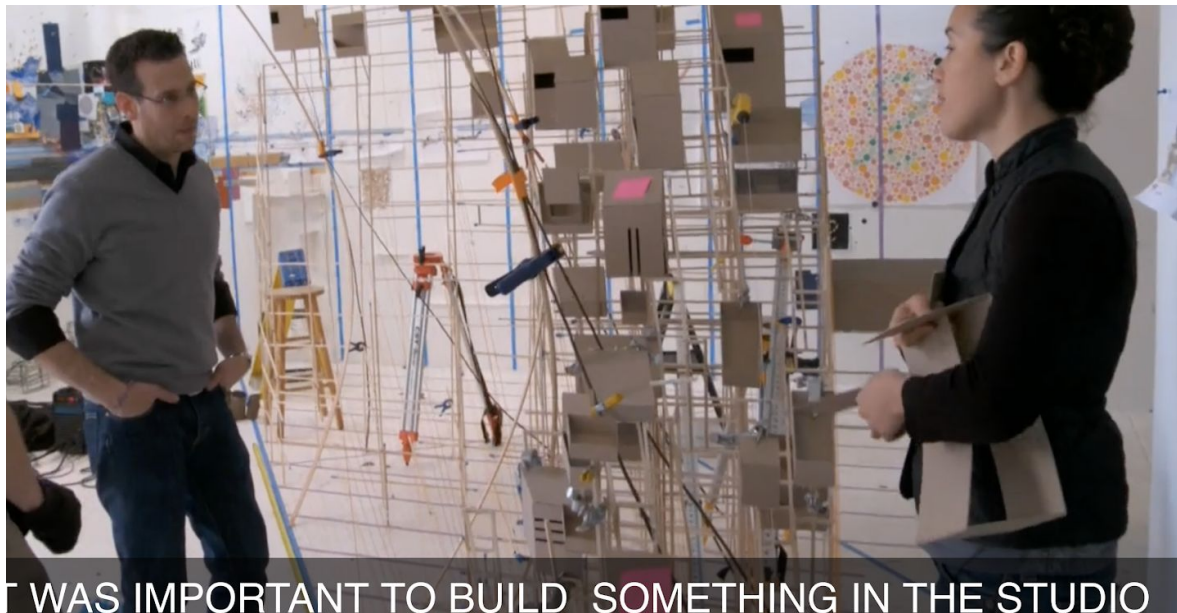


Figure 2.4 Sarah Sze's Studio

<https://art21.org/watch/art-in-the-twenty-first-century/s6/sarah-sze-in-balance-segment/>

Sarah Sze's practice inspires me a lot. She makes many works that require precise and accurate calculations in detail. She manages many complex elements and keeps them "dangerously" in balance. I learned a lot from her rigorous working flow transforming her ideas from sketches to models and to hand-made prototypes. The unstable elements in my works are hard to deal with (the movement of wire, the projection position with changing surface). I learned from Sarah Sze's style, and I manipulated each variable in my work until it was just in the right place, I was able to control the variable by marking each object, and adjusted every element to the precise location.

Sze values the practice of making things by hand in her studio as a way of better understanding the work and making adjustments in progress. Seeing and touching them in real space is very different from sketching or modeling software, and you can see the material and size very convincingly. It is very useful for dealing with the installation involving people's interactions, testing them in the real space. I made many versions of work from prototype to final pieces in my bedroom which helped me quickly test and adjust my work.



Figure 2.5 my bedroom is my studio (because of COVID19)

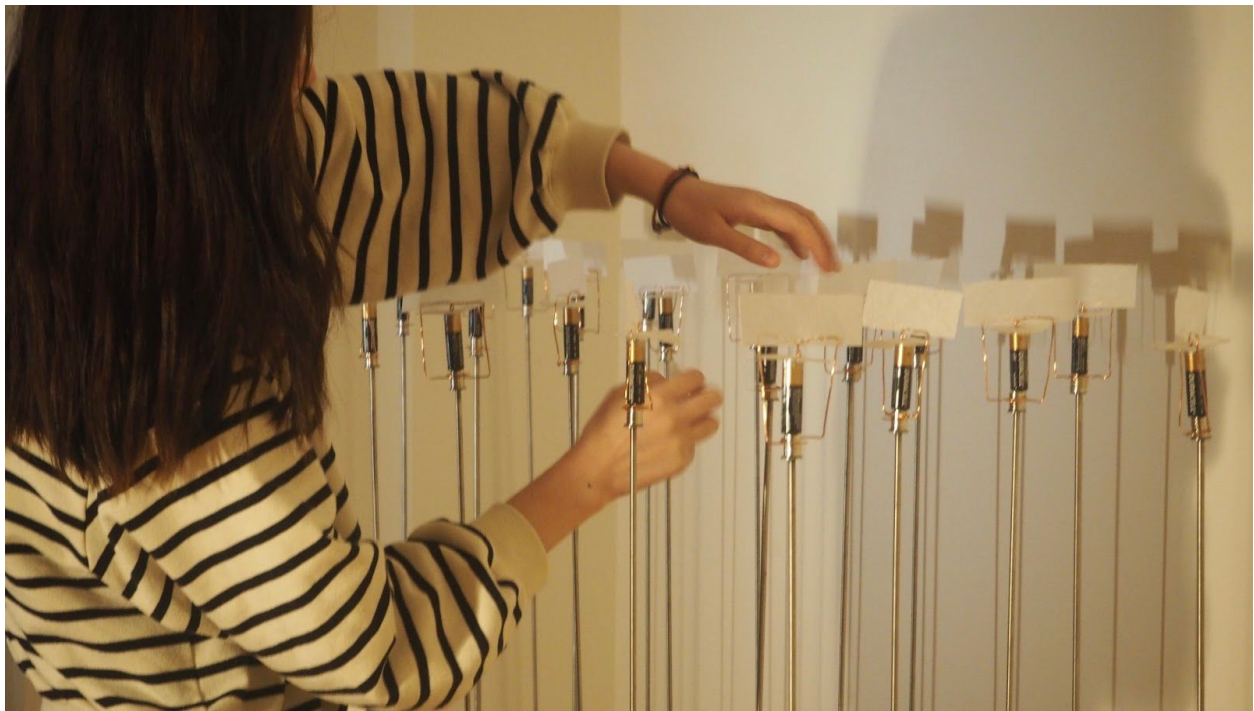


Figure 2.6 I worked in my bedroom

Chapter 3 Methodology

3.1 Design Principle

3.1.1 Transition from design for the industrial to fine art practice

This project is my first time developing beyond my design practice, and working within art. With a background in industrial design and user experience, it is much easier for me to provide a design solution to solving a specific pain-point. However, it is a brand-new challenge for me to get involved in the experimentations and critical practices that I have been learning about in art.

I think an art installation as opposed to a design project is a suitable approach for me to express my concept. Urban loneliness is a broad topic and can serve a discussion topic rather than a specific pain-point. Through art, I have more options to express my thoughts and research about this topic, and I really want to convey them to an audience who will feel it and contemplate it.

My work style remains organized and linear. In order to convey my idea, I work on establishing corresponding metaphors that can be accessible to an audience. After that, I start doing research and compiling contextual information to begin making the work

3.1.2 Narrative story based on interview of audience

In order to understand the detailed context of my domain, I interviewed many of my friends who moved to big cities and felt lonely. The interview serves a significant function to promote my work. I was deeply touched by the stories of my friends, and the interviews really helped to enrich my understanding of the topic from different perspectives. Compared with creating abstract features for all the target audience, starting from doing small prototypes for the specific interviewees was a more practical start.

Moreover, the interviews helped me to get positive and supportive feedback on what I am trying to do, reaffirming my determination to immerse myself in this project.

3.1.3 Evolve from testing and concrete the concept

I started my work from a rotating battery. I want to mimic the feeling of city new-comers, who are struggling for a better life at their own pace. The battery, charged and sturdy, is a perfect metaphor for the energy of urban life. And the movement creates the rhythm of vigor of city life - everyone is like a cog in the machine, negligible maybe but

Irreplaceable indeed. I continued to make more modules and place them together in order to create a community and networked effect. From the feedback I received in the first year thesis final critic session, the professors really liked the way I used ordinary daily objects to create this artwork, as well as the “magical” movement of the energy system.

In my second prototype, I made wooden pillars as the base for the kinetic sculpture. My testers thought the pillars represented towers in a large city. This response was perfect as my main concern is the alienation and loneliness that we experience when moving to a new city for school or work.

The feedback inspired me to create a sculpture that represents a large and forbidding downtown with many towers. There are no humans here, to mirror the isolation we feel when relocating away from friends and family. This mechanical sculpture hopes to evoke the feelings of disconnect that are pervasive in contemporary life. The addition of a projection of twitter feeds extends the meaning of the piece to represent a second type of emptiness, that engendered by our reliance on social media in place of real life interactions.

3.2 Iterative Prototyping & Decision Points

3.2.1 Energy mechanics

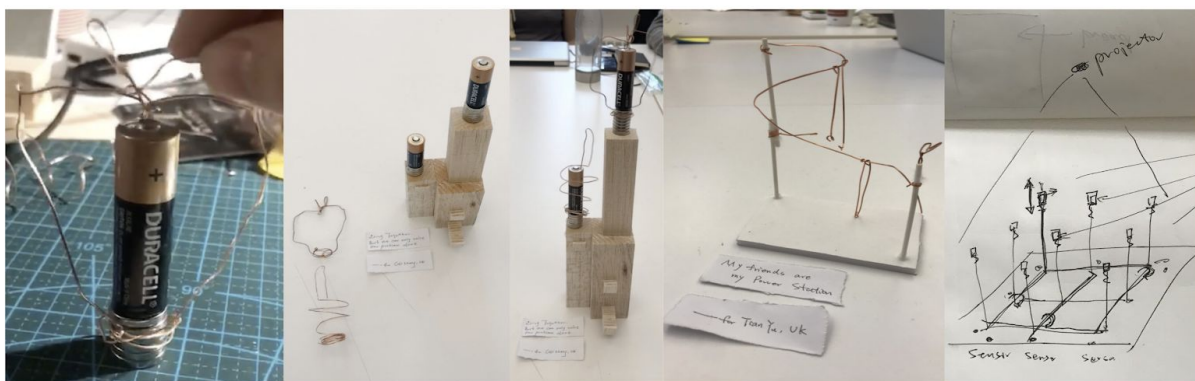


Figure 3.1 7-in-7 prototypes - Thesis 1 Midterm

My trial form started from an interview with my friend Yu Tian. She mentioned that she felt energetic whenever she spent time with old friends. She used the metaphor of being

like a power station lacking energy when she felt alone and depressed. I really liked this poetic metaphor and I wanted to find a form to represent this concept of 'energy' in relationships. I made different forms of energy generator prototypes and among them the spinning wire had the best potential to develop.

Then I tried to place them in larger groups and at different heights to mimic the image of high buildings in big cities. After that I added a text label with the interviews to give more content behind the concept. Based on the play and test session in my tThesis 1 class, my peers thought that the spinning wire attracted them, and I should continue to develop it. The wooden base height was essential to create the atmosphere of a modern city, but the wood had to be reconsidered in order to make it fit the tone of a lonely feeling that I wanted to convey.

3.2.2 Motion & Setup



Figure 3.2 prototype - Thesis 1 Final

I made this prototype in the final of my Thesis 1 class. I enhanced the height of the base by putting the spinning wire and battery on the steel poles. The material of base changed from wood cubes to thin silver steel poles, creating a greater sense of a grand but perilous urban space.

I added more units, which made me want to add even more to increase the visual of a large group, a crowd, a community. The professor who gave critiques for the Thesis 1 final presentation liked the simplicity of the work and commented that 'I would like to watch them rotating, it is a little dangerous, delicate, and poetic'. They encouraged me to go on and produce more units and see how it looks.

When I first made these pieces, they were almost as high as people's sightlines. This height made the behavior of observing a face-to-face interaction. So I had an idea of adding some projected elements to represent online interactions as another type of communication. I tested the letter 'H' with a projector (which is the initial letter of my name). My professor suggested to be careful with extra add-ons in this work, and stressed keeping simplicity and that adding a projection part should have meaning and feel related to the whole piece.

3.2.3 Playing with projection

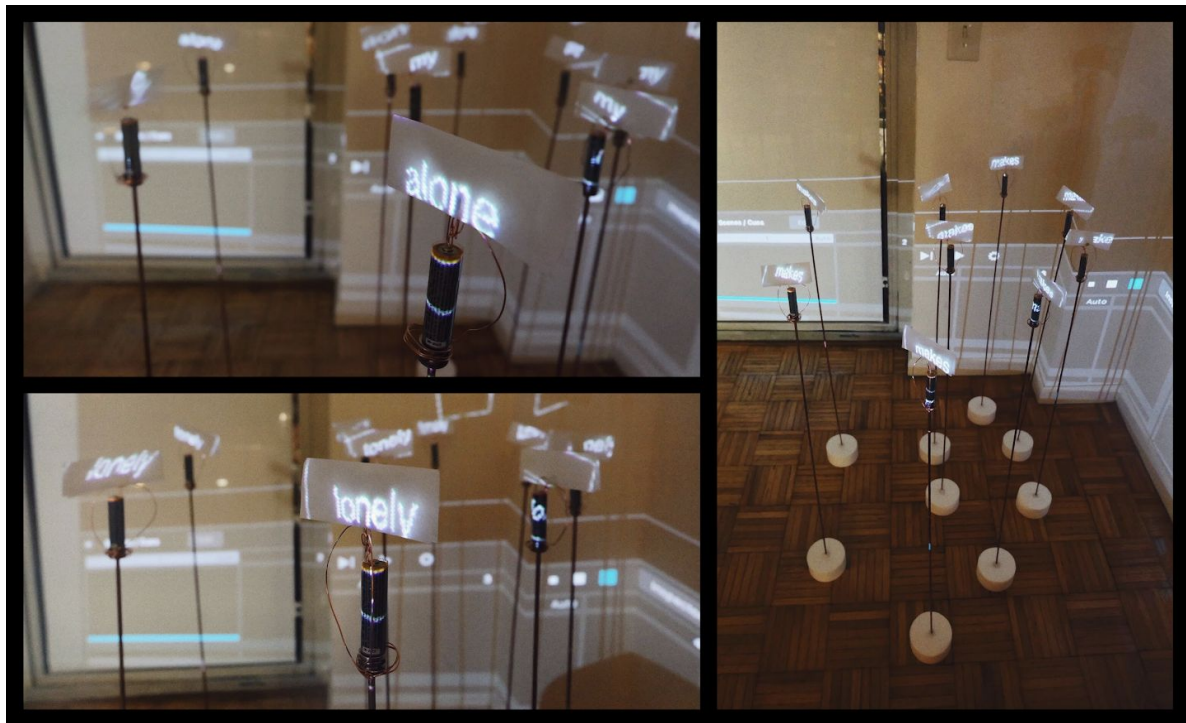
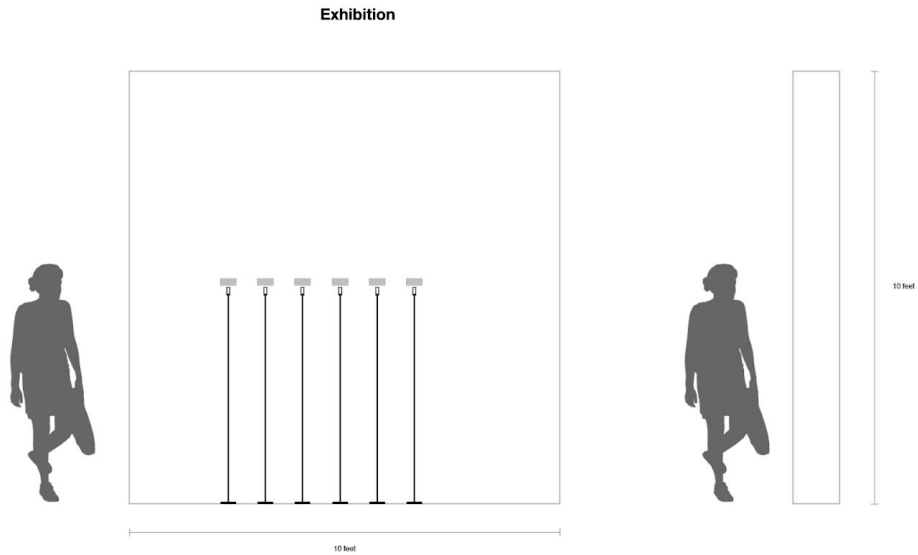


Figure 3.3 prototype - Thesis 2 Midterm

In this prototype, I tested the idea of projection and I made more units for the Thesis 2 mid-term. I condensed the interviews into one sentence, and projected them a single word at a time on paper above the spinning wires. These words expanded and shimmered during the rotation. Professors who shared critiques thought the effect of



** Flexible movable units, so the arrangement has not fully decided*

Figure 3.4 setup scale & ratio

I made 35 units in my final work, which created a compelling feeling in the installation. I especially paid attention to the details of the structure of the work, for example the wire structure is standardly measured, the position of each pole is accurately placed and marked.

I view this piece as a time-based performance. As different papers light up, the choreography of each unit becomes important as a whole. Then I played with the control of each projection mapping piece, making it to light and dim as designed.



Figure 3.5 making process

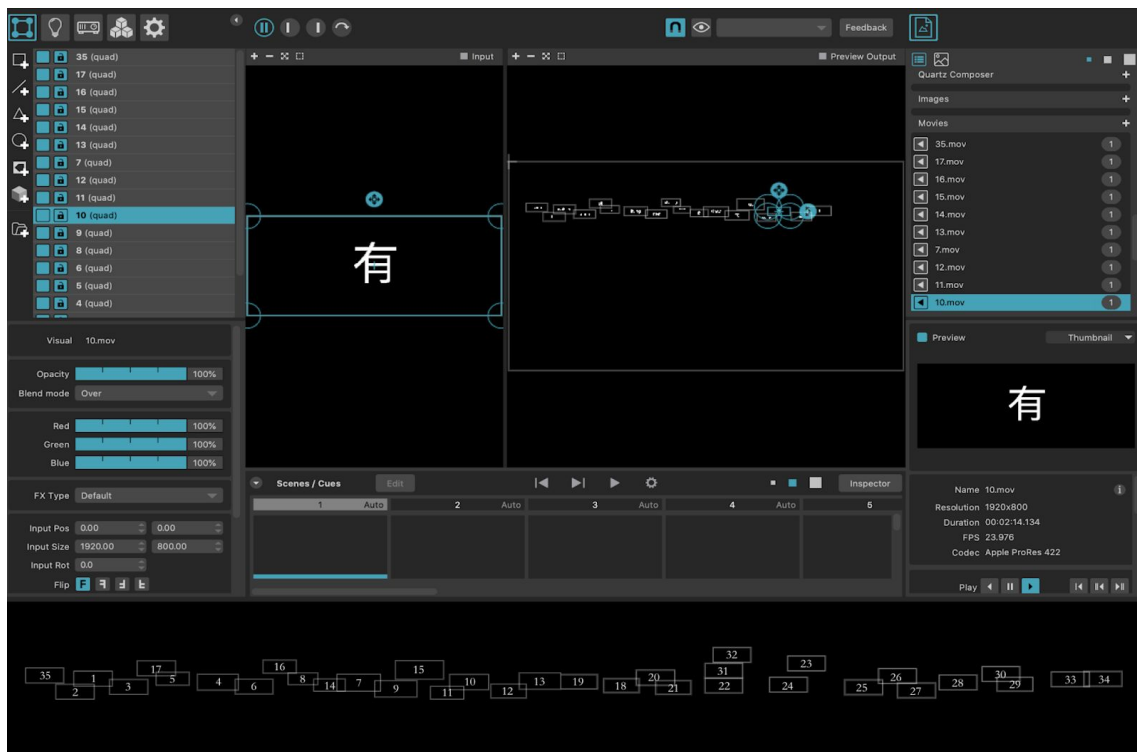


Figure 3.6 projection mapping setup



Figure 3.7 position marker



Figure 3.8 setup process

3.3 Delivery



Figure 3.9 35 units in motion

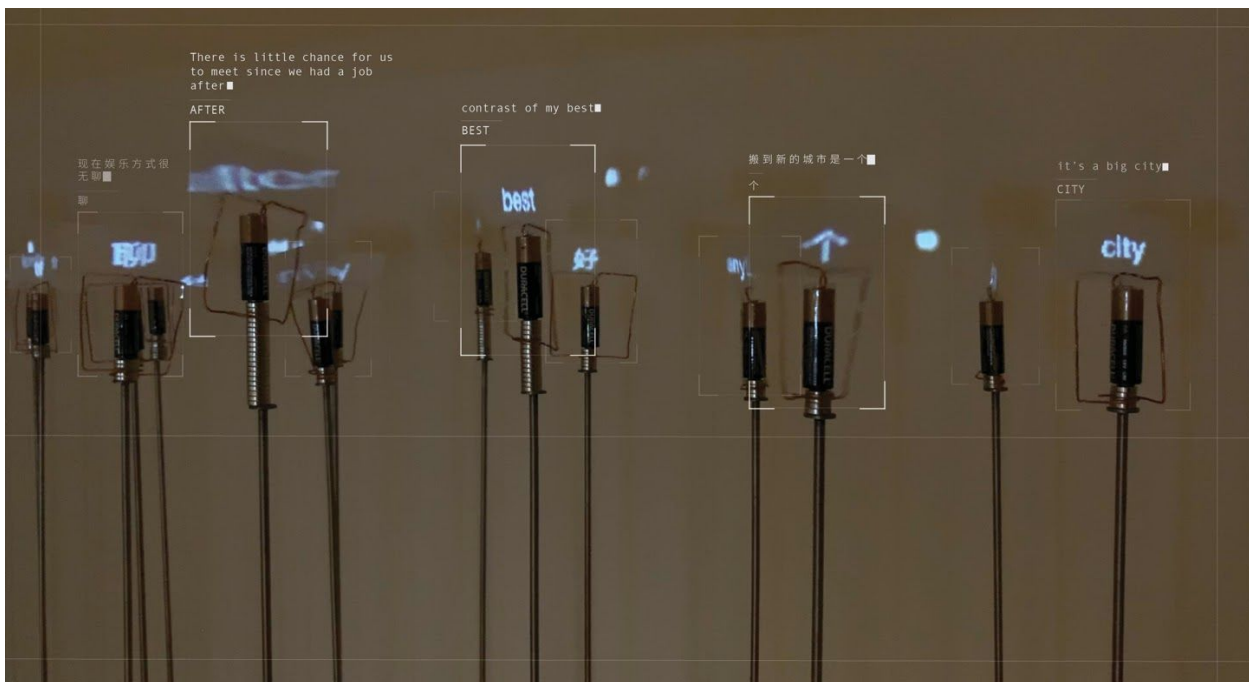


Figure 3.10 concept explanation

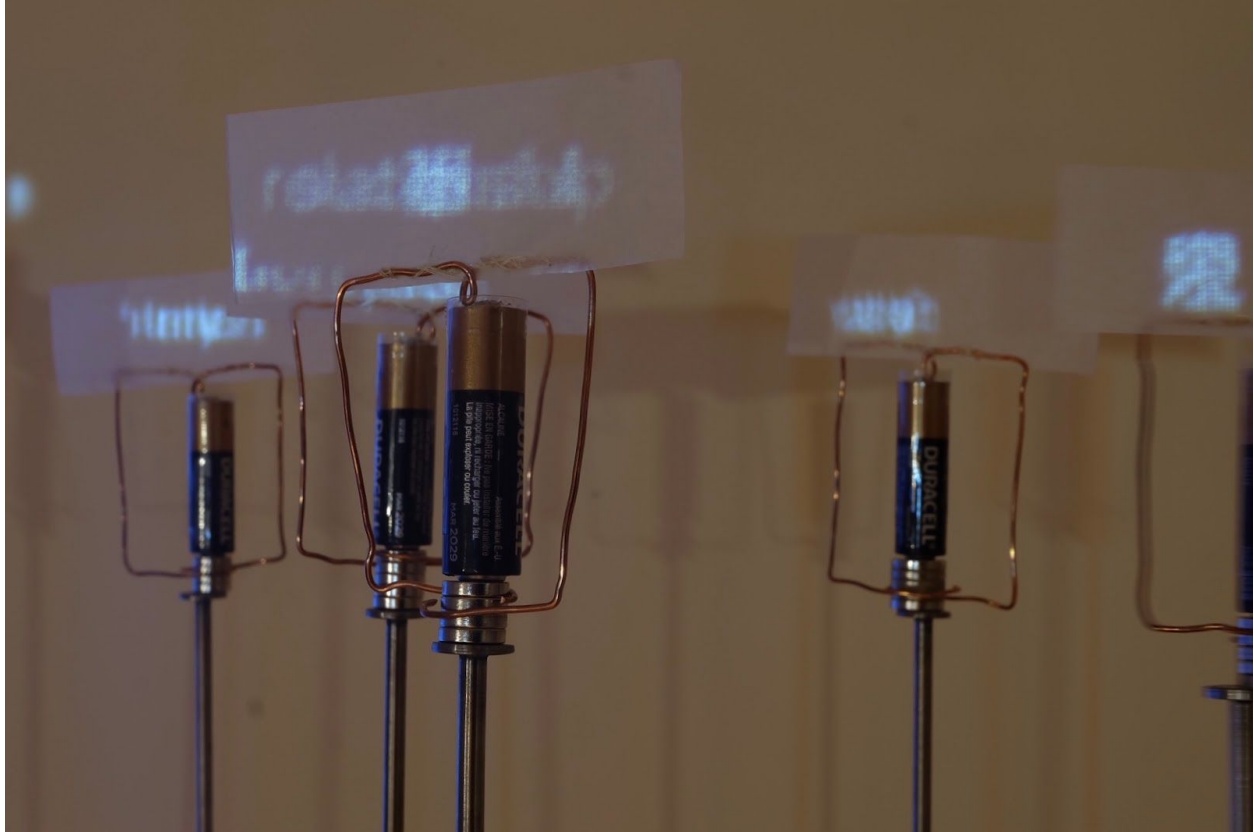


Figure 3.11 long exposure effect

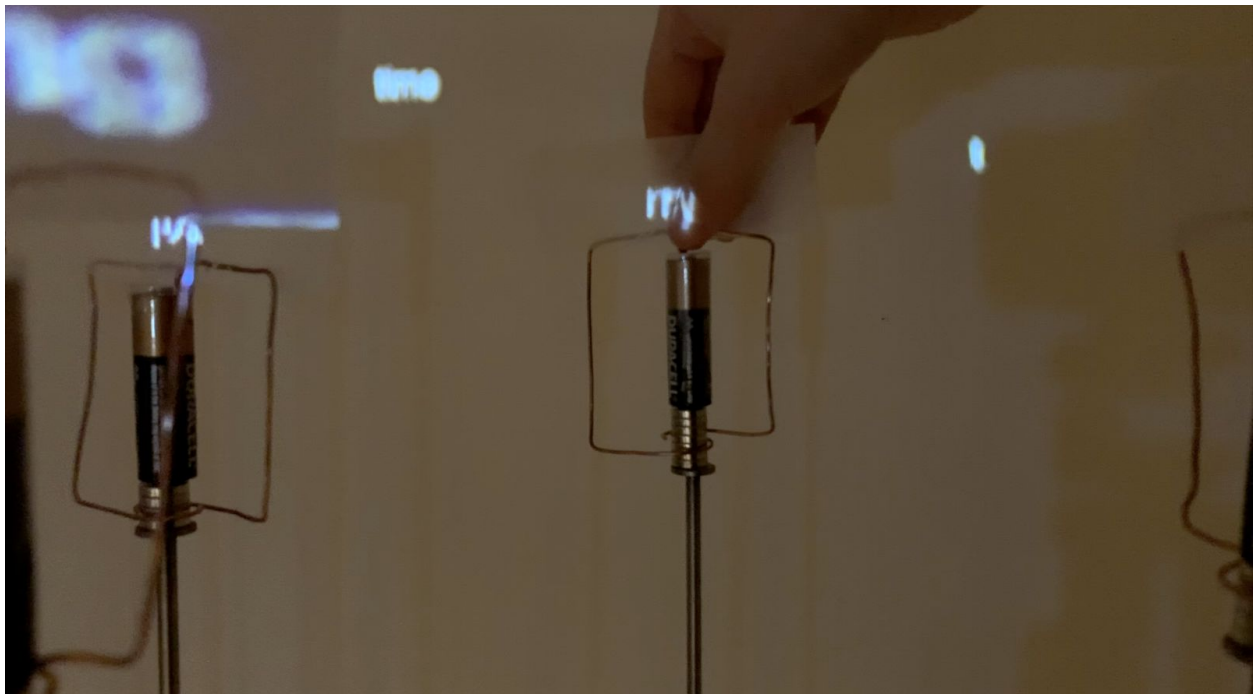


Figure 3.12 place the paper to rotation

Chapter IV: Evaluation

4.1 Things I learned

- ***Always ready for absorbing inspiration***

I always got inspiration when I was out for a musical show, visiting museums, or traveling. The idea of moving sculpture comes from travel experience in Boston.

- ***The importance of purpose and idea***

I was usually confused by purpose and approach, especially in first-year DT Program. It was very easy for me to dwell on some form, technical form or visual effect, instead of more essential core questions: What message I want to say? Why is it important? I feel more powerful as a designer now. Because I have shifted my attention more on answering these two questions above. And I like this change.

- ***Iteration do has value***

I used to hate iteration, the reason behind is the same as I mentioned in my first part. In this course, I have experienced several rounds of iterations. Whether I bring my concerns or I am quite satisfied with my current iteration, I can still get progressive feedback after I show or share my work, and iterate the next better one.

4.2 Current State & Future Envision

My work is intentionally designed to be shown in an exhibition shape like a museum. My current opportunities for showing this work are limited because of COVID19, while I was only able to realize the work in my bedroom. If I have a chance to show my work in an

exhibition in a bigger space, I would like to incorporate more units and create a more monumental effect. This would require more projectors and a more accurate control of new elements. My current goal is to number 150 units-the number of Dumba's Numbers (One can only be able to maintain 150 people in a relationship).

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