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BUFFERING...

A thesis

presented in partial fulfillment of requirements

for the degree of Master of Fine Arts

in the Department of Art and Art History

The University of Mississippi

Nicholas Vialpando

May 2019

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ABSTRACT

This body of work uses visuals from modern technology to explore our current culture of instant gratification. Technological speeds increase at the expense of human patience and our tolerance for even the minutest delays, causes us to experience frustration after even mere seconds of interruption when streaming a video or downloading a webpage. These few seconds of “buffering” contribute to the growing disconnect between advancements in technology and our perception of the delays, which all devices eventually experience. It often seems that we are caught in a three-legged race where technological improvements and human expectation are attempting to run in tandem, yet the two are never *exactly* in sync.

Buffering... focuses on scenes from everyday life, such as cooking breakfast or a day at the office, which are presented in a half-rendered, frozen form. These works are partially pixilated in certain areas to create a sense of perpetual buffering, illustrating a never-ending frustration between advancement and expectation. This body of work is meant to create an opportunity for viewer to experience a sensation of tension while the information perpetually buffers. This sensation reflects how society has been conditioned by its technological devices and their implied promises of instant gratification. It aims to shed light on the frustration that happens when the promises are broken.

DEDICATION

This thesis is dedicated to friends and family who have supported me throughout my academic career, as well as to the professors and educators who have made this work possible without such strong support, this thesis may have never happened.

ACKNOWLEDGEMENTS

I would like to thank committee members Durant Thompson, Virginia Chavis, and Philip Jackson for their constant input and help in cultivating this body of work, and The University of Mississippi's Center for Manufacturing Excellence for allowing me the use of their technology. In addition, I sincerely thank Michelle Wilson and Sophie Andarovna for their help in editing and organizing this document, Seth Thibodaux for his assistance in installing the exhibition, and continued assistance with running equipment. Lastly, to the Red Bull Corporation for providing me the energy to keep working.

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CHAPTER I

THEORETICAL AND CONCEPTUAL

Whenever technology makes noticeable strides, whether cutting-edge pressure-sensitive cell phones or cars able to communicate with one another, the changes form a new baseline standard for what constitutes “modern technology.” As a result, people are by and large forced to adjust their perceptions and expectations in an ever-changing relay to reconcile “upgrades” with “standards.” When a new standard for technology is just cementing itself into our daily lives, it is suddenly eclipsed by another new development that reconfigures the lowest common denominator for its kind. This rapid advancement has left people unable to get used to or become familiar with many new forms of technology before a new one comes along, as the rate of turnover for electronic gadgets in the last two decades has been astounding. Despite how quickly the “new” replaces the “old” in the world of technology (or possibly because of it), there are still glitches and stalls that occasionally intrude on the otherwise seamless use of our devices. Since consumers are constantly conditioned to expect inventions that are smarter, better, stronger and faster, the fact that delays and buffering still happen with our technology reveals a paradox. While humans cannot keep up with the rate of technological development, our devices simultaneously cannot keep pace with our increased expectations and the diminished patience for anything less than instantaneous perfection. Because technology has

become so advanced, those few seconds during which it lags become all the more obvious and unpleasant for the user.

When I began the graduate program, I already knew I wanted to explore the topics of technology, its influence on my generation's concept of time/speed, and our nostalgia for pieces of now-outdated technology. I began creating work that dealt with the discrepancies between the "human," or literal timeline and the technological timeline, as these two do not always keep pace. The intent behind this is to present how rapidly technology changes in contrast with our brain's ability to "keep up with" and get used to new tech forms. Conversely, my work also reflects on the minor stalls in an electronic device's performance that make the divide separating the two aforementioned timelines so visible to us.

For this work, I was inspired by the theoretical concept of the 'Uncanny Valley.' In 2004 Clive Thompson wrote an article titled "The Undead Zone" which comments on robotics designer Masahiro Mori's observations on the realism of his designs. Turns out, when digital renderings of humans approached the point of being **too** human-like and **too** realistic, viewers were suddenly struck by the aspects of the graphic that were off. The eye immediately gravitated to that which was artificial about the images. Thompson described this paradox, saying, "When a robot becomes ninety nine percent lifelike, so close that it's almost real, we focus on the missing one percent." Mori called this phenomenon the "Uncanny Valley." This theory applies to my work as well; when technology becomes so seamless and so efficient, people notice interruptions and faults with the systems all the more. If viewers of Mori's graphics could only see the "one percent" that was not human, I argue that modern technology

often draws attention to the brief seconds of “buffering” simply because the rest of the time our devices work so well. (“The Uncanny Valley,” 2012.) Musing on time, advancement and the ways that “old” technological devices so quickly become relics on the scrap heap of ingenuity, I was drawn to something else: fossils. In a way, the computers and coffee pots of ten years ago are metaphorical (and even literal) “fossils” of the very near past. Once at home on the shelves of department stores, these now reside in landfills. One moment these gadgets were the epitome of technological advancement and most people failed to see how anything better could come along, until it did. Suddenly, these once highly sought-after devices became obsolete and lost their value, seemingly overnight, as a new generation of the latest and greatest displaced them. In my opinion, this rapid cycle has left the millennial generation in a constant state of anxious attachment disorder in terms of the technology they are surrounded by. Because of this, I believe a kind of nostalgia arises for long-outdated forms of technology because they represent a stability, predictability and a comfort that their modern equivalents fail to deliver as a result of their constant “upgrades.” This, coupled with the frustration and confusion experienced when brand new pieces of technology nevertheless need to “buffer,” forms the theoretical underpinning of my exhibit and thesis.

I was inspired by my own nostalgia, focusing on the technology from my childhood, and how I could preserve these outdated items from the 1990s in an artistic way. I am especially interested in pieces of technology that were short lived and easily forgotten, but still served as important stepping stones for the new and improved staples of our everyday lives. Human desire for instant gratification is intensified by technological advancements, but these same

advancements often leave us stranded between expectation and frustration because there are still inevitable hiccups in any new invention.

In my previous sculptures, I preserve objects commonly associated with childhood, but did so by using materials associated with industry. This was done in an attempt to obscure childhood nostalgia for outdated objects by juxtaposing them with the often cold, unfeeling materials found in industry, work, and adulthood. While working on this, I became interested in the psyche and headspace of a young adult struggling to accept the present while maintaining such high regard for the past. This vein of research turned out to be only marginally impactful on my thesis, but it did allow me to explore the idea of a “forced environment” with a strong contrast in materials. My exhibit encourages the viewer to interact with an object that is not functioning on the same temporal plane as what governs the present. These are objects capable of evoking nostalgia for many, and they become stuck in time, unable to “buffer” quickly enough to survive in a world of constant ingenuity and technological turnover. This “forced environment” is a display of conflict, one that the viewer must reckon with. By the inclusion of the everyday objects in these installations, there are remnants of the familiar, but the viewers are headed into unfamiliar territory that these objects do not belong in and cannot adapt quickly enough to navigate. This conflict, in the visual space, attempts to tap into the audience’s memory of the obsolete objects of our past while at the same time forcing them to endure the inconveniences associated with “buffering.” Indeed, the half-rendered forms may call to mind the days of screens frozen in mid-download. They may even dredge up memories from a more distant time in the viewer’s life – childhood. Many of us may long for a return to

the “simpler times” of drip coffee machines and mechanical toasters. My work offers such a return, but with a modern, somewhat ironic twist about the digital age.

Much of the work in this exhibition arose from researching why members of the millennial generation are so nostalgic for the “old,” material culture of their childhoods, yet at the same time have ever-higher expectations of technology in terms of speed and ease of use. One thing was very obvious to me; frustrations with technology usually arise when our expectations, which are themselves conditioned by material advancements, are left unmet. Technology has enormous power to dictate our emotions. For example, a video pausing to load can solicit a much stronger emotional response than a stop sign, yet in essence they are the same type of pause in our schedule. The difference is that we have been conditioned to expect the stop sign, while media and material developers present the pause in the video as the height of inconvenience.

Part of the ironic, absurd juxtaposition that my work also explores is the expectation that technology, by default, makes our lives easier. Often times we will forgo “traditional” ways of completing a task in order to use technology, assuming that it will be easier, when in reality it may take even longer to do so. We will often sacrifice time for convenience, especially when technology is involved, which seems odd since time is arguably our most valuable resource. These themes are all evident in this body of work and ask the viewer to reflect on these themes in their own lives, while challenging some current ideas about technological “advancement.”

CHAPTER II

RESOURCES AND REFERENCES

Technology and art have long been intertwined. As tools advanced and developed, new methods and forms of artistic works were born; stone carving gave way to mold casting and eventually welding. When something new becomes available, artists often try to incorporate it into their work in order to stay relevant. Yet this process also bears with it a self-negating hazard; technology potentially diminishes “hands on” art, and renders it obsolete along the way. Perhaps the most famous historical battle between technology and the individual artist-craftsman happened during the Industrial Revolution at the turn of the 19th century. During this time, the deluge of mass production hit society. Interchangeable parts became more standard and factories operated twenty-four hours a day. Artists feared that factories would be able to create items at such great speeds and in such high quantity, that it would diminish the value of the hand-made, small-batch works that they produced. Artisans and craftsmen attempted to reform their trade in response. The Metropolitan Museum of Art’s website describes the movement:

“Anxieties about industrial life fueled a positive revaluation of handcraftsmanship and precapitalistic forms of culture and society. Arts and Crafts designers sought to improve standards of decorative design, believed to have been debased by mechanization, and to create environments in which beautiful and fine workmanship governed. The Arts

and Crafts movement did not promote a particular style, but it did advocate reform as part of its philosophy and instigated a critique of industrial labor; as modern machines replaced workers, Arts and Crafts proponents called for an end to the division of labor and advanced the designer as craftsman.” (“The Met’s Heilbrunn Timeline of Art History,” 2019).

Though I think this response was merited at the time of the industrial revolution, this anti-industry mindset has seeped into the values of art, and still to this day is an institution for artists to challenge regularly.

During the 20th century, art developed an increasing rivalry with technology and manufacturing. While in some cases this rivalry made perfect sense, I believe it is possible to utilize all that technology has to offer in order to communicate an idea artistically. Unfortunately, objects produced via technology or produced “en masse” are often not considered art since the role of an artisan’s hands in the production is difficult to pin down. This concept is ingrained in the minds of many artistic puritans, maintaining a firm separation between technologically produced items and “true art.” Marcel Duchamp challenged this conception early on with his “Fountain” piece, wherein a mass-produced object was placed in a fine art context. Art arguably succumbed to the strength of the crafts movement, until the Pop Art movement came about. *The Art Story* describes how Pop Art challenged conceptions of what constituted “art:”

“By Creating paintings or sculptures of mass culture objects and media stars, the pop art movement aimed to blur the boundaries between ‘high’ art and ‘low’ culture. The concept that there is no hierarchy of culture and that art may borrow from any source has been one of the most influential characteristics of pop art.” (“Pop Art Movement, Artists and Major Works,” 2019)

This idea that art may borrow from any source paved the way so that artists could utilize machines in the creative process without denigrating the piece's artistic value. Furthermore, the idea of blending high and low culture, or technology and creativity into one voice, supports the idea that it would be impossible to make art specifically for a millennial audience while ignoring our reliance on technology. Technology in all its forms has become such an integral part of our day-to-day life that its role as a vehicle for artistic expressions seems entirely logical. It is these interactions with technology and our increasing affinity for technological aid that pose the greatest potential questions for the future of art.

In *Buffering...*, I challenge the viewer to ponder on these questions. When entering the exhibition, one of the most immediately noticeable features is the blending of mass-produced objects with an artistic alteration. Noticing the purpose behind the amalgamation pushes the viewer to question the paradigms of art vs technology, pointing out not only the differences, but the harmony they create as well.

CHAPTER III

PROCESS, MATERIALS, AND METHODS

To present this body of work, I spent a great deal of time trying to figure out the best mediums to relay my ideas effectively. I eventually settled on the use of found objects, mixed with three-dimensionally printed elements, as the final product. These materials encourage the viewer reflect on technology and its processes as it ventures into the future. Since 3D printing is a relatively new process that has a very distinct patterning and surface, it lends itself well to my concept.

3D printing has been referenced across many forms of media in recent years, creating a number of things from an edible hamburger to whole houses. This process gives people the ability to print anything. However, my work illustrates what may happen when a slow connection interrupts the process by buffering. With so much pressure on new technologies to improve our quality of life, I believe that the 3D printing process is the most appropriate visual example that can relay my idea to the viewer. The intermingling of the printed object with a found object from everyday life normalizes the printed objects through the context of mundane life tasks. This connection encourages a feeling of tension in the viewer by bringing attention to the slow, buffering state of such simple daily tasks that, in reality, would be faster to accomplish without the use of technology. I have chosen objects with a universal familiarity so

that a broad audience will recognize them and be able to identify with their use. For some viewers, the gap in age between the generations of technology and utility may create a foreign experience with the works. A younger generation finding television snow relaxing, where as a generation that encountered it naturally may find it aggravating.

There are many limitations that I have encountered using this materiel and its process. I have had to learn all of the digital drafting and pattern creation from scratch, as well as how to change file types to ones that are readable to the printer. The hardware of the printer is also new to me. Challenges such as leveling the print bed, setting temperatures that specific plastics require to be heated in order to become fluid, and even negotiating how hot the bed must be in order for the plastic to stick to the glass, have all helped me learn and grown as an artist. Another obvious issue I have encountered is the size limitations dictated by the printer model. I am working within a box where the extruder can only move to a space that's twelve by twelve by sixteen inches. I have found ways to digitally cut objects so that I only have to print pieces in order to fit into the print box. But that, of course, leads into the biggest limitation of all; time. This time restriction eventually led to altering found objects instead of using full prints for every object. Each object is printed one layer at a time, building upwards, at layers that are only .01 millimeter thick. Very small prints (around 2 inches cubed) only take up to an hour to complete, while larger ones can take days. While the printer is running especially efficient on these multi-day prints, many things can go wrong. Something as simple as bumping the print bed or a temperature change can cause the object to detach from the print bed. In most of these situations if a print encounters failure, no matter how close to completion, the print is unsalvageable and a new, fresh print must be started. This can be, and has been at times,

catastrophic for both my schedule and my resources. Attempting to cut down on these potential chances for failure, I have arranged most of my objects to have the largest footprint possible on the print surface. Unfortunately, that usually translates to a longer print time overall. Through learning these processes and immersing myself in this medium, I have found a huge network of people online sharing ideas, patterns, trouble shooting, upgrades to machines and all things in between.

As the newer technology in 3D printing has become more accessible, I expected it to be very user friendly. However, the learning curve associated with the process has been more substantial than I had imagined. I assumed that 3D printers had existed long enough and had been through enough channels, that they would have been streamlined and simplified. I myself had become victim to the very concept that I hope to bring to light with this work; human expectations of instant gratification via flawless technology. At times I was quite frustrated the creative process of 3D printing. I had to wait for prints and, in a sense, had to deal with the “buffering” of the object while it appeared .1 millimeter at a time. I have left the rough layering marks on my work so that the viewer can inspect each layer, realizing the many passes (or revolutions the printer head makes on each layer) it took to forge an entire object. I want people to get a glimpse into what an undertaking this whole process truly was, and how frustrating the process can be for those with expectations of fluidity and perfection. Once up close, the layer pattern can become overwhelming. In a single piece, the viewer can count the layers “ad nauseum”, but likely not finish counting them in one evening. The printer and these layered designs have created a tangible metaphor for time itself, passing on a micro-scale, as

we wait for things to get easier faster, and smarter. Pieces like *Loading Scissors* illustrate this best with visual step-lines throughout the entire object.

CHAPTER IV

DESCRIPTIVE ANALYSIS

The exhibition for *Buffering...* is an immersive experience for the viewer. It is set up to plant the seed of aggravation when entering the gallery, and further nurture that idea as the viewer passes through. I have chosen moments from everyday life that I believe would be the most frustrating to have delayed. While these vignettes may seem inviting, there is always a glitch that detours the viewer from actually engaging with the scenario.

Gallery Entrance

The front room itself houses vinyls for my name as well as, “MFA Thesis Exhibition,” a guest book, and a condensed version of the abstract, all of these objects have voxels added to them eluding to a digital glitch and what is to come in the main gallery. The other main wall of the front room has an intentionally low-quality buffering wheel projected on an endless loop. This imagery is chosen to prompt the viewer into a frustration, not only of a potential video not loading, but also of the low quality of the image as if the buffering wheel itself is having problems loading

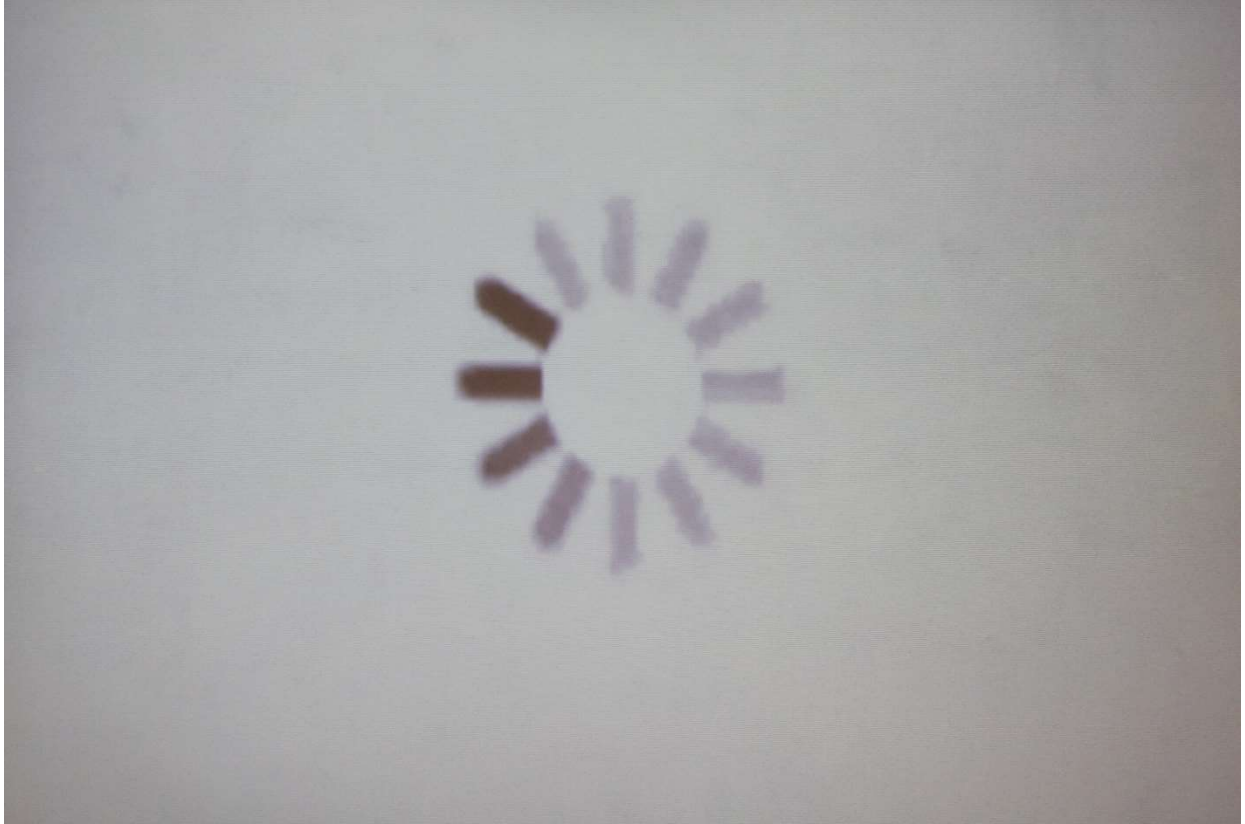


Exhibition Entrance

Vinyl, Paper, PLA Filament, Glass

90" x 27"

[PLATE I]



Projected Wheel

Projection

98"x 64"

[PLATE II]

The Breakfast Scene

Upon entering the main gallery, the first scene that the viewer will encounter is *The Breakfast Scene*. Breakfast seems to be the one meal that we tend to rush through so that we can get a start on our day. When I cook breakfast, I make multiple things at once, early in the morning and still waking up, taking on these tasks usually leads to a large margin of error such as accidentally burning the toast. I created this scene with the intention to make every object frozen in some state, blending the 3D printed voxels with real objects. Work boots sit beside the table almost fully materialized to help set a sense of urgency for a quick breakfast. The table is set with toast in the center, with varying levels of preparedness loading in. Next to that lies a fork with a few tines blocked off to prevent it from skewering anything. Above the fork sits two eggs over easy with frozen yolks in a pan that is almost complete but still have voxelated sections. A coffee cup also sits empty on the table with a handle so roughly loaded that it would be uncomfortable to hold. A salt and pepper shaker that have fully rendered into our reality, but the contents within are still stuck in an implied cyberspace. The stool in front of the scene where the owner of the breakfast would be seated has a stool with one leg stuck half rendered, which makes the stool itself feel unstable, and acts as a repellent for anyone who would consider sitting at the table.

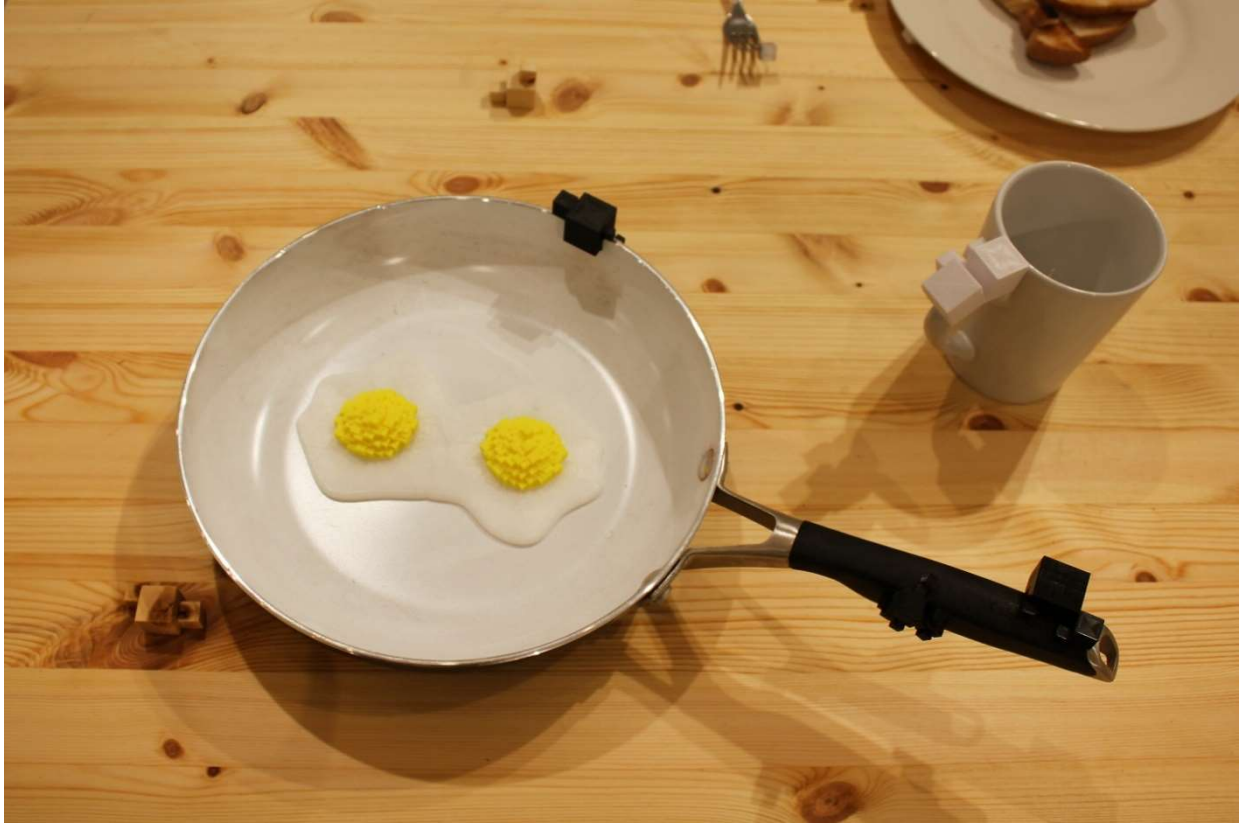


The Breakfast Scene

Wood, Found Objects, PLA Filament

47" x 79" x 33"

[PLATE III]



Eggs and Mug (Detail)

[PLATE IV]



Stool (Detail)

[PLATE V]

Office Job

The next scenario to investigate is *Office Job*. Another pivotal point in the average day is the few moments before we are released from our work responsibilities. This scene explores a typical office, frozen at 4:58. The chair has its back mesh frozen with a visually uncomfortable section of voxels, as well as two of the wheels completely blocked out hindering its ability to roll. A laptop sits in front of the chair with a whole section stuck as well as parts of the screen and the logo on the back. The mouse is voxelated to prevent it from freely moving around the pad, and to prevent the movement of the scroll wheel. Sticky notes and a pen holder are also seen on the table with rendering preventing the pad from being written on. Behind the desk, fixed to the wall, is an analog clock that reads 4:58:37. The clock itself has spots that have glitched as well as the second hand ticking back and forth between the 37th and 38th second representing a literal glitch in time. The sterility of the office can also be interpreted as tense, helping to get the feeling of uneasy waiting across. Also included in the office scene are shelves displaying earlier works of buffering tools that supported the themes discovered throughout 3D printing research, and helped complete the scene itself as most offices have knick-knacks on display.

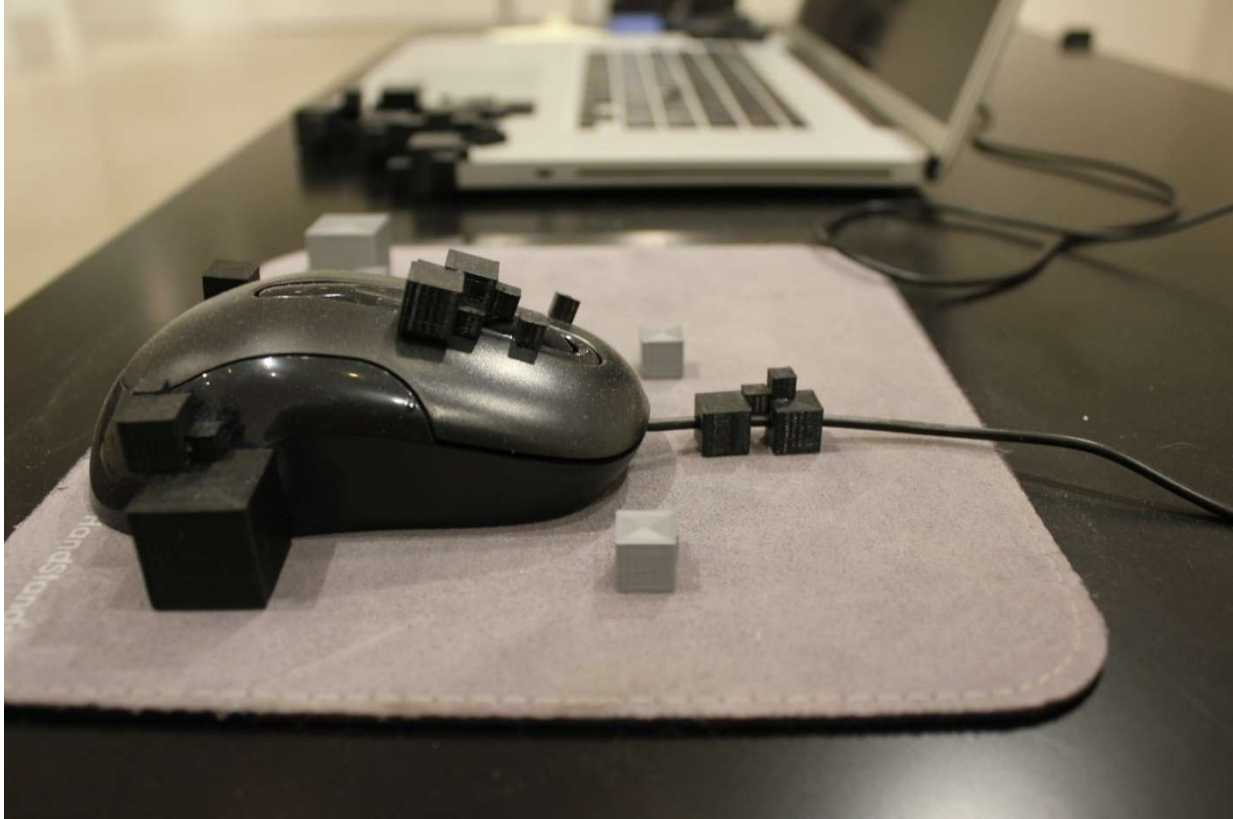


Office Job

Found Objects, PLA Filament, Wood

138" x 114" x 83"

[PLATE VI]



Mouse and Mousepad (Detail)

[PLATE VII]



Clock (Detail)

[PLATE VIII]



Tools (Detail)

[PLATE XI]

Relaxation

Another point of the day I think is the most frustrating to have interrupted, and also the one that gave me the inspiration for this vein of research, is the relaxing time in the evening we spend to unwind after a long day's work. This scene is very minimal in nature and uses some of the same imagery as the previous two. The chair has a voxel grouping obscuring enough of the cushion to make it uncomfortable for a person to be seated. The television remote is glitched to obscure the channel control button as well as the power itself. The lamp has a glitch around where it meets the table and the pull cord is frozen to the neck of the lamp hindering its ability to be turned on. The television in this scene is on and only it plays 'snow,' which I interpreted as a pre-buffering reminder of the antenna television era. The television and power cord have areas of voxelation as well as the power outlet that it is plugged into. The last element in this scene is on the wall and has a large pair of half-rendered scissors hanging on it. This is another one of my earlier pieces that was included, but it was also placed here to mimic a living room scene with a decorative on the wall to solidify the scene. The scissors themselves are a gradient of colors reminiscent of a frozen video when the pixels on the screen tend to mix up the colors. The inclusion of the scissors also best represents the 3D conversation mentioned earlier in this paper.



Relaxation

Found Object, PLA Filament, Video

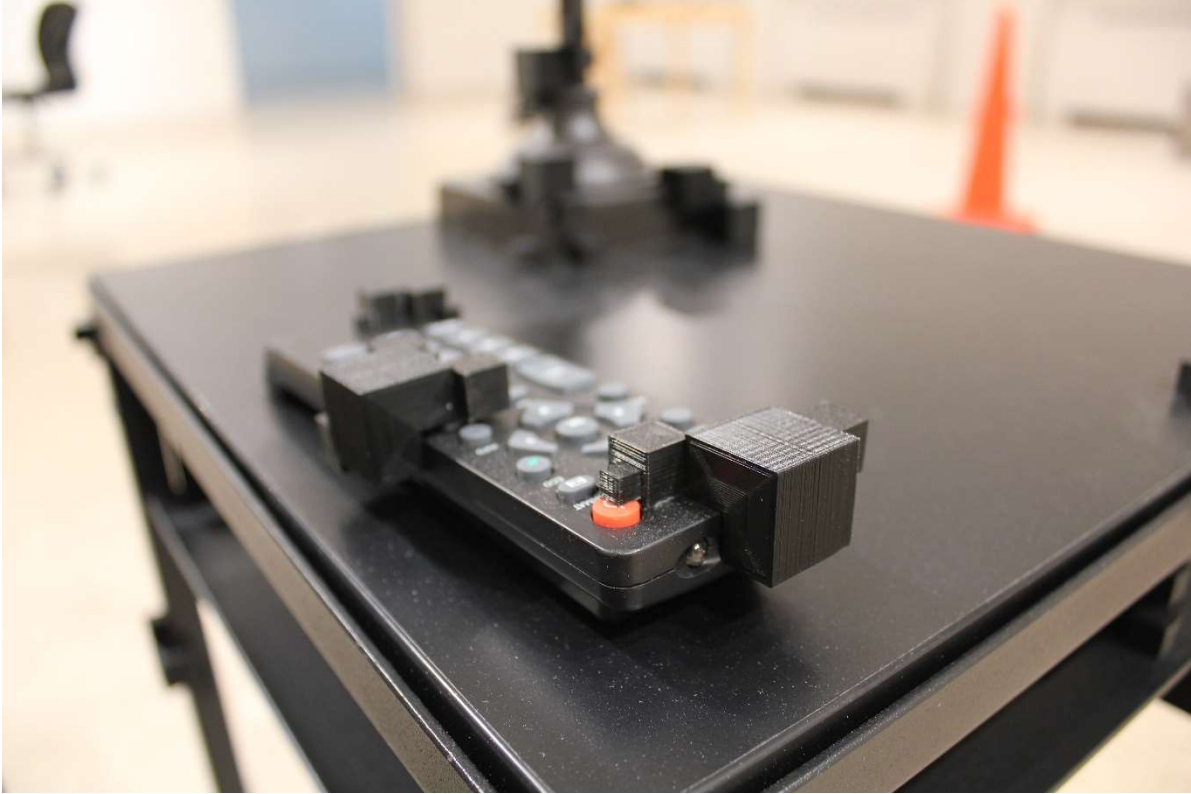
114" x 137" x 71"

[PLATE X]



Television (Detail)

[PLATE XI]



Remote (Detail)

[PLATE XII]



Loading Scissors

PLA Filament

23" x 39" x 5"

[PLATE XIII]

Construction

The final vignette is the Construction Scene. This one seemed the most out of place of the four, but I thought that even for those who have never worked in manual labor would have at least encountered some sort of construction delay as they navigate through their lives. It always seems that there are unexpected delays in our day due to construction which cause us stress, and more importantly, frustration. I constructed a wall in the back corner of the gallery which was pixelated and degraded, from its completed, painted sheetrock finish down to loose brick. The wall itself was a barrier, physically blocking the viewer from seeing the back of the gallery forcing them to physically move around it if they wanted a view of the backside. It was also a metaphor for the barrier that buffering times and loading can cause on the flow of our day. A sledge hammer is placed near the loose blocks and some rubble implying that this wall can be destroyed, yet the hammer is frozen too, illustrating the futility of us trying to catch up with our own expectations.



Construction

Cinder Block, Drywall, Wood, PLA Filament, Vinyl

162" x 108" x 103"

[PLATE XIV]



Wall (Detail)

[PLATE XV]



Wall and Hammer (Detail)

[PLATE XVI]



Hammer (Detail)

[PLATE XVII]

Reception

The last important aspect of this exhibition was the experience of the show. I made sure to pay attention to the details of what normally happens at receptions and brought the visuals of buffering to all aspects. The reception had food and beverages for the patrons laid out, but all of the food was in the shape of the voxels around the show. Ice was made in perfect cubes even the plates themselves were cubed. This element added an extra layer to the viewer experience for *Buffering...*



Reception (Detail)

[PLATE XVIII]

CHAPTER V

CONCLUSION

Buffering... While the culmination of years of research, is still only the beginning. This concept itself is inherently fluid. When new technology is developed and advanced, our expectations will follow suit. In five years, I am not sure what our complaints with technology will be, but I am sure that they will be different than the specific ones we have today. I shed light on this issue in this thesis, and also poked some fun, but the reality I have found is that our expectations will never be satiated with our technology. Human nature is to always want more and it is an instinct that has helped maintain our species. It is the driving factor behind all of the advancement of our culture. So, this series and research has only just begun. There is a lifetime worth of research and work to be made about this phenomenon.

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VITA

Nick Vialpando was born and raised in a suburb of Denver, Colorado. After finding an interest in metals and three-dimensional art through a jewelry class offered at his high school, he went on to Colorado Mesa University to receive his Bachelor of Fine Art in sculpture. Through his undergraduate career he spent time as a teacher's assistant and found he had an interest and passion for teaching. This then led him to The University of Mississippi to pursue a Master of Fine Arts Degree in Sculpture.