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FALL2017 IDM NYU

For the current and future Pre-Thesis students.

students
questions
statements
interviews

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Inter_

between, among, in the midst of, mutually,
reciprocally, together, during

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Immigration Anxiety by Hasan Ansari

Hasan Ahmed Ansari

HCI and Immigration Anxiety

Question: How can HCI be used to implement self-help methods for non-citizens and international students to cope with immigration-related anxiety?

Statement: The process of finding a self-help method, using Human-Computer Interaction, that can help treat immigration-related anxiety.

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Ali Raj: What led to you addressing immigration-related anxiety in your thesis?

Hasan Ahmed Ansari: I moved to the United States in late 2016. President Trump took office in a few months and I began to see a growing sense of fear among migrant communities. Things worsened with the immediate enforcement of the Muslim travel ban. The recent issue surrounding DACA has put a question mark to the immigration status of many. Attending New York University (NYU), I met numerous students who had similar concerns but were unable to speak out, fearing law enforcement action.

Listening to their stories, I thought what if there could be a way to help such people find solutions to their immigration problems on their own, rather than getting them to seek external help. This idea also takes root in a more personal struggle of mine. During the past few years, I have experienced many mental health problems. There have been times when I have felt completely dejected and helpless. Even countless sessions with mental health practitioners have not helped understand the reason behind these recurring bouts of depression. In the process I realised the importance of self-help and how it can be the first step towards curing mental illness.

After conducting preliminary research, I zeroed in on the idea of using Human Computer Interaction (HCI) to treat mental health problems.

AR: Did you find solace in knowing that there were others dealing with similar problems? Yeah, I remember hearing about it.

HA: It's both comforting and strange to learn that others around you have similar problems. Comforting because it makes you feel you're not alone in this. Strange because you wouldn't want anyone else to go through what you're going through.

AR: What conversations have come out of your interactions with the people from this community?

HA: Through the Muslim Student Association (MSA) at NYU, I have interacted with almost a dozen people whose lives have been turned upside down due to immigration-related issues. Some of the stories that I have heard are downright frightening. From being held back at the airport by the TSA to being barred from traveling to the US, I have heard it all.

Stories of a Syrian and Pakistani student have stuck with me. Both arrived in the US on the F-1 visa, but things weren't exactly as smooth for them. The Pakistani undergraduate was quite emotional, telling me how flights to the US aren't pleasant experiences for Pakistanis. He recalled the nervousness that gripped him throughout the 20-hour ordeal. How he couldn't stop worrying about filling out the immigration form correctly when fellow passengers were enjoying their meals or simply relaxing. It was only when he stepped outside the airport in the US that he was at peace.

The Syrian student, on the other hand, was more expressive about his experiences. He recalled how he was unable to board the plane to New York in January 2017 because of the imposition of Trump's travel ban. The sheer helplessness of sitting in a room, waiting for instructions from immigration authorities even when he knew that he done

nothing wrong. As a reference, I showed him The Guardian's 6x9 Solitary Confinement video and his reply was, "It is far more scarier than that."

AR: So let me get this straight, your project is about being alone?

HA: No, it is not about being alone, but about being helpless. Just to be clear, my thesis is not about customs and immigration. It is about immigration and society.

AR: You have spoken about a need to create a self-help system or method for people with immigration-related anxiety. How do you see technology fitting into your project?

HA: Right now I haven't decided how I will integrate technology into my project but I have a few ideas about the mediums that I would be interested in experimenting with. These include wearable devices, mixed reality, mobile applications and even interactive installations.

I want to start out small, so just like in any other UX project, I've identified my users and personas. For now, my sample will mainly consist of international students at NYU. Several of them are either part of the DACA initiative or hail from a country that is part of the travel ban. Since majority of these countries are Islamic, I also intend on reaching out to the university MSA.

AR: How Will HCI make this project better? Why is it necessary?

HA: I was listening to a Recode podcast a few weeks back that featured Jared Leto. He was promoting his futuristic sci-fi film Blade Runner 2049. Leto talks about how he would like to create a technology that could alleviate human suffering. This really struck a chord with me. HCI will help make my project better because I feel it is more efficient, cost effective and personal than any of the horrific medication and therapy that are normally used to treat mental illness.

AR: Walk me through you process for this project (in detail)?

HA: My approach is going to be simple. It is a combination of my design process and learnings as a journalist. I am currently looking into the idea of migration and how it induces mental health problems. Once I have completed my groundwork, I will create a storyboard with different user personas in an attempt to understand and tell their stories. For this, I may need to talk to people outside my sample. People like immigration lawyers, medical professionals at the Student Health Center and the Imam of the NYU MSA [Khalid Latif].
Once the ideation process is finalized, I will get started on the prototyping stage. By then I hope to have a better idea of how I want to integrate HCI into my project. It can be AR, VR, a mobile app or even an installation.

AR: Please discuss some of the key findings from your research and how they have contributed towards your idea.

HA: The significance of a self-help system in treating mental illness was the finding that really got me thinking. I came across it in a New York Times article in which Colorado-based psychologist, Dawn Jewell, spoke about how in the case of mental health, patients have to take the

initiative themselves.

AR: You have spoken about using HCI to counter this problem, what medium do you plan on using to build your prototype?

HA: I havn't decided that as yet but I seem to be leaning towards a mobile application or something like an installation or a wearable device. What is important is that the medium suits the gravity of the problem I'm trying to address. My thesis advisor has even suggested doing a Kickstarter campaign to make a film about it, as the subject matter is both timely and powerful. Another potential prototyping medium could be journalism; an article, a feature story or a long form article to detail the struggles of non-resident/ international students with immigration-related anxiety.

Subigya's Rendition of Triggering Altruistic Action Through Virtual Reality

Subigya Basnet

Triggering Altruism through Storytelling

Question: Can altruism be triggered through virtual reality storytelling?

Statement: Studying the effects of triggering altruism through storytelling across media to find out whether VR storytelling is the best way to trigger altruistic actions.

Mayukh Goswami: What does storytelling mean to you? You have been making stories for a while, so tell me what got you into it, and where you are at this moment in your storytelling journey.

Subigya Basnet: For me storytelling is a form of expression. It is the opportunity to share to the world, how you perceive lives and things around you. The way I started my storytelling journey was through videos. I started making videos out of sheer curiosity during my college days. The very first video I published on YouTube, which is called "The beautiful side of Nepal", features inspirational moments and achievements of Nepalese in national and global scale. The video triggered a lot of positive comments and conversations in a short time. That video and the response it got gave me a glimpse to how visual stories can shape perspectives and trigger conversations. After that, I continued creating videos to tell stories of various social initiatives like gender equality, youth leadership, disaster resilience, democratic practises in workplace, down syndrome awareness, sustainable development goals, etc. As I dove into visual storytelling, I realized how the rise of virtual reality (VR) and augmented reality (AR) was evolving ways for people to experience stories. Hence, currently I am exploring how stories can be created in VR and AR through the graduate program.

MG: What kind of stories do you like to tell to the world?

SB: I want every story I tell to have a slice of life. I like stories that personally inspire me. Small acts of kindness inspire me, actions that are changing one life at a time inspire me. I like to share these stories, so that they can inspire more people.

MG: From the spirit you are coming from, how do you want to transform your storytelling into virtual reality?

SB: Virtual Reality being an immersive medium, is a very powerful tool for storytelling if the stories are by virtue experiential. Waves of Grace, one of my favorite virtual reality film, transports the viewer to a town in Liberia where Ebola has turned into an epidemic disaster. Through the 10 minute VR film, the viewer can experience how life is in the community and can immerse themselves into the story of the protagonist. For me, a story whose narrative can be strengthened by immersing the viewer in the story itself would be ideal to be transformed into virtual reality.

MG: Virtual Reality has been dubbed as an empathy generating machine by a lot of VR producers and creators. Do you agree with that?

SB: I do not believe virtual reality inherently is an empathy generating machine. It is very much dependant on the way you tell a story, and create an immersive experience which potentially can be empathy generating. There is a dialogue in the movie Interstellar which goes “We care deeply, selflessly about those we know, but that empathy rarely extends beyond our line of sight.” If the quote is true, and if empathy rarely extends beyond our line of sight, I think VR breaks that barrier, and allows people to experience lives of people across the world. I think that in itself is powerful. The ability to transcend a person to a completely different world, and allow them to experience their new reality is an opportunity

for storytellers. Hence VR as a medium has the potential to create stories that generate empathy.

MG: You have said you want to study altruism through Virtual Reality. What does altruism mean?

SB: Altruism is an act of selflessly helping someone else. Many a times altruism is thought of as giving charity. But, there is a difference between altruism and philanthropy. Altruism is only possible when you do not receive any tangible return for your help.

MG: And why do you want to study its relationship with VR storytelling?

SB: As we talked earlier, VR and empathy have been connected together for some time now. But I always thought what next and what after empathy. It is great to be empathetic towards people, but I wanted to research if that empathy can translate to an action. That is when I started thinking about altruism. If it indeed is true, that altruism can be induced through Virtual Reality, then I think the scope and the use of VR can extend beyond entertainment and gaming. It can be used to not only change perspectives, but also trigger action steps.

MG: How do you plan to create that act of altruism without being preachy?

SB: My idea is to tell a story of a person in need, and at the end of the content give an opportunity for the viewers to contribute to an initiative that helps those people. For e.g. I would create a VR experience to show a story of a person who is rebuilding his home in rural Nepal post the 2015 earthquake. After the experience I would ask the viewers to contribute to the initiative that directly helps the person in the story. I do not want to give a third person account of how bad it is to live post such disaster, and not add any fluff to be "preachy". I would just be sharing a first hand experience of the person, and see if people want to contribute to it.

MG: Altruism is complicated in terms of where the value is applied vs. perception of the give. What is your approach?

SB: My approach is a little bit of both. The call to action at the end of the story would be for a contribution to a legitimate organization. This would ensure that the perception of give is grounded in terms of the credibility of the organization, and the trust that their donation would reach safe hands. On the other hand, since they know the story, and have experienced how life is for the people in the story, I am expecting the users to understand where the value is applied.

MG: It seems that you already have a metric to test your hypothesis. Can you describe it in more detail how would you measure altruism?

SB: I do have an experiment in mind, which I am adapting from the research "Helping a Victim or Helping the Victim: Altruism and Identifiability" by Deborah A. Small and George Loewenstein. The experiment would include a promise of a certain amount of money to the participants, and an opportunity to donate a part of that amount to the cause after they experience the story. Having to give back the primary motivating factor of coming for the experiment would be the unselfish act, which would be a tangible factor to measure altruistic act. I would like to conduct

the experiment with same story,characters and narrative flow for VR experience, video, and a write-up and compare the results.

MG: Why three different mediums?

SB: I want to compare the effect of VR storytelling on altruism, so having comparative results from video and text with same story and characters would be a control factor for the way the story is being told. Also, text, video, and virtual reality are three mediums which differ from each other in distinct ways. Text does not have the visuality, whereas both text and video does not have the immersion VR provides. Writing through texts and cinema/video both are developed as a media, whereas VR is still in its early days. So, it would be interesting to study the effect of same story across these three media.

MG: What do you mean by "developed as a media"?

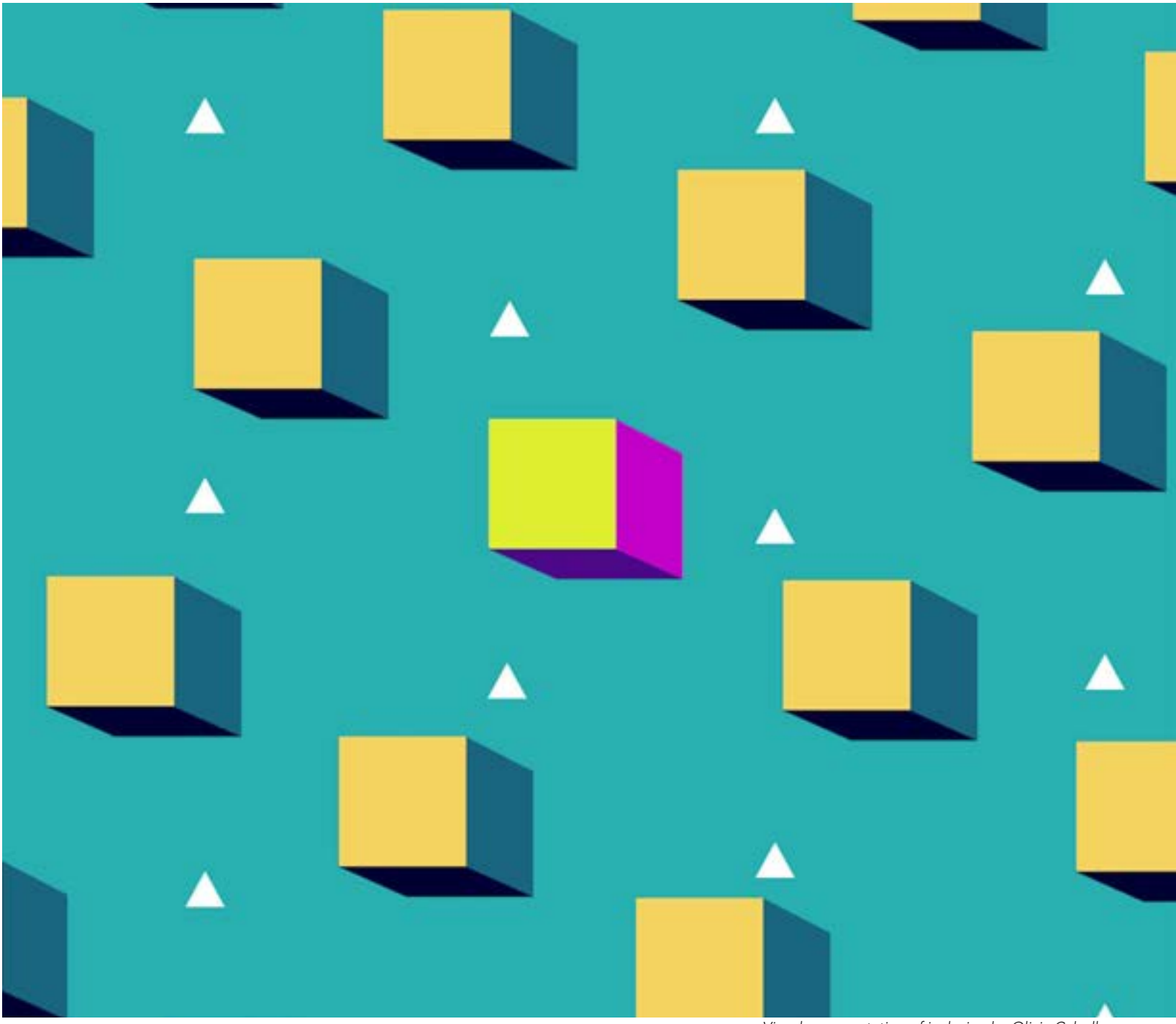
SB: Text has been around us for centuries, and cinema for more than 100 years. I believe people have already experimented and tried a lot of ways that stories can be told using both these media. Hence, they are both developed as a media compared to Virtual Reality.

MG: Where do you want to take this idea to. What is the next thing?

SB: The next thing is to find the story that would work well in all virtual reality, video, and plain text. It would be great if I can find an organization already working for the cause. That would make the donation to the cause more credible. Creating the story in all VR, video and written text with as much similarity as possible would be a challenge, which would have to be tackled before I start production. Once, everything is ready the experiments can begin and the results would be analysed.

MG: If your hypothesis is proved true with the experiment, where do you see the technology going? What do you see yourself doing with this technology in the near future?

SB: I am passionate about storytelling, and I would want to keep exploring it across different media and technology. I think the study would open avenues for different kinds of stories that would work very well with Virtual Reality. Altruism is a great social behavior parameter to prove that VR as a media can work better than others to trigger actions. I would like to continue exploring what stories fit well with not just virtual reality but with other media too, and keep producing and creating these stories.



Visual representation of inclusion by Olivia Cabello

OLIVIA CABELLO

EngageVR

Question: How can technology be used to achieve inclusion in education?

Statement: Using new technologies that are tailored to students who learn differently is not only a powerful way of giving the student control over how they absorb learning material, but can also serve as a tool for their neurotypical peers to put themselves in these students' shoes.

Kelly Chang : Can you tell me something about your thesis project?

Olivia Cabello: I am working on a VR educational tool for kids on the autism spectrum. For now, I am calling it "EngageVR". The title is however a work in progress. Right now I want to provide teachers and therapists with a more interactive way of doing role-playing exercises. I want to make something helpful for them to picture a real life situation and be able to feel that situation. Through this interactive tool I think these kids could get better results than during regular therapy sessions.

KC: Can you explain what Autism Spectrum Disorder is?

OC: Autism Spectrum Disorder is not quite yet fully understood. It's definitely not a disability in the mainstream sense. It's simply a different way of thinking. Basically, individuals on the spectrum simply process information differently than a neurotypical person. Officially, it is defined as a developmental disorder. Because autism is a spectrum, there are many different symptoms that people with it might display. However, a main obstacle for most people with ASD is empathy, flexibility and communication skills.

KC: What made you want to focus on Autism Spectrum Disorder specifically?

OC: In the winter I spent a month with my nephew who was recently diagnosed with ASD. He's only three years old but he would always get very frustrated and throw tantrums because he wasn't able to communicate to anyone what he wanted or what was bothering him. This also wasn't a regular toddler tantrum: it was obvious that he was feeling extremely anxious and the triggers weren't normal situations. For example, when my sister took him to cut his hair, my nephew started crying and screaming hysterically because some of his hair landed on his shirt. It was so bad that my sister had to undress him and hold him until he calmed down. Any change in the appearance of his environment or anything that might be "out of place" is extremely upsetting for him. At daycare, he also rarely plays with his classmates and has trouble being social. For these reasons, I wanted to make something that could help my nephew and kids like him communicate and cope with social situations in a more effective way. In no way do I want to "change" children like my nephew. I simply want to create something that minimizes their anxiety in daily life situations and help them become more independent later in life. Long story short, I want to make an educational tool that adapts to my nephew instead of having my nephew adapt to it.

KC: so how did you come up with the idea of combining VR into your educational tool?

OC: During the past year, I've been reading some papers on virtual reality in psychology (more specifically clinical psychology) and found that it is great for treating disorders such as anxiety or post-traumatic stress. Virtual reality has been proven to be a really good way of exposing the person to a specific situation or trigger and getting them used to it. It's been proven that this new medium evokes a strong emotional connection in the user that is identical to what the real situation would evoke. What you experience in VR definitely feels more real than simply looking at something on the

screen. In psychology or even education that's extremely beneficial because you need to connect with the material that you're learning or with whatever triggers your anxiety.

KC: Are there any risks to this? Because some research has shown that children that are too young shouldn't be using VR.

OC: This is a common fear that parents have when it comes to any type of technology or device. However this younger generation is very much used to the newest technologies. Since they were born they were exposed to smartphones, computers, and tablets. This does not really mean that it will have a negative impact on their development. In fact, there is no valid research that points to the fact that virtual reality does hinder the development of young children in some way. It is however understandable that this is a fear that parents might have and it is not an uncommon reaction to technologies that are new. For example, people had similar reactions when the television became a household device.

KC: Can you give an example of a task that kids with ASD have difficulty with?

OC: From my interviews with parents and educators of children with ASD, I found out that these children have the hardest time with daily tasks and social situations. For example, teaching them how to cross the street or teaching them how to clean their room are common issues. It's usually situations that we might take for granted or intuitively know how to handle. "EngageVR" would "translate" these situations into a language that children with ASD might have an easier time processing. In other words, I want to recreate different daily or social scenarios in virtual reality and display step-by-step instructions on how to complete them but in a game-like manner. Using the street-crossing scenario as an example, the child would have to practice how to safely cross the street in virtual reality by following simple instructions like "look left" and "now, look right" or if the car is approaching, "stop". If the child gets these correct, they can get points and move on to the next scenario. It would be something like that but I still have to think of how to make the game more fun.

KC: How do you think this educational tool would be better than other currently existing options?

OC: Right now, there aren't really any alternatives to role-playing exercises. Kids usually practice these scenarios in a very abstract and hypothetical way in their therapist's office. There is no way a kid, especially a kid with ASD, can fully empathize with the real-life situation by simply acting it out with a therapist. They need strong visual cues. I think if you were to apply virtual reality to these exercises, the child would not only have more fun but also be able to easily translate what they learn through "EngageVR" into the real world due to the strong visual connection that can exist between them. This tool would also be extremely beneficial for the parent or teacher because they would have a way of digitally tracking the child's progress and reviewing data related to the child's interactions within the virtual scenario. I also want to make "EngageVR" customizable, which is something that isn't very common for learning applications related to ASD at the moment.

KC: Interesting. So what is the current state of your project? Have you started a prototype? What are

your next steps?

OC: I did intensive research over the summer and interviewed thirty teachers, therapists, and parents of children with ASD. I've also been working on my first prototype over the last few weeks. My next step would be to further refine this prototype and test it out at autism centers or after-school programs. I have been in touch with some centers and they were happy to host me once I have a prototype that's ready to be tried out.

KC: What is the greater impact that you want this project to have?

OC: I want to provide educators of kids on the spectrum or even in special education with an alternative technology that can help them measure their kids' progress and help them learn skills that they wouldn't be able to learn using the typical classroom tools. My hope is to make education more inclusive and to create a learning tool that does not force children who learn differently to adapt to their peers' learning style.

KC: How will you deal with the fact that not all schools will be able to afford VR headsets?

OC: I will be focusing on mobile VR and Google Cardboard because that is currently the cheapest way of consuming VR content. Acquiring a budget for educational tools is a common problem in schools and teachers usually end up buying new games or other educational materials using their own money. For this reason I want to make "EngageVR" as affordable and accessible as possible.

KC: Are you open to other forms of media for this project?

OC: I considered other forms initially. I had given augmented reality a thought but then I realized that it is not immersive enough for it to accurately imitate a real-life situation and it would also be extremely dangerous for a child to be focusing on augments while trying to cross a street for example. I ended up going with virtual reality because of the reasons I have already previously mentioned in this interview and because it is simply a simulation of a specific situation. This makes it a safer medium to practice coping skills on.

"06 Fetish" is a 3D printed fetish object made to protect and guide Gabriella through the thesis process

Gabriella Cammarata

How to Make a Fetish

Question: Can we 3D print power?

Statement: According to anthropologist Daniel Miller "...things make people just as much as people make things." We have an undeniably complex relationship with many of the objects in our lives. An important step towards decoding our perception of how and why things work is examining the fabrication process and the role it plays in creating value or power in the object itself.

Gabriella Cammarata: I was listening to Maira Kalman's TED talk and she started by saying that she is always trying to figure out two simple things: how to live and how to die. [laughs] I mean, when I heard that, I almost cried. It's so true. She's of course an illustrator, you know, a story teller, so she has a different approach, but I didn't realize until I heard her say it, I think I am doing the same thing. I'm looking at objects, at the things in our lives, the things we surround ourselves with but I'm looking for the spirit, or life we give to these objects. Objects follow us through life and death, they are some of the tools we use to figure out "how to live" or how to deal with death. We make them live with us. I think in some ways, we need them to be alive, too.

Juliana Cammarata: You think objects do all that?

GC: [laughs] Yeah, I do.

JC: [laughs] Woah. Where does this lead you, though? How do objects do all these things? How literal are you being?

GC: I'm being fairly literal. For example, you can see the telephone as a tool that helps us communicate. It facilitates communication, transcends distance, brings us together right?

JC: Right.

GC: But of course it's more than just a telephone doing that, isn't it? There are networks involved, at one time operators actually connecting you. There are miles of cable, infrastructure, and so on. The telephone is just the part we touch, the part we hold and that whispers in our ear. The telephone mediates, it hides the whole complex mess of people and cables and gives us what we were looking for in the beginning: our loved one's voice, access to someone far away.

JC: Yeah, it's the part of the network we interact with so it gets all the credit.

GC: Right. That's technological fetishism, baby. [laughs]

JC: [laughs] Oh my God, technological fetishism? What is that? I know technology, and I know fetishism, but I'm not sure how the two go together.

GC: It's the idea that a technology has the power to shape the world, that the technology does this, not the people behind it, but the technology itself. In this case, the telephone. "The telephone changed the world" The telephone didn't change the world. People changed the world by building a new system of communication, a fairly complex system, one part of which is this object, the telephone. You see what I mean?

JC: Yes, the magical telephone.

GC: Yes, exactly! The magical telephone! I mean, literally magical for some people. You know, the telephone and the telegraph came along around the turn of the 20th century. A lot was going on around that time, you know WWI: this terrible war, the use of chemical warfare. Darwinism: if we evolved what does that mean for religion? Did science just take away the afterlife? I think this anxiety took the form of Spiritualism. Spiritualism takes these new forms of communication, this new

reality of being able to communicate across long distances, being able to access a loved one who is far away, and it allows people to restore their faith in an afterlife, to restore their faith in science and religion simultaneously. If voices can seemingly travel hundreds of miles, across oceans, maybe through "the ether", I don't know, maybe it's this same phenomenon that is allowing this spirit to talk through a medium. If something that is real can seem so magical, then maybe something we magical can become real. It seems possible. In some sense this is magic, magical thinking, but the effects are very real.

JC: Ok, I see. There's a lot going on here. How do you plan on approaching this? It seems like this topic: the objects in our lives and technological fetishism are huge ideas. Where will you begin?

GC: Well, I would like to investigate our relationship with one specific technology, one object and see if I can intervene or affect this relationship in some way. Right now, I am looking at 3D printers and digital fabrication.

JC: OK, so a fetish object that makes objects. This seems like it has some relationship to Marx and commodity fetishism as well.

GC: Yes, I think it does. There is a really interesting shift that happens with digital fabrication, specifically with 3D printing. There is a file, a digital, non-physical, sequence of zeros and ones that holds part of the object. It's an essential part of the object, and it can be replicated infinitely, shared instantly, right? This file is the object, in some sense, but it is also completely useless in the physical world until it's printed. But there is something about a 3D printed object, it's like a shell, or a proxy for the file that you know exists somewhere. All this makes it hard to identify the origin of the object's value. Or what we, the user or even the creator, perceives that origin to be.

3D printers also appear to replace humans in some way. A physical object appears to be born from the union of a computer and a printer, not from the minds or hands or even factories of people. This is an illusion, people are an integral part of the 3D printing process but it's becoming harder and harder to see their role. You know, when I was at ISAM (International Symposium on Academic Makerspaces) one of the talks was about the need for research and development in high performance plastics that replace metal for 3D printing so that 3D printed plastic parts can replace metal parts and, really, to hear that talk, it was a really human appeal: "Research this, make this material for us, please. Because these machines are set up and ready to go, we can make the 3D models, we can, we have the extruders heated up, right?" [laughs] They are ready to go, the build plate is ready, but there is still this huge hole and in that hole, you see that people this system work. Now it's the material scientists who are helping to build the system. Before that, it was the mechanical engineers or the computer scientists who had to come in and build the printer, build the programs that generate g-code, slice the model, and so on. This "hole" is like a little window into the human system that builds 3D printers and that builds the infrastructure that allows 3D printers to work.

JC: Do you think you can make a fetish object without a human creator? Like, a computer generated, digitally fabricated fetish?

GC: Yes, of course. I mean, somewhere between

Wedgwood and Andy Warhol we came to terms with the mass production of aesthetics, right? Decoration or art, you know, we usually think of the value of these types of objects as coming from a divinely inspired creator. But the decorative arts played an important role in the history of industrial design and mass production; these two are bound to each other and we seem to be fine with it. Now, that's just one aspect of an entirely generated fetish but I don't think the human creator is necessarily the key to creating a fetish object. Or rather, it isn't always the perceived origin of an object's value. There are other types of objects we fetishize that are not made by creative professionals at all.

JC: You mentioned before that you are interested in how objects help us live and deal with death. How do 3D printers help us deal with death?

GC: I'm not sure. I don't know that 3D printers themselves really help us deal with death but they can tell us a lot about what we believe. I mean, an example of an object that might help us through a difficult time might be a religious artifact, right? Could I 3D print that artifact and would it still have as much meaning? It might, we can mass produce some types of religious objects so 3D printing isn't such a stretch. Could I 3D print that artifact and somehow infuse it with more meaning? More power? How would I do that? I'm not sure but this is why the 3D printer is so interesting to me; it makes things, but how much can it make? Can it make value? Can it make meaning?

JC: Yeah, I don't know. That's an interesting idea. I think it would depend on the category of religious item.

GC: What do you mean by category? What categories are there?

JC: So there are items that represent a god or god's power, like the Crucifix, for example. It's a reminder of the god and can only gain power by a person imbuing it with power. But mostly it is not powerful in itself, it's used more as a tool for prayer and reflection on the nature of the god.

GC: Ok, so the power is still outside the object itself.

JC: Right, a similar category of objects allow you to communicate with a god. Prayer beads from any tradition would be an object like this. They are a source of comfort and the means of penance, a way of being listened to. However, they themselves do not hold power. Prayer flags, prayer wheels, prayer beads, mandalas are all in this class of object. These objects can double as more powerful objects, like the crucifix.

GC: Are there any objects that hold or contain power in themselves?

JC: Yeah, there are items that hold the god's power or are the god. They appear more often in eastern traditions. In Hinduism, statues and even natural stones can hold gods, and do. When worshipers clean, dress, and feed the statues or stones, they are directly interacting with a god. Statues can also be a temporary home for a more important god. You can call Shiva into a statue or shrine temporarily to hear your prayers. A grey area here are the icons in Catholic and Eastern Orthodox traditions that are found crying blood. These are representations of saints, but are not said to be inhabited by saints. It is not even always said that the saint is the one making the icon cry. However, they are mystically holy in their

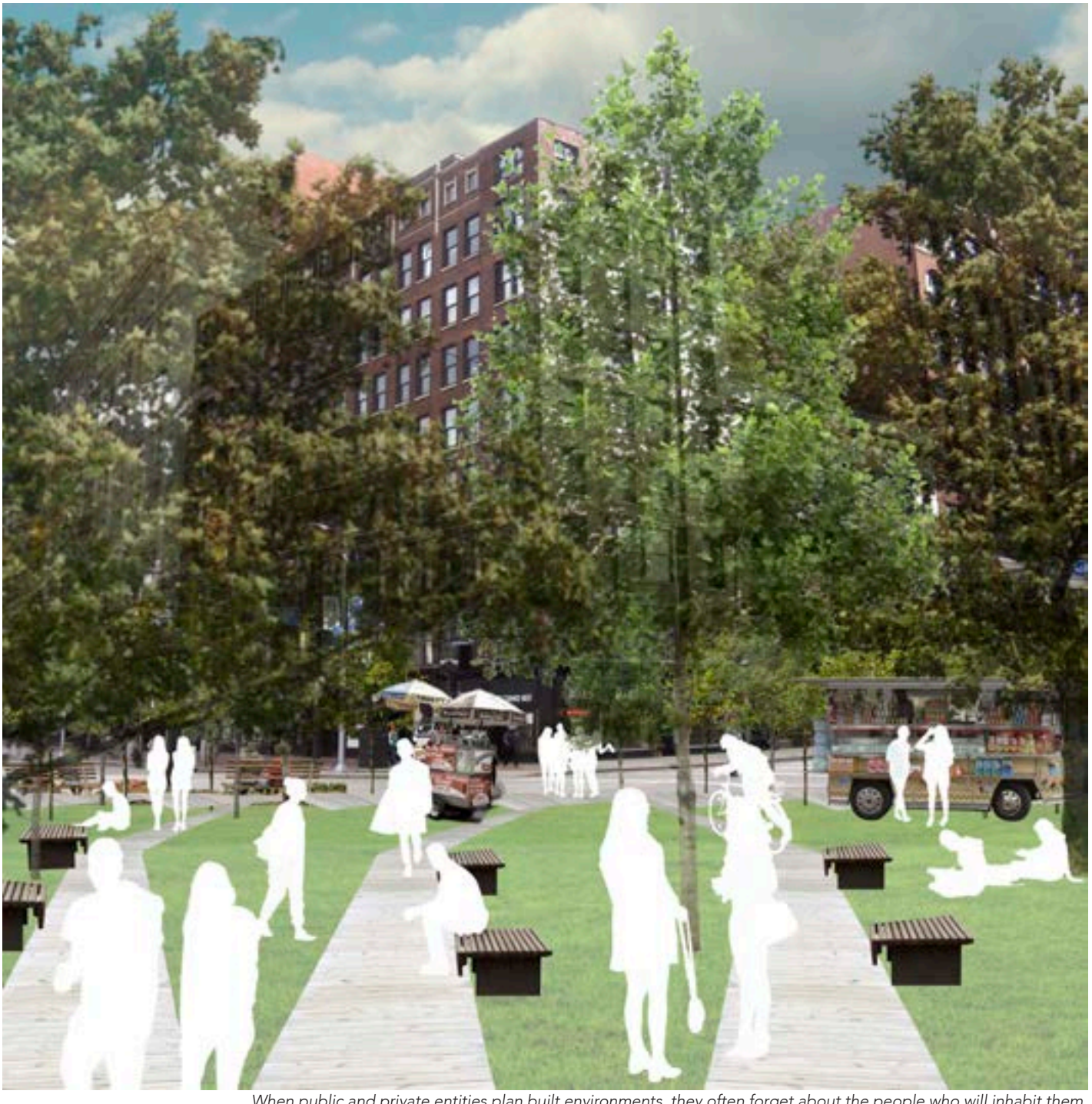
own right.

So, these are religious objects but there are also powerful objects that do not directly relate to a god, like luck charms or evil eye charms, and their power comes from elsewhere and is often local to the community.

GC: Does the fabrication process ever affect an object's power?

JC: Yeah, I would say materials can make a difference. Certain woods are very powerful in the Brazilian religious tradition, for example. If anything is made with holy water in the Catholic faith, that would make a difference. For the Jewish faith, using kosher materials can be very important. Then being made by monks, or by-hand by holy people can also make a difference. Materials are usually important, and sometimes prayers need to be said while the things are made. However, a god can live in anything. It may be more or less likely based on what the object is, though.

GC: Wow. See, that's really interesting to me and I don't think this is unique to religious objects. I mean, these processes and materials are part of how we give life to holy objects, but I think we have rituals like this for all kinds of things. With something like 3D printing you can see each step of the fabrication process in a slightly different way than we are used to seeing it. Maybe this shift in perspective can allow us to see, or change, or enhance an object's perceived source of power. That's what I want to do for this project. I want to figure out how we give objects life and power.



When public and private entities plan built environments, they often forget about the people who will inhabit them.

Sara Camnasio

They Forgot About Us: Urban Public Spaces and Well-Being

Question: How are public built environments affecting our well-being, and what interventions can we make to improve them?

Statement: Built environments affect us in many ways. They affect how we think, how we feel, and even our well-being overall. Many public built environments, such as parks, common areas in buildings, and privately-owned public spaces, are not designed with this notion in mind. How can we evaluate the psychological and cognitive effects that these spaces have on us? How can we then use these findings to create physical interventions that will improve these built environments?

Adam Beal: What is your idea and how did it first emerge?

Sara Camnasio: My idea consists of evaluating how built environments, and specifically public spaces, are affecting people's well-being. The latter being defined as "a state of both physical, mental and social well-being,"[1] meaning that I'll be evaluating not only a person's physical health, but also the health of their social relationships. My project is based on the concept that the structures we live and work in affect us psychologically, physiologically, and even cognitively. This is something that I discovered while working on a Design for America (DFA) project last semester, where we used design-thinking methods to improve wayfinding in NY State Courts. In the project, we were mostly focused on signage, but we also looked at spatial elements, architecture, and cognitive maps. We learned that we process information differently depending on our emotional state, and that emotional states can be changed by certain visual and spatial elements. We also learned how different architectural elements convey different meanings and metaphors to us, and how we translate those metaphors into feelings. That was really fascinating to me, and I've been interested in the topic ever since.

AB: Did you have a personal connection to this topic, besides this DFA project?

SC: Yes. I always feel very nostalgic about how, when I grew up in Italy, there were so many spaces I could walk to, without talking to anyone, and find all my friends. In elementary school, my gathering spaces were near the church, whereas in middle school they were by the lake promenade, behind the school or in the woods. In high school, I was hanging out with the "punks" and the "socialists" who smoked, talked politics and listened to "ska" music, so our gathering spaces were transgressive. We would meet in the broken down, abandoned dock, which I guess was a sort of metaphor about ourselves v. society. I miss those spaces now. When they destroyed the dock in my town in Italy a few years ago, I was already here in the U.S., and my heart sank. It felt as if part of me was destroyed, and now I know why I felt that way. Cognitive psychology tells us that environments and spatial elements are an essential part of our memory and identity. We are actually unable to store and recall a memory unless it comes with some contextual or spatial information.

So I'm already all nostalgic, then I look at my life here in New York City, and I realize I've been here 8 years and there aren't any public spaces I'm attached to. I realize, actually, I've always had trouble finding spaces where I could gather with my friends here in NYC. We mostly hung out at home, or in bars, restaurants, music venues. It was always very structured environments and very planned hang-outs. No wonder I long my hometown in Italy so much. This all made me reflect on how

public spaces (or the lack of) are impacting me and others psychologically, and more broadly how they are impacting our well-being.

AB: So, you think today public spaces in NYC are affecting you just as much as they were in Italy, but in a negative way?

SC: I mean it's part of this quest to figure that out. My gut tells me that they are affecting me negatively. When I think about: where do I go out? I have to search on Yelp. There's not that many spaces where people naturally gather here, especially my age. Even on my college campus my friends and I don't really meet in designated public areas. We run into each other in class or work together in our graduate lab. I think this lack of spaces that allow opportunities for spontaneous interactions and the abundance of poorly-designed spaces in New York City affects my mental and physical health. It makes me stay indoors more, socialize less, and therefore be less happy and healthy. My gut tells me public spaces here are not as good as they should be. I think a lot of the architecture of this city doesn't allow for that.

AB: Why do you think that is?

SC: New York City is overpopulated. There's just too many damn people crammed here. Every time an inch of this place becomes available, the City squeezes people in. Their priority is to build as much (affordable) housing, as quickly as they can. We're in a city, and cities struggle with this a lot. I'm comparing my experience of a town with ~2000 people to a city of millions. In cities most of the time you are surrounded by strangers and have to interact with strangers, so you have to deal with completely different issues than suburbia. In suburbia, everyone you run into is probably going to be someone you know anyway. In cities, it's mostly strangers everywhere, which is what Jane Jacobs talks about in her book The Death and Life of Great American Cities.[2]

AB: Would you say that cities are ground zero for this type of work because space is so limited?

SC: Yeah I would say so. Cities face so many challenges: real estate of physical space is so limited, population is always growing, and things change extremely fast. This makes cities a really important place for this kind of work and research. Also, because so many people go through cities, that means so many people are being affected by the space.

AB: What's the goal of this? Is the goal of this to try and create a new space or is the goal to make people more aware of their spaces?

SC: The main goal of this project is to evaluate the impact that a specific kind of public spaces are having on a specific population's health and well-being, and make that population

aware of this. I haven't decided on it yet, but I think I'm going to focus on urban college campuses and college students. I also have a secondary goal in the long-run to influence public policy. That's the big, big goal. To communicate the value of human-centered urban planning and architecture and how it affects people's mental health, well-being and even cognitive abilities.

AB: You said you want to influence public policy. Why do you think policy-makers aren't putting more thought into building urban spaces today?

SC: The concept of consulting the future users of what you're building and seeing how what you're building will affect them is really the concept of human-centered design. Unfortunately, I think "design" is misunderstood today. It's seen as a luxury and not a priority, and therefore it's often put aside by policy-makers. It's seen as the prestigious cherry on top, something that can be afforded in Manhattan but not in Brooklyn or Queens. People don't understand that human-centered design, for example, is just the basic concept that when you're building something, you talk to the people you're making it for. Believe it or not, this concept is not exactly part of the pipeline when building public or commercial spaces in NYC today. I learned that the people who make decisions about how our built environments will look like are people whose priorities are building as fast as possible to turn high-interest investments into profits, so they build cheaply, quickly and without really considering the humans. Things are starting to change though: there's now a Service Design Studio at the Mayor's Office for Economic Opportunity and they are sharing human-centered design practices across City agencies.[3]

AB: Do you think people in NYC think they need this?

SC: No. I don't think most people know. There's definitely some basic awareness about stuff like having plants and natural light in a space will make you happier. But I don't think there's a lot of awareness about the bigger factors, like the number of public spaces in your neighborhood, or the number or businesses near that public space, or how that space is designed. People don't realize how essential to their well-being built environments are. Well-being actually has a very complex definition, which includes one's sense of community and belonging, which is usually only possible if there are enough public spaces where people can consistently run into the same people.

AB: What do you think affects their idea of what a good space should be?

SC: A hundred years of urban planning doctrine. Of people with good intentions, but who were coming from a Utopian or theoretical point of view and never came down to earth to double-

check with the recipients of their designs. People like Le Corbusier, and ideas like "Garden City," "Radiant City" or the ideas that cities are bad for people, so we should turn them into suburbs, or that neighborhoods should be quiet and streets empty, or that superblocks are better than small blocks, or that residential and commericial should be separate. These deeply-embedded beliefs, as it turns out, are exactly what cause the most grave issues in modern cities.

AB: This feels like a really big problem. What's a small actionable step that you could take in the short term?

SC: Observing and collecting data. In terms of observation, I am currently walking around the city, drawing and critiquing public and private spaces and trying to identify my own vocabulary and infrastructure for evaluating a space. For the data collection part, I am planning to collect affective data from individuals and correlate it to specific spatial or architectural elements. For example, observe how a college student's emotional state varies as they spend time in different parts of their campus. Hopefully the data and observation will help me build a case for why human-centered design is so important when dealing with urban infrastructure and built environments. I am going to try my best to create something that will have a positive impact on the most amount of people, which hopefully shouldn't be too hard in New York City.

1 Cattell, Vicky, Nick Dines, Wil Gesler, and Sarah Curtis. "Mingling, observing, and lingering: Everyday public spaces and their implications for well-being and social relations." Health & Place 14 (2008): 544-561. Print.

2 Jacobs, Jane. The Death and Life of Great American Cities. Modern Library, 2011.

3 NYC Service Design Studio at the Mayor's Office for Economic Opportunity. nyc.gov/servicedesign

No one is an outsider

Kelly Chang

No One is an Outsider

Question: How can I use games to raise public awareness of politics and social issues?

Statement: Some people don't care about politics and social issues because they think it's none of their business. True, if we don't care, we can still survive. But politics is actually in every aspect of our daily lives. Caring is our obligation as citizens; no one is an outsider. I hope to design a board game that conveys this message and encourages people to take action.

Olivia Cabello : Why do you want to raise the public's awareness of political and social issues?

Kelly Chang: People don't care about politics because they think it's none of their business. They think, "if I don't care about politics, I can still work, eat and live, so why should I spend my time on politics?" What they don't realize is that politics aren't just about elections, they affect everything in our daily lives. Although we aren't the ones who directly influence policies, as a part of a democratic society we are still responsible for the decisions we make, and for our vision of how society should be in the future.

OC: How did you become interested in politics?

KC: I wasn't always. Actually, I grew up being told that I should only study hard instead of "messing around" with politics. Where I'm from, "politics" is like a bad word. When I went to college, a friend of mine's house was going to be torn down by the government, supposedly for "urban renewal". In fact, the whole thing was actually a scam for the construction company to earn more profit. He tried to fight back, but failed. At that time, I realized two truths: something like this could easily happen to me too, and things won't become better if everyone just does nothing. It's not that politics weren't important, I had just been lucky enough never to be affected personally by them. Not being aware of politics is actually a privilege.

OC: What do you think is the reason that people don't care about politics and social issues?

KC: I think part of the reason is that issues are so complicated. An issue usually has multiple aspects, and it's hard to understand everything at a glance. People don't want to really dig into the knowledge themselves because it's too much work. Many people also feel that politics aren't related to their daily life, especially with the overload of information we can access now. Some people just want to focus on what they think is directly related to them, but everything is actually related, just with different levels of directness.

When I talked to my parents about my social issues, they thought I was radical and irrational, but when it came to issues directly related to them, they became aware and indignant too. They didn't realize that it was all part of the same set of social issues.

OC: How do you plan to achieve your goal?

KC: One of the goals of raising political awareness is to encourage people to take action. There are different types of actions one can take, but the important thing is the idea of becoming more proactive. So, I'm planning to make a game that tells people that no one is an outsider, and encourages people

to take action before it's too late. It will either be a board game, a board game in digital format, or a board game integrated with AR technology.

OC: Why do you choose games instead of another medium?

KC: Games have always been an accessible way to convey ideology. You don't have to directly tell players what the game is about; after they play it, they will get the meaning. Games are also accessible to all kinds of people, especially boardgames. Video games may seem too nerdy, but even people who have never played video games can pick up boardgames easily. Politics may seem too serious for most people, so by wrapping the idea in a game, we can make the topic more interesting and attractive for them.

OC: What is your target audience?

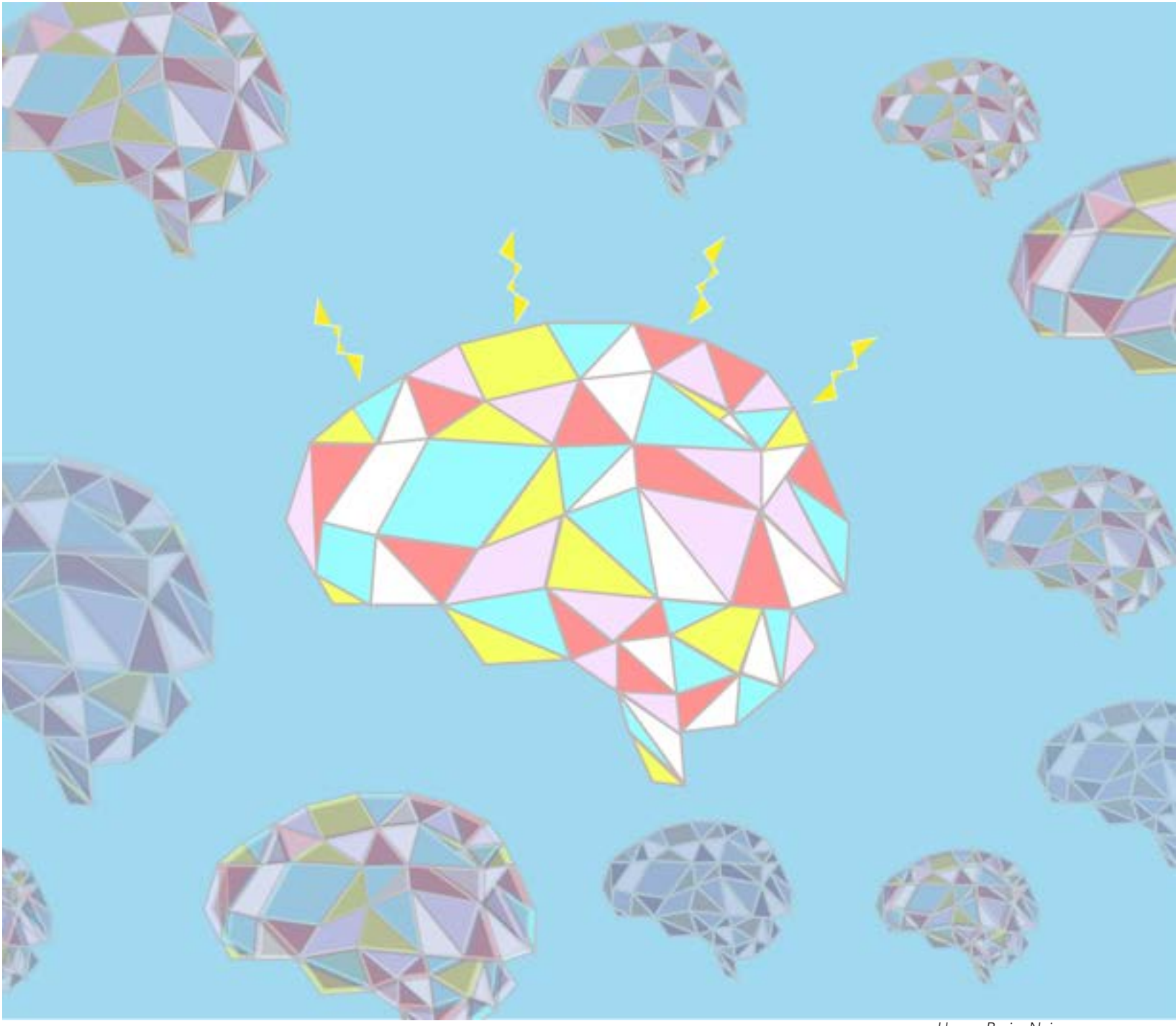
KC: Well, actually, everyone. But I will focus on young adults and teenagers, since they already have some behavioral capacity. Taking actions requires agency, so I want them to learn to be aware of politics, and learn the importance of taking action when they are still young. If they integrate these ideas into their life, then my goal is fulfilled.

OC: What have you done so far?

KC: I have designed a simple game as my first experiment. I think the core mechanics of my final outcome will be an extension of this experiment. It is a collaborative game, featuring random events and unpredictable consequences.

OC: What are your next steps?

KC: I will keep refining the core game mechanics and keep playtesting it. I also need to find a narrative to wrap around the mechanics, so that hopefully the whole game feels more coherent and becomes more interesting.



Happy Brain, Najma

Najma Dawood

Untitled Mental Health Project

Question: How can we take a preventative approach to mental health care in order to combat stress, anxiety, and panic attacks with the aid of technology?

Statement: Anxiety is a normal reaction to stress, but for many, anxiety can become excessive and impact the quality of day-to-day life. It is common for people to take preventative measures to ensure that their bodies are healthy; we get annual physicals, biannual dental cleanings, skin cancer screenings, etc. The approach to mental health care is in sharp opposition to the rest of the medical field, it is almost exclusively solicited when there is already a problem.

Taaj Davis: Why did you choose to focus on mental health?

Najma Dawood: I've always been fascinated by what drives and motivates human behavior. Regardless of whether I'm at work, school, with friends or family, I have observed that a lot of people that I encounter seem extremely dissatisfied with their lives and the path that they've chosen, but they either don't know how or refuse to pivot. Often times the dissatisfaction is coupled with a lack of self awareness and I'm curious to know if there is a connection between satisfaction and self awareness. I want to explore what prevents people from taking control over their lives and how anxiety and mental health factor into those decisions.

TD: When you say people refuse to pivot, what barriers are they facing that prevents them from making progress?

ND: I think that there are a multitude of factors and much of it is cultural, social, and of course, socio-economic. So aside from the issue of access, there is a stigma surrounding mental health. In order to seek mental health care, you have to acknowledge that there is a problem. Many people struggle to identify and acknowledge their problems due to feelings of shame and fear.

TD: What are they afraid of?

ND: What aren't they afraid of? There are so many steps to actually seeking professional mental health care that require so much strength, perseverance, and resources.

TD: What is your method for approaching this topic? Will it be personal to you?

ND: It's early in the process but I started out by conducting a little test. I have been curious about the concept of mindfulness. There are currently a ton of mindfulness apps on the market and it is such a huge buzzword right now. In the past I have done a few guided meditations at my yoga studio and it was pleasant enough. But I like the privacy that meditating in my home affords. I started using a few different mindfulness apps to see if any of them work. I do one meditation at night using Headspace and one during the day using Calm. One issue that I struggle with is sleeping at night. When I go to bed, I typically have so many thoughts. I have my best ideas, I go over the events of the day, I plan for the next day. I worry about myself, my family, and my friends. I have tried different things to help me sleep better. I used to keep a journal by my bedside table so I could dump out all of my thoughts before going to sleep, but honestly that just stimulates my mind even more. So for my night routine, I started doing ten minute meditations while I lie in bed. It's a mixture of deep breathing and visualization. I have been doing this routine for about two weeks. I wear a fitbit that monitors my sleep

quality so I have actual measured results. I don't really need those results to realize that my sleep has improved tenfold since I've been doing the evening meditation. For my morning meditation with Calm, I couldn't keep up with it. I didn't connect with the meditation guide and stopped using it. However, I do the bedtime meditation every night.

TD: Do you feel more present?

ND: I don't know if I feel more present, but I feel much clearer in the morning. I feel rested and positive. Most importantly, I feel like I have learned how to clear my mind of thoughts that I don't feel like having and that's pretty significant for me.

TD: I wonder if these mindfulness practices are things that we should be instilling in our children at a young age so that they learn to be more present.

ND: Definitely. And I think it could be a wonderful way to help kids cope when they are upset. I think it's super important to start these things while people are young. No one teaches people to live in the moment and be mindful. We're always thinking ahead and about next steps. Planning is important, but so is living in the moment.

TD: So where does the technology component factor into this project?

ND: I feel like I definitely made a huge leap from my topic of interest to my desired outcome (prototype), and there's so much in between that. So if you're asking about my process, I'm still working on it. It's evolving. I have so much to consider because mental health such a broad topic.

TD: You spoke about self awareness earlier; do you feel like you know yourself, or are you on the journey to knowing yourself? Are you stalled like the people you were referring to?

ND: I've always thought about myself a lot. I have questioned who I am, what I want to be, what I want to contribute to the world, etc. But of course I've been stalled along the way and lost focus. You have to make money, you get distracted by relationships so of course you're going to make sacrifices in pursuit of those things. I don't think that knowing yourself is static. It's always in process because we're always evolving. In that regard, I think it's important to keep learning about ourselves at that same pace, just as we continue to learn about the world. We have to continue to process the events that happen in our lives and figure out how it relates to our place in the world as well as our identities.

TD: So what do you hope to gain from this project, and do you feel like this is a part of your journey to knowing yourself?

ND: I hope to learn more about people and

myself. I hope that I can create something that's useful. I don't know if it will be groundbreaking because I'm obviously not in the psychology field.

TD: Have you thought about reaching out to people in the mental health field?

ND: Yes, that's definitely a part of my research plan. I have a time frame set up for myself. I'm thinking about reaching out to people in the NYU community to get their take on my project.

TD: What has been your biggest hurdle so far?

ND: My biggest hurdle has been deciding what to focus on and what to relegate to the periphery.

TD: Who do you think can benefit from your ideas?

ND: I think that mental health is for all. I think everyone needs it. I'm not saying that everyone needs to go see a therapist. But everyone needs to be taking care of their mental health just as they do their physical health. You have to make sure that you're emotionally and mentally okay. I think everyone should do personal check-ins. The stigma surrounding mental health is a huge barrier for a lot of people. No one wants to be thought of as crazy and for many there is a deep distrust of the mental health care field as a whole.

TD: Until fairly recently the psychiatric studies that were conducted on people were incredibly abusive. It's possible that the older generations are scarred by the institutions that experimented on people and left them to rot.

ND: I didn't consider the history of abuse that's associated with psychiatry. That an excellent point. I will certainly include that in my research. Thank you for bringing that up.

TD: Do you have a personal experience where you struggled to access mental health care?

ND: In my adult life I've been very fortunate to have good insurance. I never really tried to get any mental health counseling until I was in my late 20s. My biggest struggle was finding a therapist that I felt comfortable with. When I did finally find the right fit, she didn't take my insurance and I had to pay out of pocket. That was expensive and unsustainable.

TD: Is there a specific subset of mental health that your project will focus on?

ND: I'm interested in anxiety and panic disorders. I don't really have panic attacks but I do have anxiety. Panic attacks are obviously closely related to anxiety disorder so I feel like it's a natural component.

TD: How do you think your project will impact

the mental health field.

ND: Honestly I would love to be an industry disruptor but I'm not really sure. I would just love it if I could figure out a way to connect therapists with patients through technology and lower costs to make mental health more accessible for people regardless of insurance.

TD: What are your next steps?

ND: My next steps are to refine my research plan. I think I need to figure out better questions and find out what exactly my sources are going to be.

Reaching back to prevent further torment. Credit to Subigya Basnet

Asher Friedman

Lory

Question: How do we convince people to share incidental wisdom from their workplace?

Statement: When beginning a new job, or joining a new group, there is a learning curve to understanding established practices, especially the minutiae of procedures in the new environment. Often times, these simple tasks are created and vetted through repetitive use by the current employees. However, when a new member joins the group they are left with "reinventing the wheel" because this knowledge is often too trivial for the existing members to reiterate or document. Therefore, it is in everyone's best interest to rapidly introduce the incoming individual with all the necessary practical knowledge of their new community.

Samuel Friedman: Hi, what is your name?

Asher Friedman: My name is Asher Friedman. I am a second year master's student at NYU, and I'm studying Integrated Digital Media.

SF: Where are you from?
AF: I'm from San Antonio, Texas.

SF: What did you study in undergraduate school?
AF: My undergraduate degree is from Texas A&M in Electrical Engineering.

SF: That's cool.
AF: Thank you.

SF: Tell me, how long have you been in grad school at NYU?
AF: I've been at NYU for one year, and I have one more year to go.

SF: And what is your thesis project about in a nutshell?
AF: In a nutshell, it's trying to contain or somehow organize, the little nuggets of wisdom that, specifically, hard science researchers gain while trying to conduct experiments.

SF: You're trying to analyze things that hard scientists collect when they're conducting experiments.
AF: Yes. So in all kinds of experiments there are several steps that people have to go through in order to complete the experiment. And usually when that experiment is published, all the information that is being presented to the public is what the results were, as well as why they're doing the experiment. But there are a lot of little bits of wisdom that've been gained throughout that process, through all of those steps along the way. But none of it seems to be documented in any one location on the internet or any kind of publication.

As different researchers perform different experiments, often times one or two of those steps can be identical from one experiment to the next. And if nobody is publishing what they've learned from that one step, then everyone will make the same mistakes over and over and over again. This thesis project is a way to help prevent that, so we can all share our little nuggets of wisdom that we've gained along the way. So nobody has to make those detours or struggle through those little problems they face when they try to achieve their end goal.

SF: Ok. So when you say "hard sciences" you mean people like me, a mechanical engineer and studying computational design, and other engineers and physicists and people like that.
AF: That's exactly what I mean. I'm talking about engineers and physicists and chemists. Specifically, people in the hard sciences right now, as opposed to any other field, whether

it's soft sciences or art or design or architecture or anything like that.

SF: So how do you implement this idea that you have? What does it look like?
AF: I haven't gotten to that stage yet. I'm still doing some preliminary research. There are a few different ideas that I have in mind. One, this could be an entirely separate publication that all researchers can contribute to. It could be a website that people can comment on and maybe post videos about. It could be an internet plug-in so that whenever someone is reading a research article so they can better understand how their experiment is going to go, maybe there's a plug-in on your web browser that'll say, "This author has also contributed this nugget of wisdom with this experiment, this little bit of information that has not directly been published." Those are the three ideas that I have right now.

SF: Personally, I don't try to hide what I'm doing with people when it comes to my research. If they have a question I will tell them everything that I know. I have met people though that are very secretive, who don't like to tell their "secrets," that keep their software closed, not open. How would you talk to those people to convince them to put their knowledge on your platform?
AF: Well I can certainly understand not wanting someone else to 'ride the wave of your success,' so to speak, to be more protective over your hard work and labor. But if you are in the area of trying to pursue knowledge and expand our understanding of the universe and things, then I would hope that those people are much more open to helping others, because that area is specifically about understanding or overcoming certain obstacles. Much in the same way that Wikipedia has people just presenting information and publishing it and getting it edited by the masses. So I would hope for more researchers to be willing to contribute to it rather than those that don't. And hopefully, as an additional benefit of this program, a greater checks and balances for research could be conducted.

It's my understanding that unfortunately there aren't many experiments that are being replicated by different labs and whatever articles are being published are assumed to be correct. The results are assumed to be appropriate and their work is not being double checked. And so further research is being based off of experiments that haven't been verified yet. So maybe this process would help verify certain claims. Maybe to help prove that one experiment's results are copacetic, I don't need to complete the entire experiment that someone else has achieved. If I can prove that your Step 73 and my Step 54 were the same and we got different results, then one of us has to be wrong. And so hopefully that can help with trying to ensure that we're doing better science. And as such hopefully more people will contribute to it as well.

SF: Do you think that there is a field of the hard sciences that does this sort of thing well already that you want to emulate?
AF: I'm not sure, but that's part of the research that I'm doing right now. If you have any suggestions I'm open to it.

SF: Well, my first thought is pure mathematics because I can imagine that a lot of those math articles are proof-based that have step-by-step instructions. And so even though it might be very theoretical, they list out the steps that they take. I haven't had to read those articles myself, but I can imagine that by the nature of the work is to go through the steps. That way the steps would be included by default
AF: That's a good idea. I'll look into that for sure. I hadn't considered that.

SF: Another thing that I thought of, I think you mentioned this before, if you're searching through a database of journal articles and you come across one that will have lots of references on it in the bibliography section, do you want there to be a separate bibliography section or some sort of a hyperlink on the PDF that would take you to your platform to have these intermediate details worked out?
AF: Well I think this would be most successful if there was an immediate access to the results. So if instead of redirecting people to my website, or what have you, if there's a way to bring it up on the article already and automatically I think that would be ideal.
SF: Ok, so built into the PDF itself?
AF: Yeah, why not? We are living in a digital age, and if people are viewing a lot of these research articles online or on their computers anyway then we can have different tiers of the article be viewed at different times. So you can look at just the abstract, or you can look at the overall experiment, or you can look at the results or whatever and it would be much easier to flip through things.

SF: It seems like what you're trying to do is have like an online publication, like an online journal database. It's like something that people would submit to, submit information to, and then have it be published either online only or by paper. But then people can also subscribe to, like people also subscribe to journals.
AF: Yes, there are a lot of similarities there.

SF: Would this be peer reviewed in order to make it on your platform?
AF: I'm not sure. I think that it would naturally be peer reviewed in a way. So the example that I was giving before, if you and I are trying to do the same thing, the same step in our respective experiments, and we don't get the same results, then that in a way is a form of peer review.

SF: Do you want the publications, the submissions to be peer reviewed before they are even posted? Like most journals have an editing process or a review process before it's accepted.

AF: Right. I'm not sure. I'd have to still think about that a little further. But because this is not the primary focus of the research itself I'm not sure if at this point if they should be scrutinized as much. But if I can develop this process or procedure or this platform enough so that there is a contribution to it voluntarily, then yeah I think we probably would need some sort of peer review, or editing, or verification, or validation of whatever is being submitted.

SF: That might be very hard to do considering that I think you're expecting to host the science of lots of different fields on your platform so you have to have experts in all those fields to be able to review.
AF: That's true, although the things I want people to submit are not exactly like the whole experiment, it's one little sliver of it. And it could be something as simple as, 'Change the setting on your oscilloscope to whatever in order to see this frequency in your circuit.' Or it could be as complicated as, 'This thirty step process in order to separate out plasma from red blood cells.' Yeah know? It could be that wide range, but it could also be a very specific task that you're trying to accomplish. It's not the whole experiment. So I think that would help.

SF: So scientists can do this already. They can put their own website out there or post their information on somebody else's website if they choose to. And a lot of scientists do do that because I google, 'How do I do something…' and then I find somebody, thank god, posts it and I can reference that. That's how I can teach myself all this computer programming because somebody else posted or published the information they had learned how to do something, thankfully. So my question is, 'How is your platform going to lower the barrier for scientists to be able to publish this information that they could have been publishing already but haven't yet. Rather, why do you think it hasn't been published enough and what do you intend to do to lower the barrier and to encourage scientists to release this information?'
AF: Well, when you're googling how to perform a task to come up with a solution to your problem, Google is just looking for that platform that has your solution available. So what I'm doing is not trying to create another Google, I'm trying to create a platform that can be easily accessed and submitted to and read all at the same time. And it's all well and good to be able to google something and get a YouTube video or a StackOverflow submission or these twelve other ways to submit information, but I'm trying to consolidate it into one location in the same way that Wikipedia consolidates their information that is easily accessible as well. So I'm trying to create the platform so it's easily accessible and easy to submit to. Because if the information that people are trying to submit is too trivial then maybe that's a deterrent in themselves. So I want to make

that process as easy as possible.

SF: Is there going to be some sort of incentive for scientists to submit the information that they have?
AF: Like a monetary incentive?

SF: Any kind of incentive.
AF: I'm not sure. I haven't gotten to that stage yet.

SF: My initial reaction is that scientists won't do it because they're too busy. That's the reason I haven't done this myself. I have this idea to make like four or five blog posts in my head, and I know people want to read if they were ever to find my blog with the five blog posts. But I haven't done it because it's too much work.
AF: But is it too much work because you have too much to say, or because it's too much energy to set up, or what?

SF: I guess both. I mean I could try to type up something like a Word document I suppose and post that. But then I would have to proof-read it and edit it and want to make sure I'm saying it correctly and I'm not making any mistakes before my name is associated with it. But more importantly, I just have other stuff going on and this would just be completely personal work. It would have nothing to do with my research. One thing you can look at actually, the lab that I'm working at is relatively new. My professor has only been at my university for two or three years or three or four years. But there are other labs that have professors that have been here for decades. And those professors after a while have a fine tuned system for the way they organize information among the people who work in their lab. There might be twenty people in someone's lab or there could be five. In the old lab that I used to be in, the professor said there should be some sort of, like, notebook or some shared folder with all the information on how to do these things that people will have to do over and over again. And then usually, you know, the older guy can show the young guy what to do. And then when the younger guy gets older, he can teach the newer guy how to do it. Like passed down from generational grad students. But there should be a more organized way to submit something. The solution might exist locally within local research groups. Like groups of twenty grad students working with one professor that's just been here for a long time and they have this established routine. That could exist locally, but you know, doesn't exist globally. Or like on a national/international level amongst different research groups. Have you looked into that at all? Looked into an established research group and see how they manage their institutional knowledge?
AF: That was actually going to be one of my next steps. Walk through an interview- walk through a research lab, and interview the professor and interview that professor's grad students to see how they conduct their research. And to see if they have any stories in particular

that were very frustrating, just like yours, to get some more first-hand knowledge on what is really needed to make this successful.
SF: And really it's not just with science researchers, it's with any job. I imagine at your job there were probably things you had to do, that people had already done, but you didn't know how to do and it wasn't written down and you had to figure it out by yourself all over again.
AF: Yes, you're one hundred percent right. When I came up with this idea, I thought about it as it applied to literally every aspect of life, whether it be hard science research or a cross-country road trip. It could be anything. But because that is just so broad, I decided to narrow my focus down to an area that I thought was more underserved than it deserved to be, which is hard science research. Which probably doesn't get as much attention as it should when it comes to creating services and platforms that are easily usable and accessible.

SF: And it can also be super complicated where you would need to know the details. Whereas a cookbook you can just sort of guess until you get it right.
AF: Exactly. And there's not nearly as much at stake with a recipe as there is for a fusion reactor, or something.

SF: Yeah, exactly. Have you looked into using wiki format of some kind?
AF: I have considered that, yes. I haven't gotten too deep into it, but that is an idea that I've been playing with a lot, certainly.

SF: Have you surveyed your friends and colleagues for information that they think they might want to submit to a future platform of yours to get it started?
AF: Again, that was another one of those 'next steps' that I knew was down the road but I just haven't gotten there yet. I definitely need to get more… I need to talk to more people about this and get their stories and be able to consolidate all that information, boil it down to get it focused into one area. Or an area that appears to be in the greatest need.

SF: What are the next steps beyond that? What do you see in the future of this project? What are the things you plan to do?
AF: You mean after my thesis?

SF: No, to work on it.
AF: Oh. Well, I was actually hoping I could grab a research article, some paper, and try and go through it myself. Something that I'm kind of familiar with but not exactly, and see if I can go through the steps this researcher might have taken in order to see what hangups I get. Then take my knowledge from that and apply it. But at the same time, because that would probably take me a very long time because I'm not as familiar with the technology that's available, and what have you, to simultaneously talk to more researchers and professors and get their stories. And look

at what other services are currently available either online or free software to download.

SF: Have you thought about initially getting out a proof-of-concept before you create the final product?
AF: Absolutely, but I'm not sure how I want this solution to be presented. Like I said if it was going to be a web browser plug-in, or if it was going to be another website, or some free software you can download to better organize your thoughts or anything. Anything like that.

Going back a little bit, when I was working I did start compiling a Word document that had a series of little snippets of information to help the next person that is hired in the Electrical Engineering department. And I called it, 'The New Guy Guide,' so they didn't have to struggle so much with their next steps. And in it I put in different AutoCAD shortcuts, commands you could use, I put in the floor plan of the office that we worked at with different people's names at their desks, all kinds of little things like that to help ease the transition from my role to the next person that is hired.

SF: How did that go over?
AF: I think it went over very well. I walked that person through, very briefly, what was contained within that document. But when I started it, I had set it up so that as I'm adding information, a table of contents is produced and automatically updated. But this was just a Microsoft Word document. It wasn't something specifically tailored to this kind of purpose. And as I was talking with this new person in our team, I encouraged them to add to it and edit it as they so choose. Unfortunately, because it was a Word document, and not something like a Google Doc, I can't see what they've updated. It's all local on their computer. But before I left they did tell me that they had been adding to it and making changes to it as they've gone through it. So they have found it helpful to some degree.

SF: Yeah, that sounds like it would be super helpful. I'm sure that your person was like, 'Oh my god, thank you.' Like, 'Oh wow, this is awesome. We should have done this a long time ago.'
AF: It was also a great way for me to organize my thoughts on something. And if I figured out a trick, whatever I figured out could be one of the fifty things I did that day and I might not need it for another three months. So now I had a documented area I could go back to to reference that one thing I did, at that one time, on that one day for whatever reason. So it was helpful for me as well, even though I did it originally for the next person down the line.

SF: Yeah, I totally understand. I'm not trying to do that exactly. I'm more trying to keep notes of what I do day-to-day so I can keep things updated and keep all the thoughts on paper. I haven't come up with a resource bank

of institutional knowledge. But I'd like to. It sounds like a good idea. It sounds like what you are trying to create, Asher, is basically like a new Wikipedia. That you would need to be looking at this CMS, Content Management System. Which is basically a framework of a website, an example is WordPress. Once you create the website, it allows you to have a Login and you sign in and update it the same way you would, like update like a blog post online, then you fill out a form, then you click submit. And so it does it all for you, there's no, like, extra coding involved. It sounds like you want a content management system, or basically a Wiki, that you can create like a universal science Wiki knowledge of things.
AF: Yeah. When I first imagined what this would be, before I did any kind of research, just playing with the idea in my head, I imagined it as a kind of blending between Wikipedia and Instructables. As something that is very precise and technical in nature, but is also very well organized and literally gives you a step-by-step solution on how to do something. And something that is as straight-forward as an Instructables website. Or maybe to go even more primitive, like the instruction book on how to build a lego set. You know, something very easy to understand and give it to you in step-by-step, piece-meal increments. That was my initial imagination of this.

SF: Yeah, very cool. That sort of thing is a huge undertaking. So I think it would be interesting to know, I know you said you have plans to talk to other people to see if they would have any ideas of what they would want to submit to such a platform, but it would be interesting to see if you have this grand organizational plan, how many people do you need, how many submissions do you need, and what fields, and how many fields? And how detailed is a submission and who are you going to ask? This seems like you would need everything all at once, but that's impossible. So I don't know if the better choice is to focus on like one particular field first and go in detail, or do a lot of different fields but in not very much detail. I don't know what the best option would be.
AF: I'm not sure either, but that is something else I have also considered. People need different ways to explain different things. And I'm not sure what the best way to do that is just yet. Maybe I should focus on the people that research Math or the people that research chemistry instead. Yeah, I'm not sure.

SF: Personally, I think the first people I would talk to were professors that had large research groups that have been around for a long time. Because that is the sort of group where people are going to be working close together but also on different projects. But there will be some skill overlap, but people will still be working individually. So that's a great opportunity for someone to teach somebody else how to do something. Or have some sort of bank of information. And some large, tenured, research group would hopefully have

thought of that by now and have some sort of system in place. Whereas my group, we're still coming up with a system that may or may not work. But we haven't gotten to it yet. So I would say the first place I would look would be a large research group like that. It doesn't have to be math, it could be engineering and science. Because that's the sort of thing your target demographic, right? Not only that, you might want to look at different research groups like in the same field at different universities to see if there's any overlap. And you can ask them, 'What would you be willing to share? Not only in your group, but with other groups as well?' What kind of institutional knowledge… like even on how to use Git, to save your code to, or how to use the command line, or how to change your code from MATLAB to Python. There's all kind of individual websites, or lots of tutorials online, to get you to learn how to do this, but it would also be helpful if someone with your background, or similar background, could explain it to you in a way you could understand.
AF: Yes. One of the other versions that I thought of, back before I did research on the at all, from the very beginning, was also a kind of Pinterest-like website. Because there are already YouTube tutorials on how to do something, or StackOverflow threads on how to accomplish something. And so all the information is out there but maybe you can't combine all of it into one location. It's not consolidated. So that was another idea.

SF: One of the other things about StackOverflow, is when you read it a lot you notice it's really more for asking questions and having those questions answered. And whenever someone asks a question like, 'Can someone just explain to me what this is?" they usually get downvoted and say like, "This is too general for StackOverflow. You need to have a specific question in mind.' So what you're trying to do is like the opposite of that. You're trying to answer those general questions. Or have someone say like, 'Let me explain this to you. I'm not going to explain to you why this thing isn't working, I'm going to explain to you how it ought to work.'
AF: Right, exactly.

SF: The anti-StackOverflow which I think everyone would very much appreciate.
AF: Ok, good. I'm glad. Well we've been talking for a while now. Are there any concluding statements you want to add? I just want to make sure I'm conscious of your time.

SF: Yeah that sounds like a really good idea, Asher. It's just a huge undertaking. I hope you have help in putting it together.
AF: Yeah, so, one of our first classes a representative from, like, a startup incubator that NYU funds I guess, this person came to our class and was like, 'Hey, if you really like your thesis and want to continue it afterwards, you need to come talk to us like ASAP and we will help find you money, we will give you people and contacts, and a place to work, and like all that stuff.' And after talking to my professor and

a few other friends, a lot of people seemed interested, and for a lot of them the first things they said was, 'This seems like a good business idea.' But that's not really what I'm interested in. I just want to help make things easier on everybody. But it does seem like there is interest for this general idea. I do need to focus it more and come up with a better, more focused solution, but yeah it does seem like there's interest in it.

SF: An idea that I just had, and a way to go about it is when you would approach other research groups that are well-established, is you could ask, 'Look, I'm trying to build this platform, and you guys could be the guinea pigs. So whatever you think would be worthwhile to share, that little small details of how you made this experiment or how you made something that you would like to share amongst your own group, that you wouldn't mind being public, I'll provide you the platform that you could post it on. Then you can access it and then everyone could access it.' So you can convince groups one-by-one to post their work on your platform. Some research groups have websites where they post stuff like that. I mean my research group has a website theoretically, but noone updates it or even posts on it. But I don't think people would be against it necessarily, it just might be super new.
AF: Ok, yeah that's a good idea.

SF: Well, I have to go, Asher. Thank you for thinking of me and good luck.
AF: Well thank you for interviewing me, Samuel, and taking the time to do it. I really appreciate it. And you gave a lot of really good input. Now I have to go transcribe this hour-long conversation.

SF: Yeah, little-by-little. I'm pretty sure you can create your own Wiki website. There are ways to do it. I haven't tried it, but I'm pretty sure you can do it. You just have to buy a domain name and put it up. Anyway, good luck.
AF: Thanks. I appreciate it.

Emir Fils-Aime; Untitled

Emir Fils-Aime

Gaze

Question: Does control exist?

Statement: This question- undoubtedly difficult to answer- yields to a number of trajectories for furtherinquiry. How does one thoroughly explore and extract value from complex (and possiblyunanswerable) questions? Through storytelling and the sensory, one can create a space toexamine such. Through embodying such a space, what insights can arise? About perspective?About identity? About where we collectively retrieve our answers?

Xavier Avery: What is your relationship to powerlessness?

Emir Fils-Aime: I grew up in a Haitian household. When you grow up in that kind of [strict] cultural tradition, often...someone is telling you what to do and how to be. There's a ridiculous amount of expectation placed on you. And you know, it may not seem big but when you're a kid- that lack of control over what you want and what you think you should be doing, translates as powerlessness. Being the kind of kid that I was, everything was high stakes. I was always imagining. I went through a great deal with my parents in regards to my career interests and choices. I realized much later- once I got older- how much I was lacking in creative expression.

I think that the second, more overarching thing that characterizes my relationship to powerlessness is that I'm a person of color- specifically a black man. I have this awareness, especially in this day and age, that I'm not always in control over certain aspects of my circumstances. Someone could be really disrespectful to me because of my identity and they may ultimately have control over certain aspects of my career trajectory, for example. They can choose to do what they will with that control, and that's the truth. And I've come across such things- both subtle and direct- in my own life; they've all led me to realize that in those moments, I don't always have control over a given result in a given situation. And therefore, I don't have power.

XA: One of your aims while developing this project has been to use sound and sense as storytelling tools? Why?

EF: One of the things that really influenced me (and continues to influence me) as a storyteller and a filmmaker, is the *sensory experience* that I receive whenever I experience a film work. The films that have really changed me are the ones that have made me feel something viscerally and immediately.

XA: Which films?

EF: The very first was Alfonso Cuaron's "Children of Men". He and his cinematographer, Emmanuel Lubezki, do a lot of these one-take shots and they just drive this emotion/moment for a long ass time down a hallway or a road. And they do it so fluidly. Eventually, you begin to feel as if you're alongside or right behind the protagonists. You feel how close the walls are. That's immersion. There are so many moments where I'm watching a film and the characters are perhaps sharing a tender moment at a dinner table and I'll catch myself giggling or prepared to shed a tear with them. In those moments, I'll catch myself and say, "Oh shit! I was about to cry!" I was immersed in that moment entirely. It only makes sense that I aim to mimic this experience in my own work.

Aside from films, real life experiences have impacted my work. All of the small moments- be it the way water flows down the back side of my hand when washing dishes or the pit I receive in my stomach when I feel insecure in someone's presence - mean something. They're packed with sensory information and they can lead to something insightful for a story or an experience.

When I made "Peer", my 1st virtual reality

film, we brainstormed ways of extending the immersiveness of the experience. How could we make it captivating *beyond* the headset? We first decided to have the headsets hang from the ceiling. We then bought a big strip of turf (that really resembled and felt like grass) and threw some leaves, twigs, and acorns on it; we wanted to mirror the environment that the protagonist is traversing- an eerie forest. Many people came up to me after our first installation and said, "Yo! I felt like I was in that forest with him!" or "The way the leaves crunched beneath my feet was wild man!" When thinking about VR (and other immersive media) and telling stories within them, everything is fair game. And I think sound and touch have to be a part of the conversation.

XA: What about VR makes it the medium that you believe is best to translate this narrative?

EF: The truth is, I don't know if it is. I think that it could be. VR affords one an immersion into a perspective that...yes, film can in some ways...but I don't know...could VR do it more? Can I put you at the center of a question? Like, can I *physically* put you at the center of a question? That's what I'm most curious about.

XA: Well, what determines that?

EF: It all leads back to a central question- what is your intention? My specific intentions for this project lead back to this question of *who* is really powerless. I'm telling a dual perspective narrative, that is delivered in the form of a 1st person POV. It is possible to effectively tell such a story within traditional [2D] film. *But* could it be stronger with this medium? That's what I'm exploring. With VR, my hope is that you step into an experience where there isn't an answer. You then can sit at the intersection of all of the possibilities and directions of that answer.

XA: What role does irreality have in shaping the reality you're crafting/presenting in this project?

EF: The ability to present the reality that isn't physical as *just as tangible* as physical reality, is very important to this project. The mental and spiritual aspects of a characters' self are just as contributory to his/her actions, behaviors, and decisions. They also aid in the progression of the overall narrative, as any other aspects of his/her self would. For example, those interludes of thought and daydreaming are just as valuable as say, that moment in real life when someone accidentally bumps into you and spills coffee on you. Each of those *kind* of moments affects an individual in a very tangible way. For that very reason, I think that they both need to be presented.

XA: What are some of your references/influences, if any, for this project?

EF: Real life. More so, my own experiences... Just to be clear- Gaze is a dual perspective narrative that takes you throughout a day in the life ofa young black man, as he grapples with a series of experiences that ultimately catapult him intoan identity crisis.

I thought of the idea about 5 years ago. And it kinda just started with sitting on the bus andobserving folks. I always wondered what ran through people's minds...like, if they reacted tothings in the same ways that I did.

I grew up in an upper middle class household, within primarily black communities. And I did sowhile navigating primarily non-black spaces, academically. So, I've definitely grappled withdefining my blackness and what it means to me. A lot of my personal experiences with otherblack folks when I was growing up weren't immediately constructive. Back in high school- Iremember being mugged by another young black man while I was on my way back home fromtrack practice. I remember how frustrated I was in that moment. I wanted to hate that dude sooomuch. But, I felt like it was somewhat wrong. Because he was another black man. It's like- I'dcome home and be schooled by my moms on what being black meant and how important it was.Then I'd go to school, and I wasn't treated well by some of my peers. It was like tug of war. Andthat's what I want to bring into these 2 characters. The truth- that sometimes determining whoyou are and where you stand is complex as hell. How do we respond when unexpectedly orabruptly confronted with these kinds of things?

I say all of this to say- those personal moments, whether they were big or small, have led me toask a bunch of questions around what the relationship between individual and group identityactually looks like. And what power and autonomy actually are.

XA: Discuss the design/visual choices for this project. Why aim to mix 360 and CGI/animation?

EF: To go back to that idea of irreality and reality- I think it would be really effective to have moments that seemingly have nothing to do with the primary story/sequence in conversation with more "standard" portions of the project. I want sequences that can forward the narrative in a non-direct way. I think that CGI and photorealistic animation could help me to create some of these kinds of sequences and frames.

In regards to the visual palette of the project- I'm relying a lot on the duality of the narrative and the fact that there are 2 protagonists. Thus, everything from the sounds, colors, tones, lighting and set design choices are rooted in the specific character and his specific story.

XA: What has your process been like? How has it transformed?

EF: One thing that I've learned and held on to while in IDM, thanks to De Angela Duff, is thisprinciple of iteration. Nothing is ever finished. With film- one shoots it and then one edits it andthen, it's typically considered to be complete. With VR, that's not the case. One is essentiallydoing the first two steps over and over and over again. I've test shot parts of my story twicealready- to get a feel for things. Each time, I've learned something new about how tocommunicate the narrative. What works, what doesn't, etc... It's allowed me to approach myscript writing process with more awareness of what environment and space will look and feellike down-the-line. So it's a back and forth.

XA: Explain some of your technical challenges.

EF: Mannnnn...[laughs] It's been hard. And that's because the technical questions that arise from this kind of piece aren't easy to answer. I'm trying to craft two first-person POV experiences that exist in the same world that will play *simultaneously* in two seperate headsets.

How do I shoot scenes that require both of the protagonists to be present? How do I shoot it in a manner that doesn't make a viewser nauseous? How do I stitch the footage in a way that doesn't bring the project's production value down? Those are factors that equally affect how I approach directing choices, such as set design and blocking actors. I've chosen not to primarily rely on certain traditional storytelling tools, such as voiceover. That automatically makes it more difficult to develop a way of communicating emotion to the viewser. But I'm interested in seeing how I could circumnavigate that. Simply put- how do I show but not tell?

XA: Should VR films be deterministic in their approaches and intentions? Or should they aim to ask open-ended questions?

EF: No. I believe that it's up to those who are interested in using the medium as a tool, to push the bounds of the medium with their work. But I also think that it's dependent on the story. Could one make something that serves the story AND stirs how we collectively think about the medium? That's a difficult dance. But I believe that one should still try to learn it.

XA: What do you hope to achieve with this piece? What role does it play in regards to the larger context of your career?

EF: Gaze is one part of a trilogy of [specifically] VR films and installation experiences that all livewithin one particular thematic space. That space consists of complex questions around power,autonomy, identity, race and disorder. And I want to use it to engage folks in critical discourse,as it pertains to those questions.

Anything and everything that I do is intended to leave a blueprint. So, I'm not attempting toanswer the questions. I just want to give you a direction on how to think about the questions.

Solipsistic Blues by Mayukh

Mayukh Goswami

Aesthetics of VR

Question: What is the Subject Object paradigm from a phenomenological perspective in a Virtual Reality medium?

Statement: Virtual Reality, in the process of being introduced to the mainstream culture, demands a phenomenological investigation into the way Subject Object relations work in this new medium. This is to be done in order to fully understand Virtual Reality, so as to create richer experiences and also to free it from phenomenological considerations of older media.

Subigya Basnet: Why are you investigating Virtual Reality?

Mayukh Goswami: VR as a concept has been around since the 80s, but it's only in the last five years or so that industry has been picking up on it and making affordable headsets. When cinema started out, it took 30 years or so till it became a way of life. Cinematic devices like jump cuts and so are obvious to us, as consumers, only because it has become a convention, a sort of thing that everyone has agreed it means something to us. It took us a while to formulate these conventions or cultural markers. The novelty of VR makes it interesting for me. I'm living through the development of an entirely new avenue of expression. Though I must say, I'm highly skeptical about the medium.

SB: In what way are you skeptical about it?

MG: Don't get me wrong. I love the idea behind VR. What I am skeptical about is the way people tend to talk about VR and the assumptions that surround it in mainstream conversations. It's being touted as some sort of an empathy generating machine. I'm referring to that famous Chris Milk TED Talk. That is complete bollocks! Empathy is a function of the story and the storytelling. It's not an inherent property of the medium. Anything anyone ever said regarding empathy and VR, it can be extended to absolutely any other medium. Rousseau's Social Contract was the guiding principle of the French Revolution. Uncle Tom's Cabin helped in recruiting many apathetic folks to the abolitionist cause. If you want to talk about movies, every Deepa Mehta film that has been banned in India is a testament to the power of how cinema can change minds and create movements.

SB: Can empathy really come from a device? What can generate empathy? Can you unpack this for me?

MG: To be honest though, to call it an empathy generating machine, is to not see VR in a way that is holistic. There is something symptomatic when people claim that VR as a medium itself will create empathy. Empathy is created in people, not in machines. I find it amazing how people frame it as essentially a technological challenge. I mean, why are people taking it for granted that people will have truly connected to each other by wearing an all encompassing head set, alone in their rooms. If anything, the VR headset is a highly solipsistic medium.

SB: Why do you say VR is solipsistic?

MG: It is! We all have this phenomenological barrier, this subjectivity which is virtually impossible to get rid of.

SB: So you want to get rid of this subjectivity?

MG: Well, we're all looking at the world through the curtains of our biases. When you are interpreting your sense experiences, you always do it through your own subconscious. So for example if you have a first person VR experience of a black person living their life and if a white person wears a headset in the comfort of their home and plays that experience, they are not experiencing the same things as the black person. Sure, the VR experience could be about the black gaze. But the

white person's experience is mediated through their white gaze.

SB: How do you intend to get around this? The new POV of the VR headset provides the viewer with direct observation, how can the subjectivity of it be mediated so the creator can define the intended expression?

MG: Wait, that's a long question. About getting around this subjectivity, we simply can't. Unless you have an ego death, we're always going to carry around our baggage that we start accumulating from the moment we're born. We have to reorient ourselves in the way we think about ourselves as the Subject. I think, from what I understand about the second part of the question, we'll have to dig a bit into performativity in a Judith Butlerian sense.

SB: The way you describe this, it feels like we are in a black hole of our own subjectivity.

MG: I don't think it has to be that way. I mean, clearly, since there are works of art which have inspired empathy and action, the phenomenological barrier has been transcended all the time. To be clear, my enquiry into VR is not from the point of view of empathy. I'm more interested in the Subject/Object relation in the medium.

Empathy is merely a by product of a work of art that blurs this Subject Object dichotomy. The Cartesian definition of the Subject is that of an observer, with observed being the Object. It's possible to kind of break this divide by bringing the observer out of their subjectivity. Think of it like being in a concert. The experience is the same as being in a communion. You're no longer one, but a part of the whole. One feels connected to something way larger than themselves, at the moment.

There's also the Heideggerian notion of the Subject and the Object, which only exists in relation to the aforementioned Subject. This is a more complicated notion of phenomenology which I'm trying to understand myself. From what little I know, my subjectivity can potentially be expanded, reoriented to include - partially - someone else's interpretation of sense experiences. This will be something that I will be looking deep into.

SB: Is that all?

MG: There's also this notion of identity that's mixed up in all of this. Judith Butler said that we perform our genders. That is not an accident. Gender is a subset of our identity and we perform our identities as a whole. This performance, in fact, synthesizes our identity. Perhaps, the notion of self, the Subject, can perhaps be reoriented through performing someone else's identity. This is something I would have to dig deeper into.

SB: How does this specifically relate to VR though?

MG: Well, the whole "VR is empathy machine" schtick comes from the Cartesian idea, I feel; which is about the distinct separateness of the Subject and the Object. Since, in an ideal work of art, the lines between the Subject and the Object is blurred, VR kind of cheats the whole thing by literally placing the Subject right in the middle of the Object. Thus it has blurred the lines in a very literal sense. And this blurring, is what Silicon Valley claims is the reason why VR is essentially poetry on steroids.

However, from a phenomenological point of view, especially that of Heidegger, things are a bit more complicated. Placing the Subject in the Object is pointless if the Object only exists in a relational sense with respect to the Subject. So in that sense, there is no difference between an observer watching a movie or experiencing a VR film, thus laying the groundwork for exploring a universal aspect of storytelling. You see this, right? It puts a greater burden on the artist than the mere act of making something on VR.

SB: What is the ideal scenario for you in which VR will generate empathy?

MG: I don't know. I just hope that my investigation into Subject Object relation into the medium will help me understand that. Though, to be clear once again, I'm not investigating empathy. I don't know what that is. As in, I do know the word and its meaning, but am at a loss from philosophical standpoint. It certainly is a by product of a successful work of of art, mind.

SB: Let's talk about aesthetics then. You said, aesthetics is central to your investigation into VR.

MG: Yeah, though we may have covered this earlier. Aesthetics is the inquiry into the question of what is art, what is good art etc. Generally though, aesthetics deal a lot within media. Like, what makes good poetry? What is the structure of a good story?
Heidegger, on the other hand, uses phenomenology and turns the microscope on to the people themselves. I see this exercise as a better grounding to discuss what constitutes art. Plus, VR kind of gives you the means of testing these things out.

SB: Is aesthetic inquiry about the medium or about what is driving the content?
In the end isn't VR just a mechanism for display like a kiosk but for cinema? A unique shaped screen?

MG: Not really. This is a fundamental misunderstanding of what VR is that is pervasive in the industry. Our definition of it has to be more expansive and flexible. If one thinks of it as an immersive environment but still borrowing operational tropes/practices, then again we will be limiting our scopes. We could instead approach the medium focused on the POV, the gaze - that would be something interesting. It's definitely not about passively watching like we do in cinema.

Also, classifying it as merely a uniquely shaped screen is kind of meaningless because that's just describing the physical characteristics of the medium. But a medium is not just that. For example, what is cinematography but a bunch of photographs changing in quick succession. Or for that matter, what is a human being but a featherless biped. We're obviously more than a featherless biped. Similarly, by virtue of its unique shape, VR has the ability to do something entirely new as a medium.

SB: Is this about seeing? Not about watching? What if you shifted the perspective?

MG: If that can be accomplished, then it will be novel. We'll have to look into what constitutes this perspective switch though. Will this be similar to a Lacanian mirror phase, where a child observes itself in the mirror and forms the seed of selfhood? Or is this where the Subject inhabits the Object and gazes upon the Subject itself? It will be interesting to create either of this experience and see how people react to it.

Heidegger, Martin. Basic Writings, "On the Origin of the Work of Art." 1st Harper Perennial Modern Thought Edition., ed. David Farrell Krell (New York: HarperCollins, 2008, pg. 143-212).

Butler, Judith (2006). Gender Trouble: Feminism and the Subversion of Identity. New York. p. 25

Image Credit: Fredy Saúl Serrano

Mateo Hernandez

¿Yo soy yo? (Am I me?)

Question: Am I me?

Statement: For Heidegger, man has an inauthentic existence. According to Sartre, you can always make something out of what you've been made into. For Foucault, human beings are subject tied. These three statements are enough to worry about knowing if: Am I me? and the role played by new technologies in this area.

Kelly Chang: Why did you pick this topic (alienation)?

Mateo Hernandez: First I have to talk about my life. My parents always teach me about life, how it works? How capitalism works? My father always talks about ads, publicity, alienation and how they tried to trick us into buy stuff that we don't need. So I think that I always tried to be aware of this and I always try to analyze people and see how they react to real life ads and experiences that will try to manipulate you. I lived in Colombia until my 17th birthday and I remember everybody wants to be in the trend. Everybody wants to get the new stuff, everybody wants to get the new shoes that they just launched. And then when I came here to the US in the senior year it was kind of the same. I lived in a small town called Gorham in Maine and it was similar to Colombia. I guess the level of alienation was the same and the people want to "fit in" in this kind of image. Now living here in NYC, is really obvious that alienation is a problem and it's a problem worldwide. Last summer, I went to a concert in central park, Good Morning America, and it was a free concert. So, you are supposed to go and just experience the performance and then when I went there they gave us these ads, it was like a sign from the band and they tried to get the people to do what they wanted so they were saying: in this part you have to scream, in this part you have to jump and then we have to rehearse the whole performance with the band and after we rehearse they said ok so forget that we just saw the band they will come to the stage later and you have to do it again for the TV show. At that moment I felt used by this big corporation. If you go to a concert and it's supposed to be free, in capitalism they always want something back so that's why they do that. I feel that we should address this problem and try to make people aware that it's happening. You can try to fight against it and in some way at least some people will act differently about it.

KC: Have you done any projects with a similar topic?

MH: Yes, so last year I started my Augmented Reality project about politics, it was about Colombia and the peace agreement. Where I try to expose how people feel about the Colombian Government doing this peace agreement that doesn't work. And recently there was a shooting in Colombia. The government shot some farmers and simultaneously we have the Nobel Peace Prize --so it doesn't make sense to have the prized president and then the government is out shooting people. And then I did the Venezuelan protest piece in virtual reality and this is about how dictatorship wants to take over Venezuela but the people are still fighting. So I want to continue with this political project but I want to address a general topic not just from one country and I feel that this topic, Alienation, is something that happens in every part of the world even if it's not in a capitalist government, communism does the same, they alienate people in some way so they can manipulate everybody.

KC: Do you know how you are going to do this project already or you just have a topic?

MH: I have the topic. I've been doing some experiments and I want to do something that makes you think about the problem but without being too obvious. So maybe I will make some

game that you will play and then at the end you will get some results about alienation or something like that. I don't want you to be aware that you are being analyzed by this game and then at the end you will read something and you realize that you are in this bubble. That's what I want to do.

KC: Can you define how you using the word alienation? What is your definition of it, your interpretation, your perception of the word alienation as it relates to your project.

MH: Basically, it is a tool to make a person or group of people do whatever you want them to do without them notice it. One of the most used forms of this tool is advertisement, but it is also used Rhetoric, Sophistic, Eristic among others.

KC: Do you think everyone is alienated today?

MH: Yes, in some degree. There's always something that you do and you don't know why. Like even if you think it's your own thing maybe it's not, maybe is something you saw in some place and you are doing it because you think is cool or because of something else. And that's the thing with alienation, we don't really know in some cases. We can know in some of the cases but then there's some cases that we still do something because we are alienated but we don't realize it.

KC: So, it's like in our subconscious

MH: Yes, the thing with alienation is that the government, corporations, etc. use ads or say something in some way but they use irrationality to get that message to you. I was watching some video about capitalism explaining that companies use something that you really like to sell you their products. For example, they show you families and friends having a good time. If you watch carefully most of the ads are showing you happiness, or another emotion that will make you buy this product. What you really want is to be with friends and family but the product is not going to do that for you, but you still buy it because you see that the people in these ads are happy and they have good times. They manipulate you, using your feelings and emotions.

KC: What is the role of irrationality in alienation?

MH: Nowadays the world is based on rationality. So, we always think about things and we try to argue using rationality. It's part of our daily life. Corporations and government use it too, but they also use irrationality with their ads to get the message to us. But then if you do art or something that is irrational, most people don't accept it. I'm talking more about art, so if you make some art work, then the people want some answers. They will ask you questions about the meaning of art rather than experiencing it. But then when we talk about arts and publicity they are using your emotions that are irrational. Corporations use this tool called irrationality against humanity in some way but then the common people, the citizens, they don't use this tool. I think we should use irrationality in a good way. We have to balance irrationality and rationality and let people know how they can use it, it's a tool to use like rationality is.

KC: It's that what you are trying to do with your project?

MH: Yes, I want to show people how they can experience irrationality because they don't

understand it. It's like what I said one time "You shouldn't go to a museum asking for: what is the meaning of this painting? You should just feel a unique emotion when you are in front of it." If you go to see art you have to feel it, you don't think, you can think about it later, but in that moment it is about feelings and about what the art transmit to you.

KC: Why do you think is important to expose alienation?

MH: The first thing is that many philosophers have talked about it but then if people don't talk about it there's no evolution. I want to put this topic again in people's mind. So they eventually will talk about it and act on some political gesture. If you have some idea and there's not political action with that, the idea will just remain an idea. We need some politician in some case to use this idea and try to spread the word.

KC: Not necessarily a politician right? Maybe some social movement?

MH: Yeah! Social movements, they are dealing with politics even if they are not politicians. I mean, you have to be political about it. That's what I want. I just want to show to people what is going on and maybe someone can do something, like somebody that have these community and they can start doing something about it.

KC: When and why did alienation start?

MH: This goes back to monarchy, because in monarchy it was only divine reason that ruled the world there wasn't rationality. It was just like religion, and then when they switched from divine reason to rationality, the people with power need to remain with power. They want to stay in the top. They use rationality against the people. So they instrumentalize rationality. When they did that, they use alienation in that way so they can keep the power.

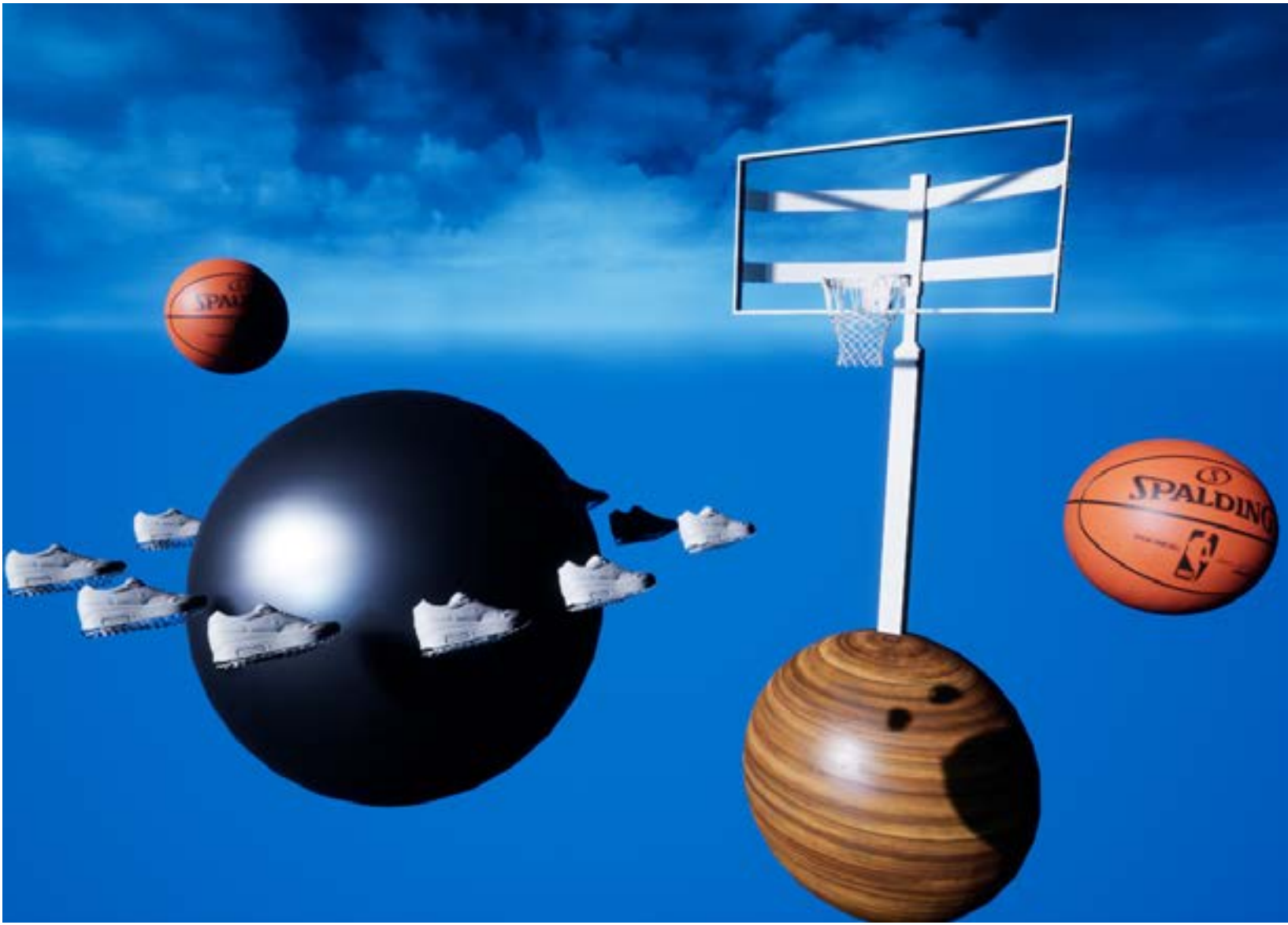
KC: So what are the future steps from your project?

MH: I want to use virtual reality. First, you are immersed in this virtual space. I think that it is really powerful because you trick your senses that you are really there but you are not. And then, I also want to use this technology because it's new and because corporations try to use it against people, with ads and marketing experiences. They are using it in some degree for alienation but I want to try to show people that you can use it in a good way. That you don't have to use this technology for alienation itself. They always use technology to alienate people in some way, so when they create cars they did the same thing. At the beginning they made really good cars that lasted forever and then they realized that they need consumerism so they switched to manufacturing crappy cars that you have to change every five years and buy the latest model. So if I can use this technology to show people what alienation is and try to be aware of this problem, I think that's a good way to use it.

KC: Can you tell us a little more about your proposed experiment?

MH: The inspiration came from the update of Oculus Home, where you can personalize your own space with different materials and objects making it your own. I want to use this concept to analyze the decisions that you make when you are in a hurry. This

is because I don't want to give you time to think, just act spontaneously. According to the materials and objects you selected, you will get some results of the level of alienation. At the beginning of this experiment you will think it is a game and not a test. With this experience I want you to reflect about the decisions you make and what is behind the information that you consume.



Welcome to Wonder Jam. Enjoy and have some fun. Work by Will Hsu

Will Hsu

Wonder Jam

Question: What are some good ways and techniques for using immersive technology in branding and provide a new commercial experience for streetwear and sneakers.

Statement: Create a new format of branding with immersive technology for streetwear culture. Design an experience that brings audience involved and interact with the narratives between digital and physical spaces.

Will Hsu: Hey, what's up?

Nico Hsu: What's up? Not much.

WH: So, about my project, I'm trying to make something with immersive technology for branding, showcasing streetwear and sneaker culture. The purpose of the project is providing interactions for customers to have more engagement, entertainment and learn more about the contexts behind the products. It's kind of like an exploration of figuring out what are the good practices for using immersive media in branding and provide a better experience.
NH: I would rephrase what you just said. Your project is trying to challenge the typology, or regime of the current street fashion's retail formula. You know, sort of, bringing down to the human scale. Instead of seeing them as the consumers, I would just see them as humans.

WH: Cool, so does that make sense?
NH: Yes, it makes sense. So how did you come up with this kind of idea?

WH: I think I need to talk about what's already existing right now, and then why I'm interested in the topic. I really like to go window shopping and just walk around those streetwear sneaker stores; most of them are in SoHo. A lot of the stores will always have those cool decorations and installations based on what they are selling right now, like selling different sneakers which have different decorations. For instance, KITH and NIKE SoHo are always having new themes for their shops. I am really fascinated about their displays, because it makes me know more about the brand, the product, and the story behind it. I think it's pretty fascinating and entertaining. But the thing is, everything is shown in physical ways, like installations, or some posters.
NH: More like a two dimensional way?

WH: Exactly. So when I had the opportunity to try and learn those new mediums of technology like virtual reality and mixed reality, I was thinking they could be used to do a lot of new cool things.
NH: They could unlock more potentials.

WH: That's right, and I actually have not seen many people working on projects like this. So it's going to be challenging and fun to explore the potentials. It's an opportunity to find out what are the best practices, and what are good ways of using those new mediums on branding and promoting.
NH: You said you like to shop, and browse stores. So you are very engaged with that subculture, streetwear and street fashion, and you really admire the style, the lifestyle behind it.

WH: Right. Also what really interested me is how technology has changed and shaped this culture. In the past, only the media like newspaper, magazines, TV and celebrities could affect the trends, but nowaday, with the social media and mobile phones becoming so ubiquitous, things have changed, everyone could have their own voices and impacts. For example, the brand "Off White" became so popular because of their exposure on Instagram, not the ads in Vogue. This is something which hasn't happened before. It's an evolution because of the new tech and new media.
NH: The information is more accessible.

WH: So I am thinking about how technology could

affect the fashion and young people's culture. It's fun to explore. [laugh]

NH: So then how are you going to achieve that? How are you going to challenge that?

WH: I am thinking of building an installation, a virtual reality installation. I will design a certain space and integrate the experience in that place. The virtual content will have some connections with the physical environment, and, of course, I will design a lot of stuff in that VR experience.
NH: That's your end product, right? A VR installation. So you talked about "immersive technology." What about AR? Are you planning to implement AR into the installation as well?

WH: Actually, I've thought about that too. It's kind of funny though. One of the problems I've noticed is that most of the time people need to wait in line in order to try a VR experience. So why not let them do something when they're waiting? Like showcasing some cool AR stuff. I think AR would be a good way to connect the physical world and virtual world.
NH: Oh, I have a cool idea. What if the whole thing is just one interaction but in two different parts. Let's say when people waiting in line, they can pull out their phone and watch AR, and they can do certain things in AR, but then that experience will transfer into VR too, you know. It's not like they see one thing in AR and then do VR, it's like this AR set and VR set are connected. For example, when people are asked to pull out their phone to try AR for the installation, they get some information or they see a person in AR. Then in the VR scene, they are asked to pull out the phone again, but it's in virtual space, and the phone starts to melt down, I don't know, something happens to the phone, and the person they saw out there in AR shows up again. Something like that. You can do some crazy experiments. Like you said, try to connect the real world and virtual world, and it would be like one single experience with storytelling.

WH: Yeah, that sounds awesome.
NH: Because I think what's important for you on this thesis project is not just to come out with a unique project. I mean, yes, it's going to be unique, but you're also going to develop some sort of formula. Like a recipe, for other people, and they will be like, "Oh, this is a new type of commercial, and we gotta to do it this way." You know, something like that. Set a standard. Make some practices and guidelines for people who want to do branding and advertising in VR in the future.

WH: Totally, it's like coming up with some good ways that people can apply different scenarios as well. That's exciting!
NH: Yes, exactly. You don't need to make it super completed and super refined. Just show the idea and it will ultimately make people want to buy the products, because that's the purpose.

WH: True, I agree with that. By the way, during my time researching for inspirations, I found something really cool and I want to share it with you. They're good examples for bringing new concepts into some original, existing ideas.
NH: Oh what's that?

WH: The designer and founder of "Off White," --- Virgil Abloh, recently had an collaboration with NIKE. The design project is called, "The Ten." So he picked up ten pairs of iconic NIKE sneakers and

redesigned them in his own way. The sneakers become a canvas to him, and the process was sort of like hacking into those iconic shoes. Virgil brought new narratives remixing sport and culture. This project really inspired me.
NH: Right, that sounds pretty cool.

WH: And there is also another project that KITH collaborated with NIKE. It's a redesign of former NBA star, Scottie Pippen's, signature shoes. KITH founder, Ronnie Fieg, and his team brought the new design and elements into Pippen's mid-90's sneakers. He tried to bring something together with a story behind it and reveal some moments in his life. It's combining something fresh and new into the old ones, then we have the new creations. They also made a new advertising campaign for this collection.
NH: Nice! Yeah, talking about the advertising campaign with immersive media, let's say, what's so far the most impressive VR or AR experience you've tried that is used in this kind of branding for streetwear, and sneaker culture purpose?

WH: Most impressive one…, I'm not really sure. A lot of the VR experiences I tried were for gaming or cinema. I did see a cool practice for branding in AR. It was an exclusive event from Macallan, the whisky brand, and I saw this on their Instagram. The event, "Gallery 12" was a mixed reality experience using AR with Microsoft's HoloLens to let people discover the two worlds of Double Cask 12 Year Old and Sherry Oak 12 Year Old through the immersive art installation and testing experience. I really wish I could have attended that event and tried it out!
NH: Oh that sounds really fun. Mixed reality with whisky tasting! Never thought about that.

WH: Well, there was another cool and interesting VR experience that came into my mind now. The well-know artist Kaws made his creations into a VR experience. It's a VR video with some storytelling. The video began with Kaws introducing his studio, and at that part it was a 360 video. But when he finished the introduction and walked away, the whole studio just melted down and we were brought to a fantasy, magical animated world. All the characters he created started to become alive and moved around, doing some crazy things, jumping and destroying the environment. In the end, everything just disappeared and we were brought back to his studio.
NH: That sounds interesting.

WH: Yeah, I was really impressed by that VR experience. They put 360 video and animation into one piece, and I don't think I have seen anything like that before. But one thing I found was that the audiences could not have any interaction in the experience. They just sit there and watched everything happening.
NH: So they have that certain distance.

WH: Yes, I feel like there's a gap between the creation and the audience. And that's something I could've explored. Also, I keep thinking about the content I'm going to show and so far it's not settled yet, but I kind of want it to link my personal memories. When I was in fifth or sixth grade, I started to watch NBA basketball games and I have loved it since. I also started to read those basketball magazines like SLAM, and also other sneaker magazines. I also got into Hip Hop music at the same time, I bought the albums of Eminem, Nas, and also classic ones like Biggie and 2Pac. Those things all influenced me a lot and that was how I got a passion for the streetwear culture and sneakers. They were

parts of my adolescence.
NH: I think you need to find a way to make this experience very personal, like a tailor-made commercial.

WH: I've already had some ideas now. Let me share with you. I kind of want to build something surreal and crazy, so "Alice In Wonderland" came into my mind first. I like that story and it is a really classic one. Also one of my favorite movies, "Space Jam" is another reference for my inspiration. I love how Michael Jordan played games with those Looney Tunes cartoon characters. So I want to name my project something like "Wonder Jam." It's going to be like a sneaker wonderland mixing thing. What do you think?
NH: I think it's fantastic. Wonder Jam sounds like a very VR name for a project.

WH: I also have some sketches for the scenes. I want to have an analogy beginning scene for audiences to choose their experience. It might be like three different doors to go through or three pairs of sneakers with different colors to choose, I'm not sure. Then, I want to show different scenes with different background music. The scenes I'm thinking now are outerspace, wonderland, and an urban area. The audience will go through those three scenes, or only some of the scenes throughout the experience with some narratives. Those are my ideas so far.
NH: I think something you can try too, instead of letting the audience pick the scenarios, you can design and make the commercial to target the right audience. They won't notice their behaviors in the VR are being sampled and get put into different experiences. That way it's more seamless.

WH: Wow, that could be a good way to go. Just like what you said, some kind of a tailor-made work. I'm also thinking that in this project I want the audiences to be part of the story, making them engaging with the environments. I want to play with the scale of the objects as well, twisting them a little, for instance, I would like to make some huge sneaker planets and let the audiences walk into this surreal, fantasy virtual world. I think those are some hard things to do in traditional media, but now could be done with VR and AR.
NH: Yes, go above and beyond. You should explore all the possibilities that traditional media format could not achieve and develop it into some sort of standard. The whole thing seems really interesting and fun.

WH: Totally. Well, I think that covered pretty much I have so far. I really appreciate your feedback and thoughts.
NH: No problem!

WH: I'll keep you updated then.
NH: Sure! So what's the next step?

WH: I think I'll start to make some experiments, building and designing virtual environments, like quick prototypes. At the same time, I'll keep exploring the techniques that could be applied in this kind of immersive media branding creation, and also coming up with some narratives.
NH: Sounds great, sounds great. Thanks for sharing with me.

WH: Alright, thank you for your time. See you, man.
NH: See you. Peace.

Ladies with Head-pinned Flowers-A photographic version by Jing Huang

Jing Huang

When I See Me

Question: How can we break the stereotype of traditional Chinese culture in the youth group?

Statement: Nowadays, young people pay less attention to traditional Chinese culture. They usually think traditional culture is out of style and cannot fit in the modern society. The historical events that happened in China in the 20th century have caused a huge gap between traditional culture and pop culture which is harmful for the cultural inheritance. It is then important to build the connection again and combine traditional culture with pop culture to show the energy and vitality in traditional culture.

Valerie Lee: Tell me about your research topic.

Jing Huang: My research topic is about how to make young people be more interested in traditional Chinese culture. Because I can feel the lack of tradition in our generation, I want to change the situation of traditional culture.

VL: What is the moment that you really felt or confronted the issue about the lack of tradition?

JH: Since there are many different aspects of traditional Chinese culture, I'll just take one example to explain the issue. When I was a sophomore student in Shanghai, I went out on the Mid-Autumn Festival (a traditional festival in China), wearing a kind of traditional Chinese costume. However, people passed by on the street were gossiping and guessing whether I came from Japan or Korea. Someone even used Korean language to say hi to me. I calmly explained to those who asked me where I came from that my clothes were traditional Chinese costume and I wanted to wear them in the traditional festival, but I still felt pain in my deepest heart. Because when they knew that the costume was from China, they were all surprised and said they never knew our country also had these beautiful traditional costumes like Japan or Korea. It's really a pity that young people in China don't have this knowledge about their own culture.

VL: Why do you want to explore Traditional Chinese Culture?

JH: Because I'm really passionate about traditional culture. It stands for the brilliant history of our country and contains the spirit of our nation which can't be eliminated. But a lot of young people around me in China are not curious about traditional culture or even don't like it. It might be because in a lot of people's eyes, it's too slow and not fashionable enough compared to pop culture and modern art. I want to change this stereotype. As shown in my experience, people will also be attracted by some traditional culture like the costume. So the lack of tradition now is not because it doesn't fit in the modern society, but because many people misunderstand the traditional culture which they will never have the opportunity to learn about.

VL: What do you mean by too slow?

JH: Traditional Chinese culture is a really big topic and contains different types of culture and art. But most of them have a same feature. You need to calm down and have a peaceful mood when you feel it and enjoy it. Traditional Chinese culture always hides some deep meaning behind superficial art forms like paintings or poems, etc. But in modern society, people always have a fast pace of life and they are always immersed in a fast-food kind of culture. They lose the mental state to slow down their pace and enjoy the traditional culture.

VL: That's interesting. When you were a kid did you have the same passion, or did it develop later in your adult years?

JH: Actually when I was a kid, I didn't notice the deep meaning of traditional culture. I just felt the poems were beautiful when memorizing them as required. I just loved to use a scarf to pretend

that I was wearing the beautiful clothes in some historical TV shows. I just drew some lines on a piece of paper and pretended that I was playing the traditional instrument "Zheng". As you can see, even I did not notice it, it influenced me a lot in different parts of my life.
When I grew up, I realized the deep meaning hidden behind these art forms. I can feel what the poets felt when they wrote the poems because I also face the same situation. For example, I can feel the sadness of a poem about homesickness because now I am far away from home. A poem written by He Zhizhang in Tang Dynasty called Casual Compositions on Homecoming says:

Away from home for a long time,
Lately people and things have changed a lot.
Only in the Mirror Lake in front of the home door,
Spring breeze ripples the old waves as before.

I am so surprised even we are separated from a thousand years, they could use those beautiful but simple sentences to express my feelings. That's amazing. But when I was a child, I always stayed at home with my family. I did not have the opportunity to feel what the poet felt. So, to answer your question, I should say that I was influenced by traditional culture without noticing it when I was a child, but I became aware of the beauty and the importance of traditional culture when I grew up.

VL: So who's your target audience? Would they be here in the US or back home in China ?

JH: I think the answer will be the people who will potentially be in love with traditional culture. Not only the Chinese youth but also foreign citizen of Chinese origin. Even foreigners who are interested in or might be interested in traditional Chinese culture can be my target audiences. I'm not forcing everyone to know all the traditional culture. Because I know that different people have different interests. Traditional Chinese culture is such a big topic that includes many different types of culture and art. I just want to break the stereotype of traditional culture and wish to give people another view of it, so that someone who knows nothing about it before and may be interested in some parts of it can have a new chance to see it, feel it and learn more about it. I want to recapture the imagination of Traditional Chinese Culture in the youth of China.

VL: Do they like Western culture now? American artists? Hip-hop?

JH: Yes, or Korean and Japanese culture. They prefer pop culture originating from neighboring countries or Western countries. But I believe there is something in traditional culture that pop culture cannot replace. Traditional culture can be popular too.

VL: What do you mean by pop culture? What's it about?

JH: It's about anything that is popular these days. They love movies from Hollywood, animations from Japan, pop stars from Korea, but pay less attention to traditional music, traditional instruments, poems, or any other forms of traditional culture. For example, a lot of friends around me learned how to play the piano or the violin, but only a few people chose traditional instruments like Qin, Zheng, Di, Xiao to be their hobby. There are

more western instruments like guitar, piano in the instrument store than traditional Chinese instruments.

VL: Are these instruments hard to access? Are they expensive? Can they play pop music? Why do you think the youth are trying to erase tradition? Is this just an artifact of being a rebellious youth?

JH: No. Actually many of them are even cheaper than some western instruments. And they can also play pop music. There is a pop music style in China now that combines some traditional instruments and traditional poetic lyrics with pop songs, which is really popular in some groups of young people. As you can see, traditional instruments can also combine with pop music. Young people are not really trying to erase traditional culture, but they ignore it and misunderstand it. They have the stereotype that traditional culture is out of style and cannot fit into the modern society. But when it is introduced to some pop culture, they are really willing to accept it.

VL: So which part of traditional Chinese culture are you trying to explore?

JH: I'm thinking of combining some aspects found in painting, music, poetry, costume, and dance to make an integrated project.

VL: Why do you think the combination of these will be effective? Why not just choose one? Is there one that you are more attached to than others?

JH: Because traditional Chinese culture includes so many different art forms like poems, paintings, costumes, etc. On the other hand, different people have different interests in culture and art. If I only use one of these, it can only attract people who are specifically curious about this type of culture. I want my project to include many different elements so that some parts of it may attract different people. As for combining it, dance will be the main component to convey the whole story. Other elements will be added as other parts to help the dance to build up the story and show the spirit in it.

VL: So you want to combine these elements and say a story in a dance or music or poem… So you picture it as a live performance as the result of your project?

JH: Yes. Live performance is a good medium to convey my thoughts.

VL: Why is performance the correct medium for this? Why not film or photography?

JH: There is importance in connecting with the person and the stage in the whole environment in real time. The live quality is very important to creating memories of tradition. Also the performance aspect predates film so I want to use a medium that is true to the representation of the tradition.

VL: How will you test your idea to get feedback from people? Say, they see the significance of traditional culture by means of your prototype.

JH: I'll probably create a simple version of the performance, like a video or a choreography, and then show it to people. Or do you know the traditional Chinese shadow art? Maybe I'll use this art form in my prototype.

VL: But you mentioned the live quality of utmost importance above, why video for the test, why not something live?

JH: It is hard to always use the live version, I will just show the storyline and choreography tests as a way to receive feedback, and iterate the idea. For the final piece however, it must be live. So I will use more contemporary methods to build the concept and stick with tradition for the result.

VL: Great. What will the content be? Will there be a story? Will it be abstract? Will it be narrative based? How do you plan on dealing with creative content?

JH: It will be a traditional girl encountering a modern girl in a museum setting. There will be a painting on the wall in that scene, which will have a mythical power to bridge the two hearts. This will be portrayed as a dance between the time separated traditions. The two characters will have some interactions and communications through the magical painting.They may change their life and get into a new environment. At the end of the story, the spirits of two characters will fuse with each other and become a new, complete soul.

VL: Wow. What is the symbolism in this? The deeper meaning of this exchange?

JH: As I mentioned before, traditional culture influenced me a lot when I was a child and I even did not notice that. But when I grew up, I was aware of my traditional spirit in my deepest heart. On the other hand, I also love pop culture just like other young people. I love hiphop dance, hollywood movies and pop music as well. I'm living in a world that is globalizing in a fast speed. No one can stop the pace of it. I have really gotten used to this kind of lifestyle, but I also aspire for a more peaceful, elegant and traditional life. I want to talk to my traditional spirit.

At the beginning of the story, the traditional girl hiding in that magical painting represents my traditional spirit. The modern girl on the stage is the modern spirit of me. The whole museum scene is like a traditional culture atmosphere which will stimulate my awareness of the traditional culture. Just like I said before, I could always get in touch with some traditional culture during my upbringing. The painting is similar to a key that can help me to communicate with my traditional spirit. I hope that I can really talk to my traditional soul face to face.

Culture is always developing---even in ancient China, for example in the Tang dynasty, costume, dance and music are also influenced by other countries. They always added some "pop culture" elements into the traditional culture and created a fusion of them. This was how the traditional culture could be spread throughout so many years. But in Qing Dynasty, the Manchus ruled China and many Han culture such as their ethnic costume style were forbidden at that time. If they did not wear the Manchus costume, they would be cut off at the head. Later, China suffered a long period of being invaded by other countries. In the middle of 20th century, the Cultural Revolution happened in China, which destroyed many traditional culture and culture heritages. After that, the Chinese economic reform policy started so that different kinds of foreign culture suddenly impacted China. As you can see, the connection between traditional culture and pop culture was destroyed by so many historical events. The recognition of traditional

cultural identity in China has been decreasing so that traditional culture cannot be spread as it was before. I want to build the connection again in my performance. The painting is just like the bridge between traditional culture and pop culture, and I am going to cross it.

VL: How will the story translate to the medium that you choose?

JH: I am not sure yet but I am considering introducing some types of digital iconography to the choreography through projection mapping, video, and sound to enhance the symbolism in the exchange.

VL: What is the painting going to be? Why that painting?

JH: I am interested in using the painting called 簪花仕女图, which means Ladies with Head-pinned Flowers. It depicts the life of court ladies wearing magnificent clothes strolling in the flower garden. I choose this painting because it really shows the slow pace of a traditional life. Sometimes I really yearn for a slow and peaceful life, but actually I don't have the opportunity to experience it. The first time I saw this painting in my art book, it caught my eye. Not only because the costume of the ladies were really elegant and beautiful, but their faces and gestures showed that they were so relaxed and had nothing to do except strolling in the garden to kill time. It's hard for me to quiet down in such a colorful modern world so I want to use this painting to touch my aspired life.

Examples of what community building and engagement can do.

Images from Facebook and the Ryerson Communication & Design Society Facebook page.

Brian Hui

The Community Framework Project

Question: How might we better foster student communities in higher education institutions to promote cross-disciplinary collaboration outside of the classroom?

Statement: To help create a culture of cross-disciplinary collaboration in student communities, we must first deconstruct what motivates and drives students to be a part of their school community in order to create a framework to help promote and foster cross-disciplinary, collaborative relationships.

Valerie Lee: Tell me the story of how you came up with your research topic.

Brian Hui: My topic is about fostering student community and engagement. I came to the realization that this is what I wanted to pursue for my thesis because I had a lot of experience with it in my undergrad. This topic that I want to focus on is different from classroom engagement and community. I want to focus on cross-collaboration outside of the classroom. I know the power of fostering student community, especially for cross-disciplinary collaboration, because I've previously had experience with fostering community.

At my undergrad institution, we didn't have any initiatives that promoted cross-disciplinary collaboration and it always felt like we were missing something. So, in my senior year, I was part of a team that helped formed an organization to help foster cross-disciplinary student collaboration to break down silos. I really want that same experience for everyone which is one of the main reasons why I'm pursuing it in a more academic scenario. The purpose of it is really to try to understand the motivations behind student involvement and try to build some sort of framework or experience to help foster community.

VL: That's interesting. When was the first time that you recognized how beneficial cross-disciplinary collaboration could be?

BH: I think the first time I kind of recognized the impact of cross-disciplinary collaboration was when I was hired by the business school society. It was a student run society that was looking out for the interests of business school students and the VP of Marketing at the time. His name is Amir. He hired me to be a graphic designer and I actually think he didn't expect me to produce such good work and, well, the rest is history. I know that after that year, they started hiring more people outside of the business school program. I think even they learned that sometimes to be the best, you kind of need to reach across borders and hire the best. So that really, I think, was the spark. Later on I would also be part of other initiatives that confirmed my thoughts on cross-disciplinary collaboration. Meeting people as part of these initiatives and groups also worked in my favor to confirm my thoughts as well. Plus, I made some new friends along the way who all have different ambitions, interests, and career paths.

VL: So I assume you're doing this for the general NYU community. Do you think the resources that we have at NYU right now is not enough to foster that kind of cross-disciplinary collaboration?

BH: I'll admit that I'm not really familiar with what's going on here at NYU in terms of collaboration and community. I know Tandon has an undergraduate student council and a graduate student council but it doesn't seem like anyone at IDM knows about or participates in any of these events in the undergraduate or graduate level. It's also really hard, I think, for us as IDM students because pretty much all our classes are on the floor at MAGNET and so it's really hard for us to branch out and seek other opportunities.

This is really similar to what I was talking about earlier as I think that what is happening here is almost a reflection of what I experienced during my undergrad. In fact, I tried solving a similar

problem at IDM to try and bridge the divide between undergraduate and graduate students. I can't take credit for these ideas but I did my part to help. Kelly, another IDM grad student here, created the Lorem Ipsum zine as another way to showcase IDM student work. From the beginning, we all recognized that it would be better to have undergrads join the team as they are typically here longer and so we have people to pass the torch to. The zine team was ultimately comprised of a healthy mix of undergraduates and graduates and we're working on launching a second issue in the spring. We're pretty excited for that, but the real test is to see if it lives on after the original team has graduated. Dana Karwas, who's one of the professor's here, started a design magazine called Mission Control - another initiative that was started to produce something tangible, and it also helped increase collaborations between undergraduate and graduate students.

At Ryerson, my undergrad university, all the programs in my faculty, the Faculty of Communication and Design, or FCAD for short, were scattered in so many different buildings that there was no sense of community. Even if there were initiatives that tried to foster cross-disciplinary collaboration, they were probably too top-down from the university to catch the attention of many students. In my experience, no one really likes to be told what to do by the university. I've always had way more success with getting people to be engaged when it's a more of a peer-to-peer kind of thing.

VL: Can you give examples of any cross-disciplinary initiatives at NYU that we may not know about or are exposed to?

BH: Well I think a lot of the cross-disciplinary initiatives on campus really revolves around the Leslie Entrepreneurship Lab as well as the GreenHouse at the MakerSpace here at Tandon. These two entities are the main two organizations that I know of that act as drivers of collaboration and entrepreneurship. To me, these two organizations are striving to create a more formal kind of collaboration. It's the kind of collaboration that can help develop new businesses or work on product ideas. I think this kind of collaboration has its place at this university, but that's not the kind of collaboration I want to encourage.

What I want to accomplish is to foster a more casual kind of collaboration. I use that word kind of loosely since what I really want to do is to encourage building bridges between people that study in different disciplines. There's no reason why student from Stern or Steinhardt or Tandon or Tisch couldn't be friends with each other or work together on a more casual project. I know there are some initiatives out there, like the Healthcare Makerthon in early October, that strive to foster more casual kind of collaboration to solve a problem. These initiatives are really cool and when people participate in these things and other events like that, it can help people from different programs and schools connect with each other. Another problem is how to let people know about these opportunities, and I feel like that is a whole other problem.

VL: I see. Well, would you say that your target audience is IDM students?

BH: My target audience is not necessarily IDM students. It's really more for students at large higher education institutions, especially urban

institutions like NYU or my undergrad university since these are, more often than not, commuter schools, where people are way more likely to just go to school and then go home.

I know that the "commuter school problem" was also a big deal at my undergrad university and people were always trying to build community somehow. But, like I said, they didn't seem to go anywhere or get anyone's attention.

Anyways, that was a bit of a tangent, but the reason that I think my audience is not only for higher education students but also for university administration and faculty members because they do also play a huge part in helping to foster strong collaboration especially across disciplines since they are usually there at the institution for longer periods of time. Students are at these institutions for a relatively short time so it's hard for students to really do the brunt of the work. It's usually a combination of student-led but also university-backed support to create a more structured way to promote cross-disciplinary collaboration across the campus. What I'm trying to say, really, is that any initiative to foster collaboration and community should be organically grown from students while university administration and staff can help guide these students and support their efforts. In my experience, this model has led to success.

VL: How do you envision your first prototype to look like?

BH: I've been thinking about my prototype and it's kind of very interesting because I'm not really sure what kind of experiment or prototype I want to do to "test" my assumptions. I know I want to get to the root cause of why people join student groups or other organizations so I think my first steps will be to understand students and what their motivations are before I can really even tackle how to tap into what the students care about.

I think my first "prototype" is going to be questionnaires and interviews. Ideally, I'd also like to kind of take the temperature of what's going on on-campus at both the main campus and here at Tandon. I really want to get to know the communities that are already on campus and see what they're doing to foster their communities.

VL: What do you think of hackathons? Do you think they are a bit too formal or would that address the kind of casual collaborative relationships that you want to see?

BH: I think hackathons are interesting. However, I think that most hackathons are way too coding-oriented so they are more geared towards people that are programmers and people that know how to code. What I want to do is kind of promote other things like designers, who may also love to participate in hackathons but can't code. Even business students have a unique skill set that can help programmers and designers, especially in an environment like a hackathon. They can market and sell a product. My point is that there's a lot of different people out there who have different skills that they can use. In the context of cross-disciplinary, collaborative relationships, I really think the problem is that people may not know where to bring their skills.

VL: So you say there is some sort of model that you can take to other higher education institutions, like universities from other states? How do you think

they’re going to apply this model to their own communities?

BH: A lot of it I think is going to be coming down to understanding and targeting. Timing is also a really important factor. I think timing is actually one of the most important factors because even if you have all the ingredients and the timing isn't right, any initiative you try to bring forward might not work.

If people don't feel like they need the cross-disciplinary initiative that you’ve built, then ultimately it's not going to happen. I think the end goal of this project is to have a framework or factors that people can look for and address in their communities to help kind of start to light the fire in their students. But as of right now I am not sure what that framework is going to look like yet. All I know is that this framework will have several key factors that institutions should look at before they target and identify students that can help build this initiative.

VL: That's a good way of putting it. In regards to your future career paths, do you see this contributing to your goals for what you want to do after IDM?

BH: Kind of. I don't know if it relates 100% to what I want to do but this is a topic that I’m really passionate about. I do like design. I like using design to bring people together. One of my end goals is definitely to use this project to analyze designing services as service design is something I’m really interested in but don’t have too much real world experience. At this point in time, I can't definitively say that this will or will not benefit me in my career or that this will even help at all. What I do know is that I don’t want to just turn this into a side project or something that's completely unrelated to what I'm doing or what I want to do. I know that, in the end, I want to develop something that people can tangibly use to evaluate and build communities.

Uncanny Portrait by Casey Judge (Alex Lotsos kindly pressed the shutter button)

Casey Judge

Combatting the Uncanny Valley

Question: How can we combat the uncanny valley effect in digital media?

Statement: As we approach the ability to create lifelike representations of humans in digital media, more and more of these human-like creations are falling into the uncanny valley. For creators to avoid falling victim to the uncanny valley effect, we first need to understand the complexities of what triggers this response in people.

Mikayla Kocan: So what exactly is "the uncanny valley"?

Casey Judge: The uncanny valley is a term created by roboticist Masahiro Mori in an attempt to describe the negative reaction that many have towards lifelike recreations of the human form.

MK: Around what time in history did this concept emerge? Who came up with it?

CJ: This concept came from the early days of the robotics era, when people were just beginning to experiment with making lifelike humanoid robots. Masahiro Mori[1] was the first person to coin the term, and it was then translated into English (from Japanese) as the "uncanny valley." As people began creating more and more lifelike humans in other mediums as well, the term was then used to refer to the phenomenon across all human representations.

MK: How did you learn about this topic in the first place?

CJ: Stephen Colbert.[2]

MK: What?

CJ: I was watching his show, The Colbert Report, and he got so freaked out by his own wax figure when it was unveiled at Madame Tussaud's Wax Museum that he went on a rant about the uncanny valley. I was like, "Huh, that's pretty cool" and looked into it further.

MK: What interests you so much in this topic?

CJ: It's a strange bridge between science and art, an interesting concept that people rarely recognize, and it's an excuse to push the limits and potentially make something new in an area that I like. It's becoming a huge issue in the field of animation, a field that I've always been very interested in.

MK: How is the uncanny valley becoming a more popular topic of discussion within the realm of digital media?

CJ: Renderings are getting more photorealistic, and people are getting braver about approaching the "valley" instead of staying on the safe, cartoonish side of things when designing human-like characters.

MK: What field does this concept mostly relate to?

CJ: I guess it bridges psychology, biology, evolutionary studies, but within the realm of artistic media it appears in games, animation, cgi effects, wax figures, art -- everything that is photorealistic but not quite real. I find the evolutionary aspect of this particularly interesting -- it's strange to think that we may be controlled by a instinctual force beyond our control, and that we can't manage to trick ourselves into thinking human-like forms are real.

MK: You mentioned an evolutionary component -- do you think animals experience this effect too, or is it just humans?

CJ: There are many theories suggesting that this phenomenon may be related to a survival instinct, and therefore should be rooted in evolutionary concepts. I located one study showing that the

uncanny valley effect appears in chimps when they are shown static rendered images of chimpanzees.[3] Another study tested the "yawning is contagious" effect on chimps using digitally rendered images to test their hypothesis.[4]

MK: With that being said, do you think that we actually can avoid the uncanny valley in media representations, or is it a lost cause?

CJ: I'm not sure. I think that's the aim of this project, I'm looking into whether or not we can jump back out the other side of the "valley" at all.

MK: So where do you plan on taking this concept, project-wise?

CJ: It might be an animation, digital rendering, physical object that can send data to a digital object, or even an experiment trying to find more conclusive evidence about why this effect occurs. I'll have to figure things out as I go and discover more on the subject to find the best way to explore this topic.

MK: For a bit of background, how did you become interested in animation and digital effects in the first place?

CJ: I like animated movies, a lot. I've always been super interested in motion capture animation, and integrating it with live-action film. Special effects and illusion have always been super interesting for me to explore.

MK: Can you think of a specific example, back from when you were a child?

CJ: Gollum, of course. He was the first fully motion-captured character integrated into live action film.

MK: Gollum from Lord of the Rings?

CJ: Yeah!

MK: Huh, he WAS created with motion capture animation…

CJ: And a bit freaky looking in the first few films. Though, I suppose, the entire character of Gollum was supposed to be a bit off-putting and make people question whether or not they trust in him within the plot of the film… perhaps the uncanny valley effect worked to the advantage of the filmmakers in this case.

MK: Why do you gravitate towards the visual effects and animation components in films and games rather than anything else?

CJ: Those are the elements that makes films and games different from real life… those are things that can't exist in real life, and we can only experience things, such as hobbits or dragons, when we create them in virtual worlds.

MK: Do you think more interactive virtual worlds, such as video games, are more prone to falling victim to the uncanny valley as compared to film, where creatures like Gollum have been successful for a while now?

CJ: I do think interactive experiences are more prone to the effect, because movement is also a major component. Game data not controlled by natural, human-originated motion capture data. Instead, the player is in control of the movement

which creates a disconnect between the player's actions and what they see on the screen.

MK: So with this project, what do you hope to accomplish in the end?

CJ: I hope to discover much more about the uncanny valley phenomenon, and hope to figure out how we can move away from it occurring in digital media projects. Potentially, I also might want to redesign the graph everyone is familiar with, to update it for a more modern digital perspective on the uncanny valley: [5]

MK: Can you speak a bit more regarding this graph? What is it, who came up with it, and does it hold true as things develop over time through various media?

CJ: This graph is an approximation of how a person will react to a "fake" human-like form. The y-axis approximates the reaction, while the x-axis is the photorealism level of the form. As you can see, there's a sharp dip in the graph right before it approaches total visual realism, and adding movement to the equation makes the dip even more severe. The graph, much like the term "uncanny valley," was published by Masahiro Mori in his essay, "The Uncanny Valley." I'm actually not sure if this graph is the best representation of the uncanny valley phenomenon in the current era of digital media, and perhaps this is something I can look into during the course of this project.

MK: It sounds like the concept of the uncanny valley leaves a lot of room for you to explore and discover over the course of this project.

CJ: It definitely does! I'm excited to see what I can discover, and where my research will take me in regards to a final prototype on the subject.

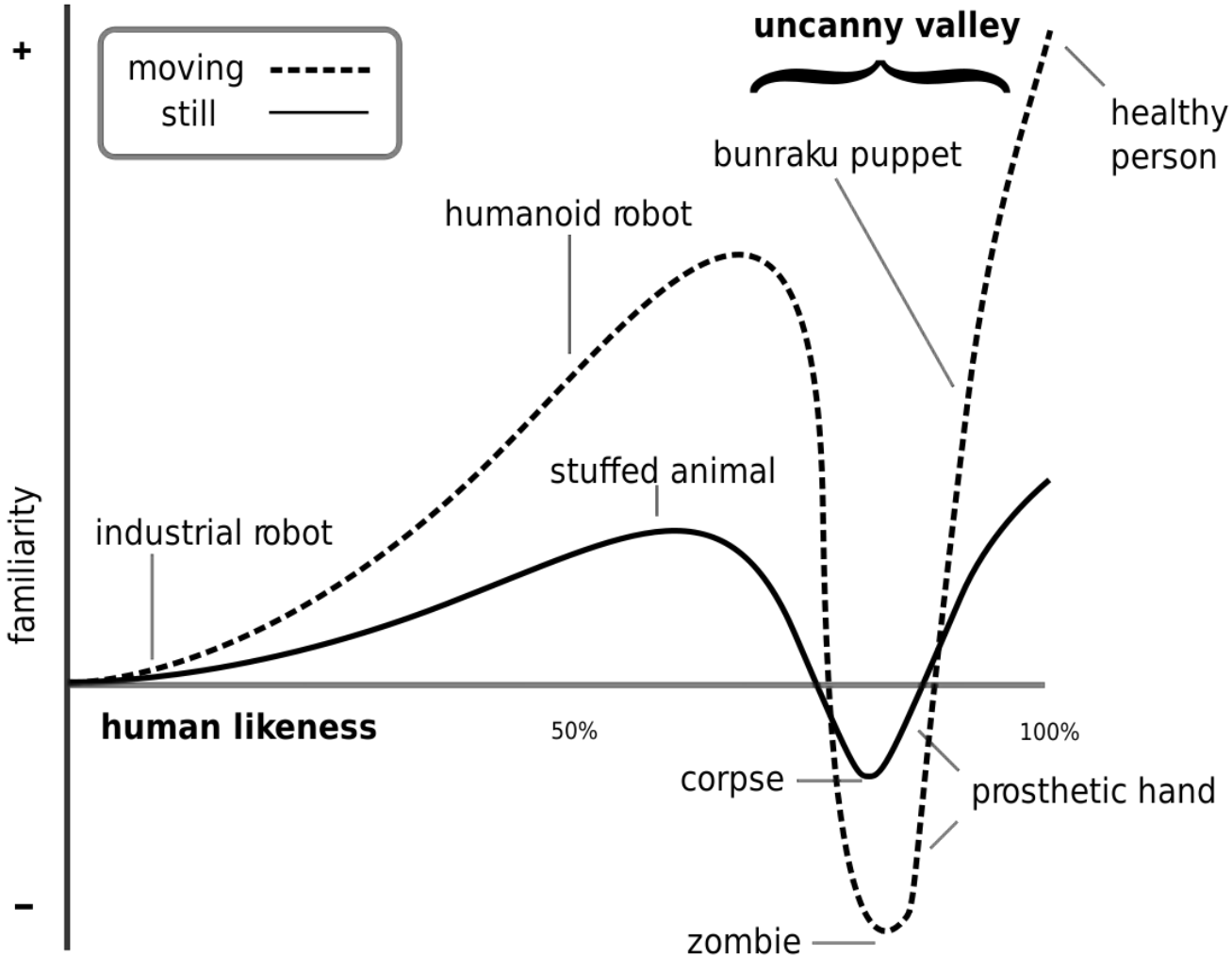
1. *M. Mori, "The Uncanny Valley," Energy, vol. 7, no. 4, pp. 33–35, 1970 (in Japanese). Republished on spectrum.ieee.org.*

2. The Colbert Report, Episode dated December 6, 2012.

3. Like humans, monkeys fall into the 'uncanny valley'. Kitta MacPherson.

4. Computer animations stimulate contagious yawning in chimpanzees Matthew W. Campbell, J. Devyn Carter, Darby Proctor, Michelle L. Eisenberg, Frans B. M. de Waal. Proc. R. Soc. B 2009 276 4255-4259; DOI: 10.1098/rspb.2009.1087. Published 26 October 2009.

5. M. Mori, "The Uncanny Valley," Energy, vol. 7, no. 4, pp. 33–35, 1970 (in Japanese). Republished on spectrum.ieee.org.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corpse
prosthetic hand
zombie

City Sunset created by bin.xiang; Smashing Magazine created by Guillaume Kurkdjian; Diva Maria created by Ingrid Tusell Domingo.

Shuang Liang

It

Question: What happens when our physical environment is able to understand our emotions?

Statement: We always have unique emotions toward the physical environment, but we never try to communicate with it. For instance, why do you feel differently when you are in your house and other's house? It is no doubt that we can be influenced by this physical reality and communicate with it without words. I am trying to find out what is it.

Valerie Lee: Can you tell me about your research topic?

Shuang Liang: My research topic is about using the communication between the human and physical environment to create a positive emotional shift in how they are feeling.

VL: Wow, how are you going to do that?

SL: I want to gather emotion as an input and give feedback to the person.

VL: Why are you interested in this way of tapping into and affecting emotions?

SL: Because I want to find a way to measure the physical reality and how this will affect us.

VL: Is there a reason why you are interested in the physical world?

SL: Yes, there is. I feel like we live in this physical world, but at the same time we are separate from each other. The human and the physical world are always here, the way they act in our life is through objects. And this interaction is not necessarily something that we can see through our own eyes.

VL: It sounds to me like you are concerned about our relationship with objects--Why?

SL: Yeah, because I'm thinking all of these objects we interact with are made by the human, but why do they exist in this way.

VL: What way?

SL: For example -- if you see a building. For many people, this building is for living or for working, but if we view this building as another object or as some type of creature, how does this view change will affect our lives? For example, when you go home you feel secure and it is a personal space, why do you feel that? These are some of the questions I would like to explore in my project.

VL: Hold on … creature? Can you explain? This makes me think of metaphors such as "mother earth", "home sweet home" these metaphors for home… but let's talk about the creature. Explain this building creature in more detail for me…

SL: Sometimes I feel like my room or my apartment can give me some types of feeling. It is stable and physically static for me (just want to clarify) but it can give me a lot of feelings about the home. For example, when you go to your apartment and to others apartment, why do you feel different.

VL: if your apartment creature had a personality, what do you think its traits would be?

SL: The creature makes me feel relaxed and I am separated from the outside world and society and I can stay in my own world. I feel safe.

VL: I like that you are talking about this through the metaphor of a creature, it sounds like a very parental creature or symbolic of a caretaker.

SL: Yeah…And also a friend of me.

VL: What does the creature look like?

SL: Physically it looks like an apartment. Okay, I'm gonna to describe something about my apartment.

Mine is one that is close to the sea, which makes me feel relaxed when I go home, and there is a lovely housemate, Jing. We like to tell secrets to each other in this space. Our apartment is a bubble for us that is separate from the outside world. but in my mind, it is like some person in my family or one of my friend that I can easily talk with about what I think at that time.

VL: What is the significance of the sea for you?

SL: So the sea is just an example basically. I love the sea, it makes me feel relaxed when I am stressed and makes me calm down when I feel anger. But I also want to add some sea elements to it if possible. Also to better simulate a real situation that makes the users feel comfortable, not just go into a simple room.

VL: So if you are building a creature of your own, what characteristics would you like it to have?

SL: It can understand me even I didn't talk much. I can tell it a secret and not worry about anything. It may make me feel more like a friend of mine instead of a place to stay. And also, it makes me feel comfortable and relax.

VL: Why do you think it is important for other people to experience your creature?

SL: Because everyone has experience of bad moods, and what always happened to us is that when we have a bad mood, our friend cannot be with us 24 hours a day, so at that time we need something to make us feel better. If there is one that is safe and can make you feel good, why not trying to communication with it?

VL: If your creature can listen, how can it do that?

SL: I will use the emotion as an input to this. I'm still doing research on the methods of emotion detection. There are several ways I found in theories. Like use biodata of human body, or like voice tone, or just facial expression. I haven't decided yet. Also, if the accuracy is important, I possibly choose to use some commercial product.

VL: If your creature can comfort, how can it do that?

SL: So right now I'm thinking to use the lights and music to affect people. For example, when you are upset, the creature will know that and the brightness of light may go down. And when you feel angry, the creature knows that and then it will change the color of the light to be softer, and also maybe the music will be played to make you feel become cool down. I may also consider to include some other interaction designs. Something like adding an interaction on your bed maybe. For example, when it knows that you are sad, and detect that you are lying on the bed, maybe the bed will vibrate in some ways that make you feel like someone is petting on your back. Something like this.

VL: Sounds cool. When you think about this creature, why it is significant to the space?

SL: When I talk about the creature, actually, I'm just trying to make people better understand what I'm saying. Because on one side, the space, or the physical environment is something that always and directly around us. On the other side, when we talk about communication with the creature, what we mean is with not only just human beings but also

like dogs, cats, etc. These are all creatures, and all of them can give you some reflections when you act in certain ways. That is communication. So I'm thinking if this space can give us some feedback based on some information about us and also change our feelings at that time? That also can be viewed as a certain way of communication. Then can we think of this as a creature? Because in some aspects, it comes to live.

VL: So you are inside this creature?

SL: Yes.

VL: Why you think you are inside the creature instead of facing the creature?

SL: What you mean facing the creature?

VL: I mean...let's say now what you mean is the room is a creature and you are inside of it right? Why not viewing each object as a creature, for example, a light is a creature, a desk is a creature...I feel like this is easier to think about it.

SL: That's an interesting point. Because it looks more understandable. But wait... Compared to that the creature inside the room, that the creature is the room is still different. For example, let's talks about the light. When you go into a room, the light changes its color for you, but that is just for the light, it is communication between you and the light, not the whole room. If it is not the whole room, it might not be that convincing because that is not the whole physical environment in that situation. Okay, let's think about an example… about communication between human beings. So when we communicate, we use the words to convey that, but at the same time, we also use our body language, our facial expression, and even our eyes to convince you. That whole bunch of experience is a communication. During this progress, I feel like you are communicating with this whole creature instead of each element or each part of the creature.

VL: That makes sense. So you are likely to create a space for people. Will people share it? Or just a prototype? How do you want people to explore it?

SL: I'm still thinking about it. But I think for this project, it might be just an experiment or a prototype for future. Because on the one side, people tend to be familiar with their own space, so the moods they have towards their own environment and a new environment might be different. Also, if I want this to be somewhere they are easy to get to, it should be somewhere that always appears in their life. And then it can't be in a specific place. And I think people also don't want to go anywhere they are not familiar with every time when they are in a bad mood. That makes no sense. So I think it should be like customize for everyone. So it won't be a shared room.

VL: When you say customize, how will you do that? Because based on what you are talking about, it seems like the creature is something that works based on the general theories and big data. Not based on one's special preference.

SL: Yeah, that is a good point. So what I'm thinking is it can start based on a general theory. For example, most of the people like the light to be a little bit dimmer than the common situation when they feel sad. But maybe someone like the light to be brighter. Just an example. So maybe at the beginning, the light will still go dim when it knows that this person is

sad. But that will make him or her feel comfortable right? So he/she will change the light to be brighter. Let's say, if this situation appears several times, the creature will know that this is your preference, and then next time, it will follow in this way.

VL: So you mean it also has an ability to learn?

SL: Yeah. And I think this also can be seen as a progress of making friends. Because the progress of making friends is also a progress to explore what is their preference.

VL: So when you talk about friends. Like you view this as your friend. Do you think this will replace human interactions? Like you already have this friend, will you think the communications between human beings will be less?

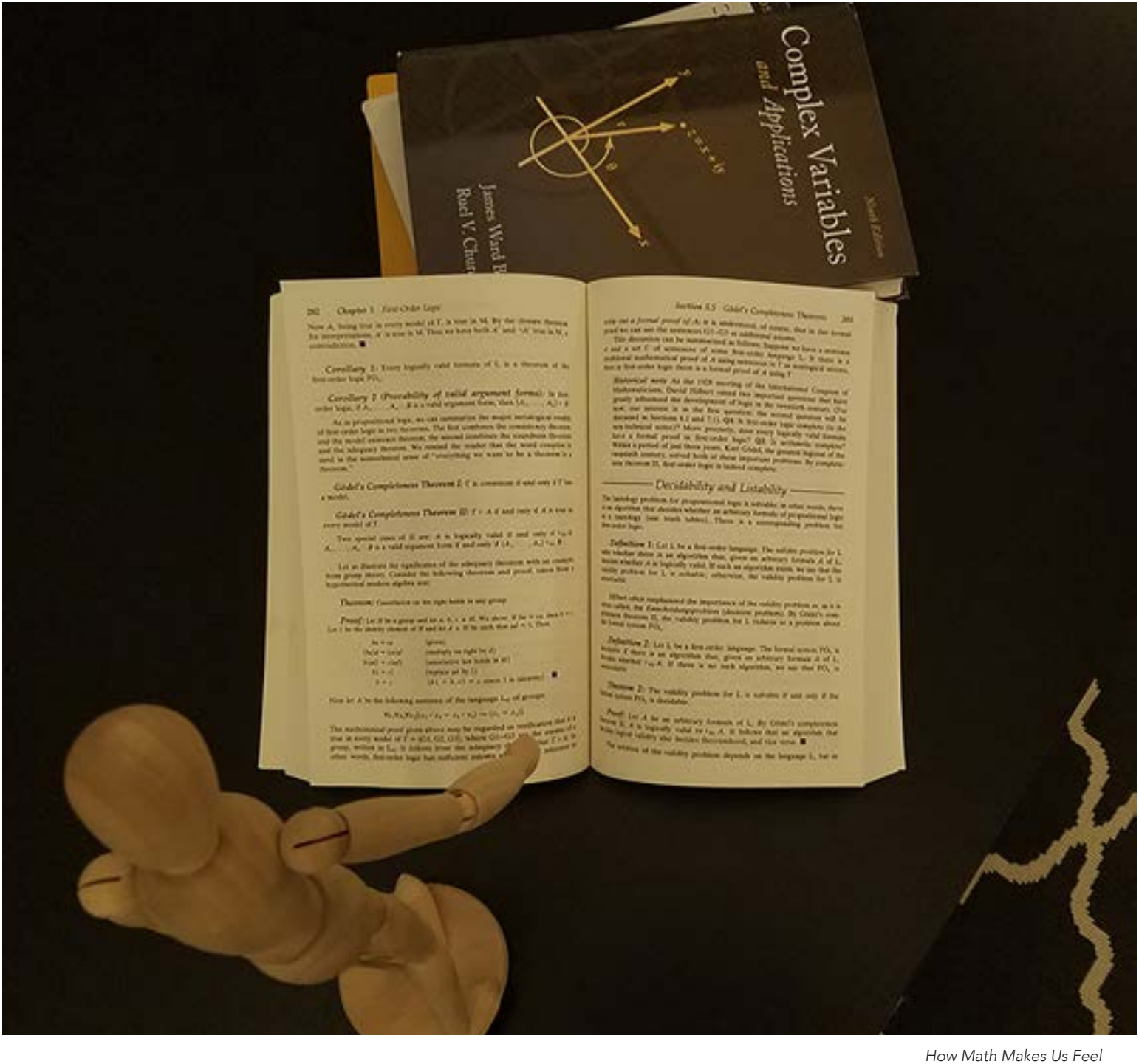
SL: I don't think so. For example, you. You have a lot of friends, you might be doing different things together with different people. So does this creature. It is just a part of your life, not all.

VL: I see...I'm curious about how did this idea come about? What inspired you to do this research?

SL: I was inspired by some animations such as Monster Inc., and Inside out. To be honest, at the beginning, I was thinking of creating something that immersive technologies can bring us, like using augmented reality or virtual reality. But then I realize that for me it is not convincing. Because AR or VR is just a method. And I shouldn't start from it. So I tried to put it aside and start to think about something else. Then something came into my mind. What if the environment or something that we think is working mechanically can come to live like that happened in the animation? Can I communicate with this physical reality? And suddenly I realized that if I can find a way, no matter how it will be, that is augmented reality.

VL: What is the big picture of this? Are you looking for some particular audience? Older people? Children?

SL: Till now, the audience in my mind is the adult. At the beginning, I was thinking this can be applied to everyone with a bad mood. I talk with people, and then I realized that sometimes the way of communication toward people in different ages will be still different. Like adults may put their attention on not only what you are saying but also other scenario things during communication. But children may tend to focus on the word itself. So if I want to communicate with children, the word, the language itself is an important element.


Complex Variables
and Applications
James Ward
Ruel V. Chur

Alexandros N Lotsos

Games in the Math Learning Process

Question: How does player agency affect the role and value of video games in intermediate STEM education?

Statement: Video Games can be viewed as a unique medium from a variety of different perspectives, including aesthetics, mechanics, narrative and storytelling. However, one defining characteristic of games that is often overlooked is the sense of agency that they give to players. Few other widespread media offer the same degree of interactivity to their users and even fewer make their users feel as important and as involved as video games. I believe that this sense of agency is what makes games an effective educational tool, the usefulness of which has become increasingly harder to dispute. Many parents and educators acknowledge games as a valid part of the educational process and resources like BrainPop provide empirical evidence towards this fact. Thus, the goal of this project is to analyze that sense of agency, how games deliver it, and in turn, how it affects the role and value of games in the educational process.

Gabriella Cammarata: Okay so what's the purpose of this interview?

Alexandros Lotsos: Well the purpose of this interview is to sort of document the process and reasoning behind why I changed my topic so far into pre-thesis.

GC: Alright, can you briefly describe where you thought you were going originally?

AL: So, my original idea had to do with data visualization in the new immersive media. Like AR/VR and their derivatives. I wanted to see how and if they could help eliminate the implicit confusion about abstraction in the mathematical models used in data visualizations. The reason I wanted to pursue this topic because the current methods of data visualization use very abstract means to portray the magnitude of different observations. I took inspiration from Luke's work, "Take a Bullet for the City" which does a very good job at this, in my opinion. The work is about gun violence in New Orleans and every time a gun related crime is recorded, a gun in the installation literally goes off. Now, the same journalistic effect could have been achieved with a number on a screen or a bar chart. But you don't quite get the same feeling from both means, right? When you hear the gunshot, the number is immediately translated into something more meaningful.

GC: Okay, so that's where you were. But you changed, why is that?

AL: Well the topic of mathematical abstraction is still great. I spoke about it in the last question and you could tell that I'm still a little excited about it. What made me change however is the media that I was going to be working with. I don't think that I would be able to work with VR and AR for six whole months. After some research and attempts to build some prototypes, I don't feel that VR and AR deserve all the hype they get. Especially discussions between my classmates; they turn me off of the technology completely.

GC: Yeah, I stand by VR being a screen strapped to your face. I really stand by that because you have the same visual tools.

AL: In a lot of ways, I think this might be a technical limitation. The fact that VR still feels like a screen strapped to your face may be because we can only make screens strapped to your face. The graphics just aren't there yet and the alternative that is 360 video just isn't as immersive as they want it to be. So essentially VR gets thrown out the window even though you can make a data driven VR app, or make immersive data visualizations, I just can't see myself working for 6 whole months with VR. The other branch that is AR and its derivatives gets thrown out because it actually lends itself better to traditional data viz and because prototyping for it was definitely not for me.

GC: Alright, so where does that leave you? What's the next step?

AL: This actually leaves me with a change that's way less drastic than it sounds. Initially when I first did the brainstorming exercises that Dana told us to do, I made this mind map of all my interests. There were different branches in it like programming, math, sports, and games and I noticed that the games branch was different from

all the others. The stuff that was coming out of it was terms like "fun", "hobby" and "personal", so I immediately cut myself off and told myself that games are meant to be fun for me. I would essentially keep work separate from my hobbies. The problem is that when I tried to do that; working so intently on something for so long that I wasn't super excited about, was very difficult.

GC: So, what's the topic that you're excited about? What have you come up with?

AL: Well the formal definition of the topic that I have so far has to do with the educational value of games; math education specifically for me, but this might change later. I want to see how the unique characteristic of agency in games can affect their place in the learning process.

GC: That's really interesting. The first thing my mind goes to is probability. There are certain things that humans just don't understand well. We're almost hardwired to not have an accurate sense of probability. Like at some point, something rare is bound to happen to me; I'm going to run into someone and I'm going to think "What are the chances?" but in reality, the chances were quite high. We have a fundamental misunderstanding of the actual probability of things happening, so maybe by experiencing it through a game, you could communicate the intricacies of probability?

AL: I think you definitely hit the nail on the head in explaining a concept that most people fail to understand when it comes to games and learning. A game can go so much more in-depth on a topic than just introducing it or helping a student practice it. It can actually help people understand the implications of a mathematical topic.

You're talking about this concept of probability which can be a fairly advanced topic depending on how you learn it. In its simpler form, you can teach a fifth grader the concept of probability simply by drawing colored marbles from a bag of which you know the distribution of. If there are 4 red marbles in a bag of 12 colored marbles then the probability of drawing a red marble is approximately 1/3 or 33%. You can elaborate on this with consequent draws, replacing marbles, and other stuff like that but that's the basic nature of probability. With this in mind, I can just translate this process into a game where the player simply draws marbles from a bag and is told about probability via text. These are the types of games most people have in mind when they think about math games; games that just introduce a concept and don't deviate very much from what you see in textbooks.

Now, try to think of something more complex, like what you said before: running into someone on the street. I can make a very artistic game where maybe you're walking around the street, trying to avoid your ex-girlfriends or something. I can set the game to only spawn ex-girlfriends at a certain rate so that probability affects your performance in the game. As a player, probability affects you directly and you have a sense of it, without being directly exposed to numbers, marbles or any other textbook concept. This is where agency comes in. I can tweak the game's aesthetic, I can tweak the difficulty and other parameters of the game to give you more of a sense of the implications of probability in real life and see how that affects your understanding of probability as a concept.

GC: So you do think that games can sort of help you communicate the finer details of more complicated mathematical concepts?

AL: Yes, definitely. My target audience is the slightly older math learners that are starting to be exposed to topics that are a bit more controversial like optimization, trigonometry, calculus and the like. Topics where it's not uncommon to start hearing kids say "I'm so bad at math" or to start hearing teachers say "The student clearly isn't cut out for math or science". My ultimate goal isn't to make another math blaster game where it's not very removed from a textbook, my ultimate goal is to see how agency in games can be used to tackle some of the more difficult concepts and keep students interested.

GC: I hear what you're saying but I can't quite imagine a game that would make me good at doing trigonometry. How do you plan on making these games that will tackle such advanced concepts?

AL: Well one thing that I want to make clear is that I'm not looking to make games that will replace the learning process. I'm not envisioning a game where the player is going in, not knowing anything about a concept, like trigonometry, and comes out knowing everything about it. Instead, I'm trying to see where games would fit in the learning process. It's very much okay in my book to see someone get introduced to a concept in the traditional way, using a blackboard or a textbook, and then practicing using a game or deepening his understanding using a game. Of course, it might be different; games might better be suited to introduce a concept, perhaps as a warmup and then the traditional pen and paper practice method might come in. It's all about finding where these games will fall in the learning pipeline and how these games will look when they're at their best.

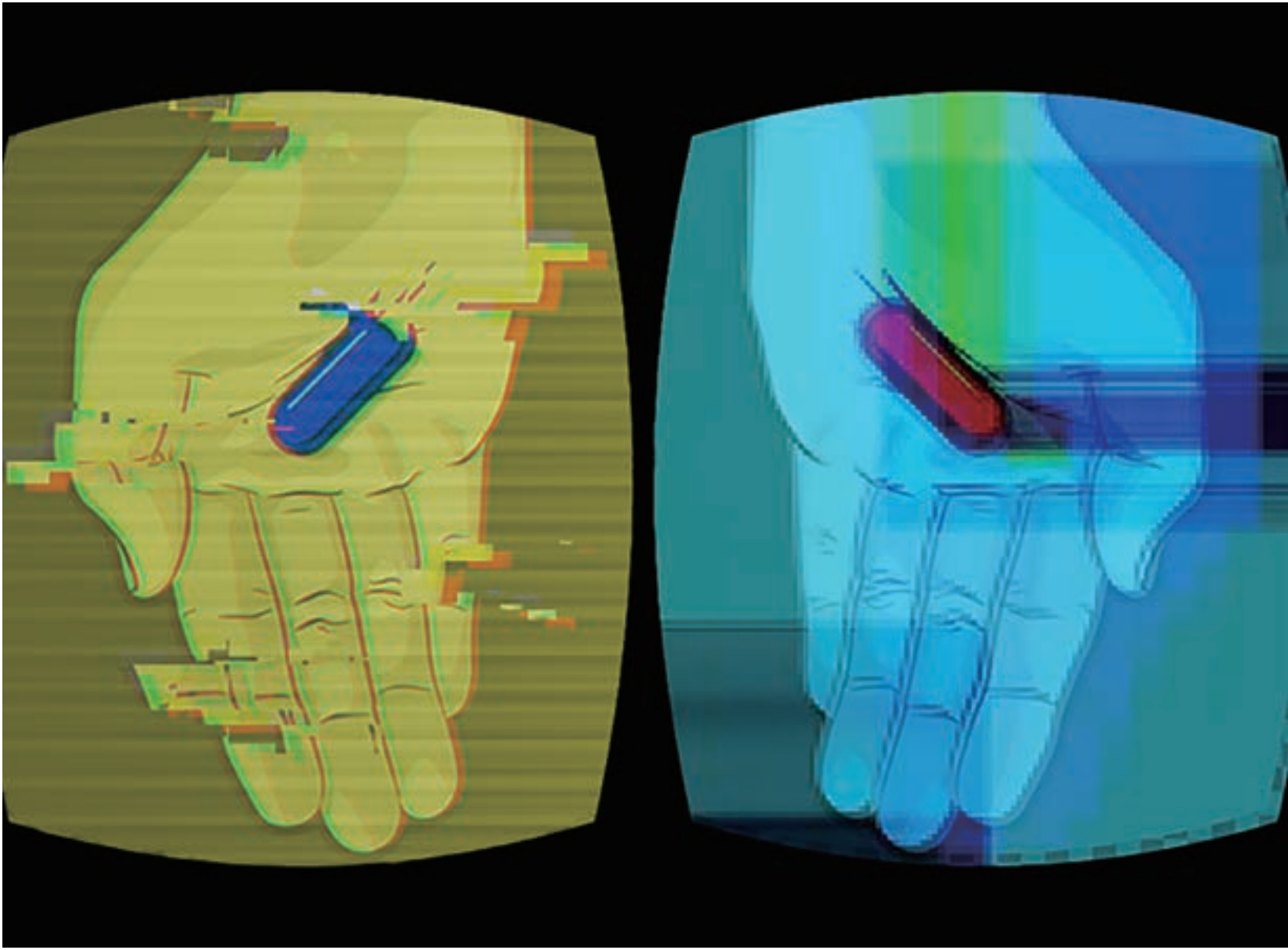
GC: I see, but can you think of a game that does what you describe? A game that falls somewhere in the learning process and help students understand more complicated concepts in math.

AL: Definitely! A game called Fallout: Shelter that was released as a promo to Fallout 4. It's a mobile game that revolves around managing an underground base – called a vault – that houses a bunch of vault dwellers with different skills and attributes. In order to get a higher score, the player needs to effectively utilize the dwellers and assign them to jobs where they excel otherwise their vault will fall apart. Now, obviously what I'm hinting at is the concept of optimization but if I just gave you the game and you played like an hour of it, you wouldn't think that this is about math. You would instead just tell me if you liked the game or not, whether it was cool and perhaps if it was hard or easy.

However, if I see that you liked the game and told you about optimization and how it could be used in games like Fallout: Shelter, you might just sit down and learn about it in order to get a great Fallout score. That's a great example of how a game can be used to incentivize learning mathematics. Other examples that come to mind are angry birds being a parabola drawing game and all the physics driven puzzle games like cut the rope and stuff. You can use games as an incentive to make students want to learn or practice math in many ways without making the game about practicing the traditional written form of math, like solving equations.

GC: Oh! So you're just trying to make a good game that's fun to play and you just want to see where it falls in the learning process.

AL: Well yes and no. I definitely want to make a good game but it's going to be based on what research tells me to build. If research tells me to build a game that's going to act as an incentive for students then I'm going to do that, rather than making a game that focuses on aesthetics for example. The key part of this project is figuring out what makes games unique as a learning method and how they can fit in the process of teaching students about more complicated things.



Illusions. Original image is from Oculus Connect

Siyuan Qiu

What is the Medium-Specific Storytelling Technique in VR?

Question: How can we take advantage of the medium specificity of Virtual Reality?

Statement: "Being there" has become the tagline for nearly every VR company. Indeed, sending people to Mars from their bedroom is a marvelous achievement. But why do we always talk about content when we talk about virtual reality as a new medium? The reality is already there, and VR should not be the mere representation of it. I hope to explore more about what VR could do and what only VR could do beyond the psychological and virtual realism.

Rachel Li: Let's talk about your thesis project! Are you excited?

Siyuan Qiu: Haha, Yes!

RL: So what are you working on?

SQ: I am a movie person who literally goes to the movie theater every day. But I do not really care about stories. What I am really into are the techniques of cinema through which stories are told: the montage, camera movement, mise en scene, etc. Here I am talking about cinema in a broader sense that is not limited to the "traditional film" — the art of organizing a stream of audiovisual events in time. In this light, virtual reality definitely opens up much more possibilities in term of cinema techniques. But I have not seen any unique formalism originating from this new medium. So the proposal of my thesis project is about looking for the unique and medium-specific storytelling technique in VR.

RL: There are already a lot of VR games and movies out there, and many of them look pretty good to me. Why do you still choose to do this medium-specific research? Are they not good enough?

SQ: There are indeed lots of VR games and movies in the market, and I agree that some of them are amazing. But I do not believe that they have fully realized the potential of VR as a medium. The word "medium specificity" is a term coming from media studies. It is a concept that there is something that could only be achieved by the certain medium.

RL: So you are saying that the most projects out there are made not just for VR but for the more general platform?

SQ: Yes! Yes! You know that the commercial use of VR is a really new thing. Most of the works in VR right now are still based the concept of other media.

RL: They are transplanted from one medium to another?

SQ: "Copy and paste!" That is the word that I would use. There is no reason for me to buy a VR headset since I could get the similar experience on other platforms.

RL: Can you give me an example of those "copy and paste" projects?

SQ: There are many games that have both the normal version and the VR version. For example, the Resident Evil 7 that was released in 2016 came with a VR version in PSVR. But the game creators still designed the whole game for the sake of the traditional console gameplay — sitting in front of a monitor with a game controller. So playing it in VR does not add any new gaming experience but only nausea.

RL: And the VR headsets are so expensive...

SQ: That's true. Some people tell me that my work is actually about how to convince people to buy a VR headset.

RL: Haha. Ok. Apparently, you have a VR headset yourself?

SQ: Yes, I do.

RL: What have you done with that already?

SQ: As you mentioned, the VR headset is not cheap, so I cannot waste it. Every time there's a new VR game and movie or a "VR experience" coming out, I will buy it and have a try.

RL: How much money have you spent on it?

SQ: Hmm… I guess I could go to see another fifty movies with that money? But I am not only spending money and watching stuff in VR. I have also done some experiments by myself. I think those experiments are kind of straightforward. Since the cut is the filmmaking technique that fascinates me the most, I have tried several kinds of cuts in VR, like putting two random VR sequences together. I am trying to find out if cut works in VR or if there is a parallel cut technique in VR.

RL: That's an interesting experiment. But I have a question first. Is there any other reason for you to start with cut other than your personal interest?

SQ: You know that the film was invented in the late 19th century, but people did not use the cut in the film to tell the story until decades ago. So during that certain period before the invention of the cut, people just did not know what to do with the film. Then a Soviet filmmaker called Lev Kuleshov did an experiment. He put two completely different images together. Let's say a girl and an apple. Then he found that nearly all of the people could understand that the girl wanted to eat that apple. He basically found the montage which is arguably the most important language in filmmaking. People do not invent the language of cinema. The language already exists in the system but there has to be someone to find it. Kuleshov started his search from the comparison between the motion picture and the theatrical plays. So I want to start my search based on the language of other media also.

RL: You are doing experiments in VR by comparing it with the film. We all know that film has originated from the physical celluloid while VR is a completely digital and virtual thing. Are you afraid that VR will lose its meaning because of the lack of objectification?

SQ: I do not think so. First I am a digital native who missed the boom days of the celluloid. I have never considered something less meaningful if it is created by code. When talking about the medium, we all know that it is wrong to solely associate with the content. Then why do we have to limit our perception of cinema to the specific apparatus?

RL: Can you give me some examples that you made?

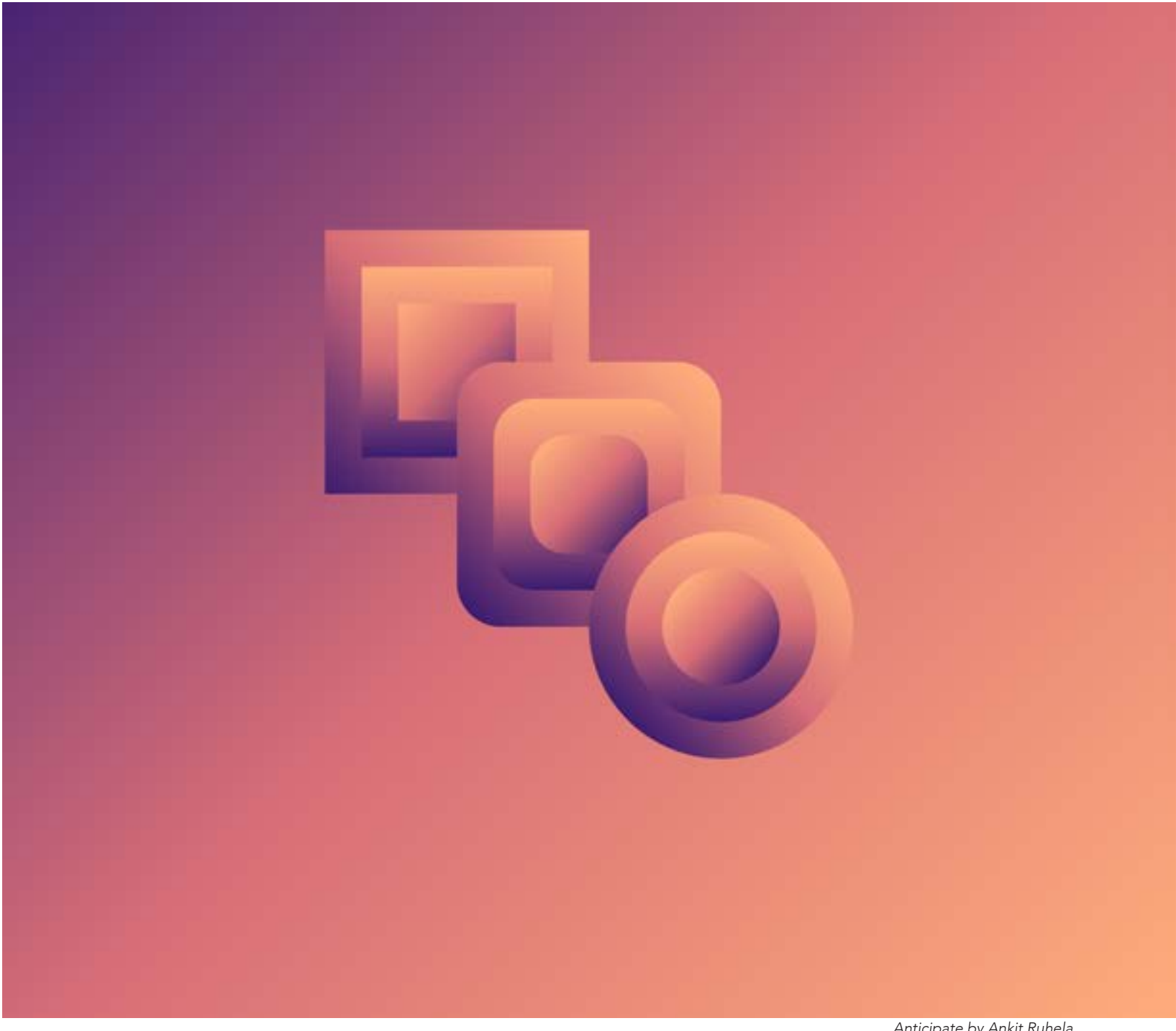
SQ: Yeah. The first experiment that I made is the Trainspotting scene in VR. Do you know that Trainspotting scene where the character puts his head into the toilet, and suddenly he goes into the ocean? I have tried to mimic that experience in VR. When you put the headset on and put your head into the toilet in VR, you will suddenly go into the ocean by yourself.

And another thing I want to try is to show the different contents on each lens in the VR headset. It is the situation that basically could never be experienced in real life where a cube appears on

your left eye, and a sphere appears on your right eye. The result of the experiment is pretty weird and but not unacceptable. Although there are many people have done the similar optical VR experiments, most of them gave up because of the little sickness it causes. I want to push this idea a little bit further, to see if we could tell a story with such a unique way in VR.

RL: Looks like you are doing a lot of work! Do you have an ideal picture of what your project is going to be?

SQ: But you know it is my last year in college, and I could also say it is probably the last period in my life where I could create whatever I want without the considering about the money or other many factors. So I have not really thought about the result of my work. It is very likely that I ended up with nothing satisfactory in finding the new way of VR storytelling. I just want to do it because of my interest in so-called medium exclusivity. I want to choose some projects that I will not regret by doing after my graduation.



Anticipate by Ankit Ruhela

Ankit Ruhela

Intelligent Design Systems

Question: How do we design an experience that can anticipate what the users want?

Statement: With Artificial Intelligence growing faster than ever before and the advent of conversational interfaces that make getting tasks done more natural as one would when talking to a friend or a colleague, our systems need to take care of users in a way that is sophisticated and well thought out. Anticipatory Design is that route which will allow users to do more with their daily tasks and activities with the system taking all the cognitive load ahead of time and providing strong, consistent and actionable results for the users.

Anil Shenoy : Why are you focusing on enterprise so much when there is so much you could do as a human for the world? What is your primary motivation?

Ankit Ruhela: People talk so much about corporate greed and how capitalism is destroying humanity, and while I have my problems with capitalism, I don't exactly intend to abolish the system. Yes it is old and brutal and inconsiderate in many aspects but what I aim to do is try to bring a wave of change in its core principles - because who said that it will always remain the way it was defined. Our generation, and the ones that come after us, are people who value emotional and empathetic values more than anything. My primary motivation is just that - bringing in emotional values, to take all that firepower and ammunition that is provided to capitalism and use it to create a better world for everyone around us.

AS: Do you think that these organizations would be invested in this idea, now or in the future?

AR: Oh, I don't have to ask them to be, or show them the potential. They already know. They are invested in these ideas as we speak. All I am doing is taking it on with a different perspective that really aligns with all that I just said. It's about the user, always, and if I am able to create a vision that aims to resolve problems for differently abled people, allow new design trends to be predicted using past behavioral patterns, assist with simplified user flows in digital products and experiences for people who don't have the expected understanding levels, then I am sure the corporates are going to be highly interested. UX Design needs to change the way it functions as new technology develops over time.

AS: Which enterprise, according to you, is doing it right?

AR: Microsoft, if you ask me. You look at Microsoft's history and how they used to do things and the way all that has changed. Under their CEO, Satya Nadella, Microsoft is bringing in those emotional values into the corporate world. They are putting up policies that are employee friendly, and also policies that are consumer friendly. We are no longer in a world where making a fool out of the end consumer is going to work. People are getting smarter, technologies are getting smarter, and so the corporates have to become smarter, and the first step towards that direction is caring about those people who keep the company afloat. I have been a Microsoft user since my early childhood, it's because of the technologies they brought in during that time that I am what I am today. I follow them religiously, and if you did too, you'd know about the Windows Phone fiasco. They basically got wiped out by the competition, but the way they came out of the entire problem was really graceful. They embraced their failure, understood that you cannot fight off everyone and everything and instead refocused their efforts on what people love to use - Windows on PC; the Windows Insider program is a prime example of that sensitization.

AS: Are you not satisfied with where UX Design is already?

AR: Sure, I am. But my intention is to plan for the future, because with every passing day, the present becomes the past and the future hits us with new problems that much faster. Think about AR and

VR, these are technologies that are brand new to us, and designing their user experiences, we are leaning on the traditional methods that come from rectangular screens. When machine learning and artificial intelligence becomes mainstream, we'll have to think about all of that again. Creating a planned route for better scalability to such computing blockades is what is lacking in the UX Design field, because eventually when quantum computing comes around, we'll have to go back again to fix problems we didn't think of before. I want to instigate this forward thinking capacity.

AS: You are articulately optimistic, but drilling down a bit more in your concept, doesn't inclusion of machine learning and artificial intelligence in code already allow design to evolve with the audience's use? Why indulge specifically in "Machine learning for Intelligent Design Systems"?

AR: These concepts are primarily thought of as mainstream computing problems. But as these concepts grow and come close to becoming a reality, designers who work with developers to create a coherent product need to understand and further extend the potential of these technologies. If a developer uses machine learning, the designer needs to know how it functions in order to be able to provide a curated experience around it - and this is where intelligent design systems are required. A space where it can aid the designer, the developer and the end user to be able to do more than they could think of.

AS: That makes sense. How long do you think will it take for design to incorporate this approach?

AR: It is not about how long it takes. It is not a project with a deadline per se. It is much more than that in the sense that it is an ongoing process. It keeps evolving as more and more data sets are available to find patterns that we don't yet see and therefore, incorporating this approach will keep going on. It is a continuum.

AS: Don't you think your approach would kill the design jobs that you yourself aim to be a part of?

AR: Well, that is a question everyone loves to ask these days. But automation is not new, it has been around since the dawn of time. Think about when the early man invented the wheel and how it took over other means of transport eventually. Think about fire and how it changed the way we eat the food everyday. Humans are an interesting species, and one thing that our ancestors have taught us time and again is the simple fact that we will outgrow and outlearn any automation. It pushes us to get more creative and proactive with what we can do with what we have. My opinion on AI and ML is an optimistic one, these concepts are not intended to replace humans, it is to be used to amplify their work and therefore allowing the end user to conquer whatever they wish to do in a more optimized way.

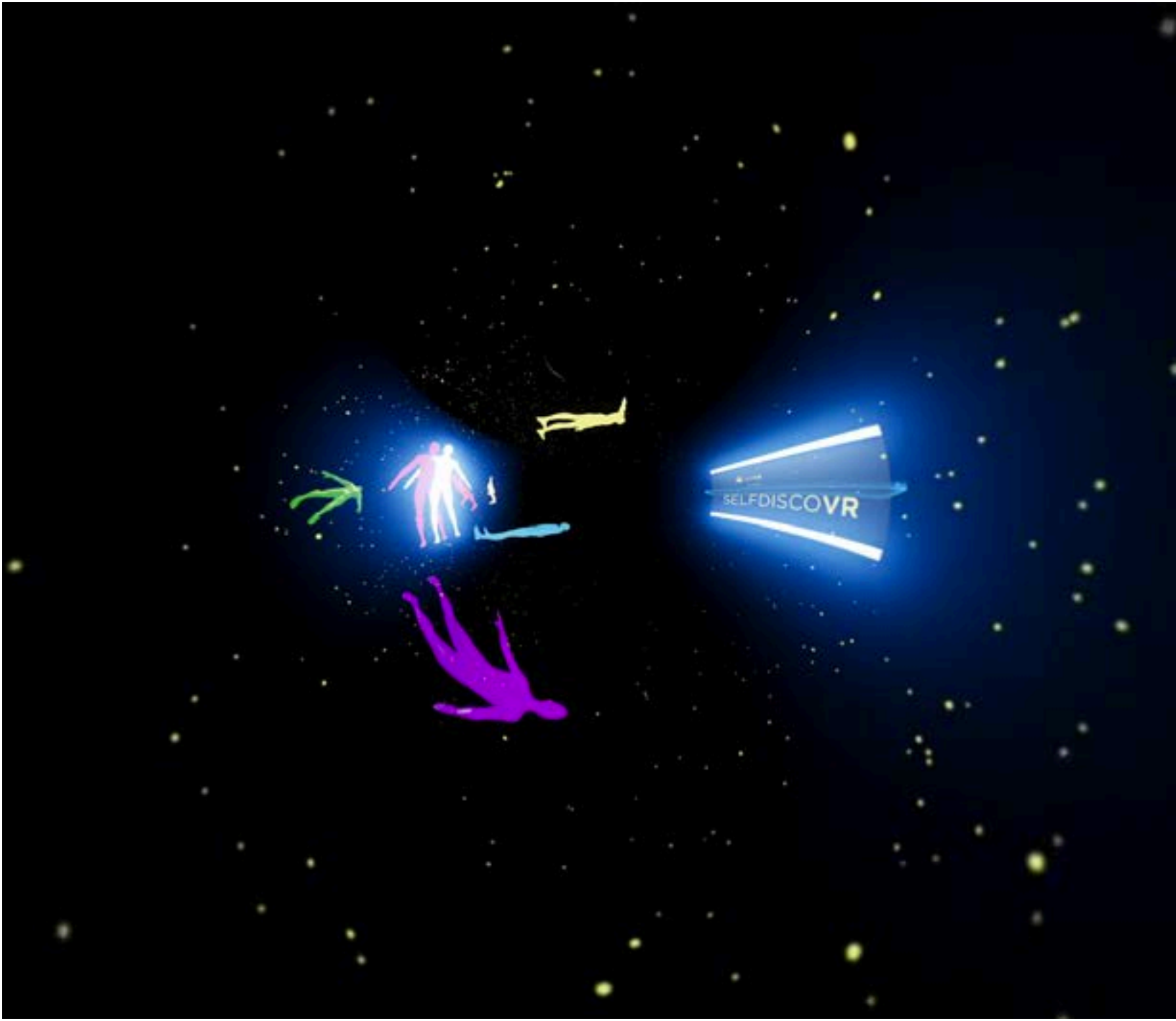
AS: Right. So what do you think about the end-user? Do you think people should or would allow such intrusive methods that are not apparent and run in the background without their notice, absorbing all that personal data?

AR: Well, for starters, the data is anonymous, and then the idea is not to steal their data and make profit off of that just to eventually harm the end user. The idea is to use those little bits of information that you and me and everyone drop off everyday over the internet and harness its

power. The telecoms do it already for example, but do we mind that? I don't think so. But if we make a conscious effort to provide curated experiences for people that help them become more productive everyday, allows them to augment their tasks and complete them much faster than they traditionally would be able to do, then we are going in the right direction. And I emphasize again, AI and ML concepts do not have to replace humans, they should be intelligently used to amplify their work.

AS: Great. Well, I hope this vision you have takes you places. Good luck for your thesis defense next semester.

AR: Thank you!



SELFDISCOVR: Intro to WAVR's Second EEG/VR Experience (Original Content)

Baris Siniksaran

WAVR SELFDISCOVR

Question: How does the change of perception in artificial realities affect the evolution of the human brain?

Statement: Despite the many benefits of the technological advancements we are experiencing in the healthcare industry today, the human brain still suffers from daily personal constraints that prevent it from functioning efficiently. We all experience psychological and emotional hold-ups such as anxiety, insomnia, paranoia, ADHD and OCD on a daily basis to a certain extent, which constantly pulls us back as we try to move forward in life. What if maximizing brain performance and providing a constant positive mood by neutralizing these limiting factors was as easy as altering a person's perception of themselves and their own life through an alternative reality?

WAVR is a brain-powered VR experience that stabilizes the user's mood and maximizes brain performance by analyzing and responding to the brain's reactions to certain thoughts and memories in real time. As the user follows the commands in the application by thinking of certain people, places and/or past events while staring at virtual objects, the software constantly monitors the fluctuations in the user's alpha and beta brainwaves. Depending on the way how the brain reacts to certain thoughts, the virtual objects start changing shape and color, revealing the emotions that are triggered in the process. This data is later on used to help the user realize and overcome what in their subconscious is actually causing them to suffer from a negative psychological state.

Asli Caglar: How would you describe the idea behind your project in one sentence?

Baris Siniksaran: WAVR is an EEG/VR technology that aims to maximize brain performance by eliminating psychological and emotional constraints through change of perception.

AC: How did you come up with this idea?
BS: I have always wondered about the possibility of empowering the human brain by eliminating the internal factors that prevent the brain from functioning properly. While taking VR and EEG related courses at NYU IDM and ITP, I was fascinated by the idea of imitating supernatural abilities with the help of these technologies, such as moving physical and virtual objects using mind power. That is how I started working on the first prototype of WAVR.

AC: What problem are you trying to solve with this project?
BS: The decisions we make in life are highly manipulated by the way are expected to see reality, while it is constantly filtered by the values of family, society, media and history. The majority of the people living on this planet are clueless about what questions to ask themselves to even start discovering who they really are and what their purpose in life is. From the day we realize we are assigned a role in this society, every action we initiate is somehow motivated by our reaction to the others' expectations of us fulfilling this role. What we call "reality" is only a portion, or an interpretation of the ultimate reality. I believe that it is possible to help people change the way they see reality by altering their perception of it in an artificial reality. The goal of this project is to maximize brain activity by helping people expand the boundaries of their reality.

AC: Why do you think it is needed for people to expand the boundaries of their reality?
BS: I think this is essential for a happy life and for a well-established society. Our purpose on this planet is to explore and it all starts with with self discovery.

AC: How many prototypes have you built for WAVR so far?
BS: I'm currently working on my second prototype.

AC: Can you tell me a little bit about your first prototype?
BS: With the first WAVR EEG/VR headset prototype, our goal was to determine whether it is possible to "train" or gain ultimate control of the human brain by mimicking psychokinetic activities in alternative realities. WAVR measures the fluctuation in the alpha brainwaves and generates a simulation in virtual reality depending on the current state of the brain. For instance, a person who is able to go into a meditative state (where alpha waves are at high frequency) ends up generating a peaceful atmosphere in virtual reality: models of sunny weather, trees, a soft breeze, etc. On the other hand, if the EEG data reveals that the user is in an agitated state, the user experiences a gloomy atmosphere: foggy weather, thunderstorms, earthquake and unpleasant sounds. By asking users to try and change the atmosphere in VR by thinking it, we aimed to alter and improve the current state of the brain.

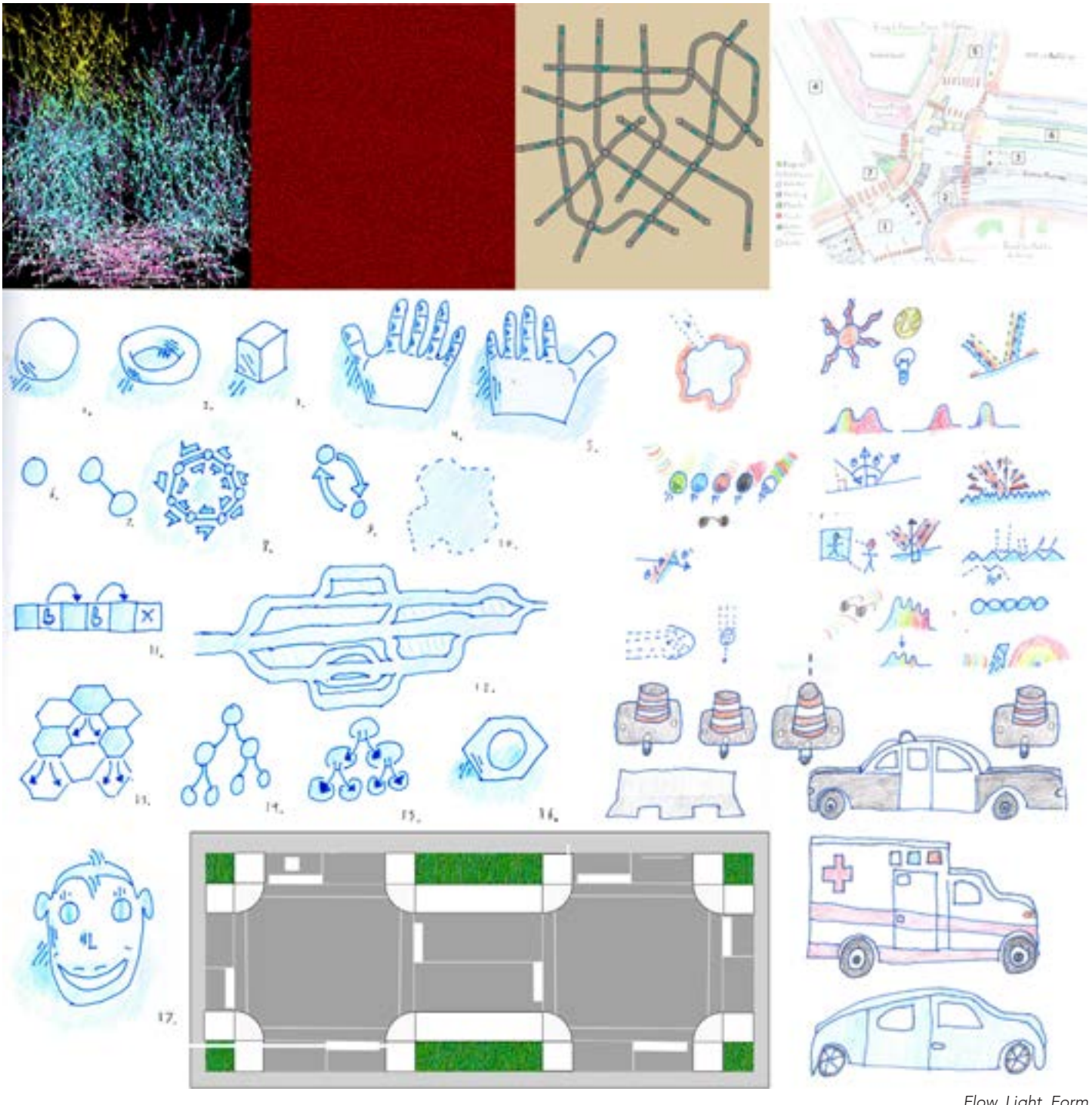
AC: What is different about your second prototype?

BS: The new headset will be using a 14-channel wireless EEG technology, which will allow us to detect and analyze emotions. We are trying to help the users internalize the experience through a minimal user interface this time for better results, rather than telling the user what to do like we did last time.

AC: What types of questions came up during the ideation process of your project?
BS: A wide range of questions came up during the ideation process, and more questions still come up on a regular basis. The initial questions I had in my mind were mostly related to the way the human brain functions and how it can be controlled. I also had questions about how perception affects the physical nature of the human brain. I am currently doing research in many areas including meditation and mindfulness, concentration techniques, alternating perception and self-discovery. On the other hand, a technical set of questions came up as well related to how to combine the VR headset with the EEG technology.

AC: Who is your target audience?
BS: Our initial target audience is people who suffer from psychological and emotional conditions that prevent their brain from functioning efficiently, such as anxiety, paranoia, insomnia, ADHD and OCD.

AC: Who are you planning to test your prototype on?
BS: We are more than willing to test our prototype on anyone who is interested in the concept of maximizing brain performance through alternating perception. We need to keep collecting data in order to make improvements to the software, therefore we need to test our prototype on as many people as possible.
AC: What are you aiming to learn from this project?
BS: We definitely need a deeper understanding of how the human brain functions in order to develop a technology that changes people's lives. We need to test and analyze the way the brain activity gets affected while under the influence of an alternative (virtual, augmented or mixed) reality. We also need to do further customer development and identify the personal constraints people encounter on a daily basis that diminish their focus and brain performance. We will be conducting interviews with people suffering from anxiety, insomnia, paranoia, ADHD and OCD. We will also be doing wide research on the history of meditation, neuroimaging, psychokinesis and virtual reality in order to conceptualize our idea further. We will also be conducting interviews with makers of the EEG/EMG microcontrollers on the market in order to understand the true nature of the BCI technology we are currently using.



Bryce Summers

Assesible Argument Documentation

Question: How do we design and assess a computer game that scaffolds constructivist learning about multi-modal transportation networks for a user whose life is impacted by their design, but who has not formally studied them?

Statement: I want our society to someday have a computer science education system that provides students with more opportunities for problem based learning, personal exploration and where an equal or greater emphasis is placed on learning subjectives compared to learning objectives. I want people to go through it without losing touch with their motivation and in a more emphatic manner. To accomplish this task, I believe in the use of media and art forms for learning. Some of my favorites include computer games, animation, graphics novels, musical theater, tabletop games, and coloring books. For this year, I have chosen to concretely focus on multi-modal transportation networks which are emblematic of a ubiquitous concept that many people develop beliefs about, but which are shown to be naive under a deeper understanding of the findings of the field. I also like that transportation maps quite well to the field of computer systems. My game design will be informed by the methodology of formative assessment.

Sara Camnasio: What is your interest that you are developing in pre-thesis?

Bryce Summers: My interest is in teaching per say and learning. I guess I have an interest in how much brain processing power people need to use when they are taking part in an educational experience.

SC: So is that the broad interest that you are exploring?

BS: I guess the more specific would be the production of teaching materials that can lower the cognitive costs, such as by making computer games and types of images and visual design.

SC: What do you mean by lowering the cognitive costs?

BS: In my experience, every time someone asks me to think about something like lots of the math classes, it is rather painful to me. I guess my theory is that their are certain times when someone will ask me to think about something, such as when I am in kindergarten and I've never learned arithmetic before and there are other times when I have already learned something and the teaching experience doesn't really respect the level of abstraction that they are trying to teach me at. So something is trying to teach me a new theory of linear algebra or a pre-thesis class or something and often I'm not spending much time thinking about the new thing, but instead I am thinking about the mechanics.

SC: The mechanic of what?

BS: The mechanics of learning. How do I move my pencil, how do I hop on a bus to get somewhere.

SC: So does the inspiration for this project come from a personal experience or the way that you have experienced learning yourself?

BS: Yes, it comes directly from personal experiences. Quite frankly, I'm trying to find where the gaps are between what is a more objective contribution and what is the part of my learning experience that I did not like in some of the personal experiences that I've had. I'm wondering if it is just me, or is there a contribution to learning theory to be made. Academically, I've gone through a computer science school, but culturally I didn't bond with very many computer scientists. I bonded more strongly with the artists that I met. I don't know if it is how their minds are wired or their interests but I seemed to bond with them and I met many artists and designers who wanted to know how certain types of science works like how algorithms work, fundamental physicists, or computer programming principles, because they can see how it would benefit the work that they would like to do. People who are critical of technology would really love to make technology, because it would allow them to critique it more strongly. Lots of these people, I don't think they are lazy per say…

SC: Are you thinking that the final product will be a framework for learning?

BS: I'm trying to make a methodology for making what I call abstract playgrounds.

SC: What do you mean by an abstract playground?

BS: You make a space with constraints, where the person is given tools and helpful computations that help them go to the level of abstractions that the playground is based on.

SC: Do you have a concrete experience based on your experience that you would like to test this out on?

BS: A concrete concept would be learning how the field of computer graphics works.

SC: How does that relate to abstraction?

Bryce: That kind of segways into something else that I've been thinking about. People often have trouble getting past their subjective viewpoint metaphorically, but in computer graphics, then have trouble getting past their subjective viewpoint literally. People see the world coming in, but it is hard to go to thinking about it as a bunch of photons bouncing around in the world. So, you see like a spherical object to thinking about the materiality, the geometric form of the spherical object, etc. For my visual experiment, I broke down the concept of lambertian reflectance.

SC: What is lambertian reflectance?

BS: Have you ever used a 3D modelling program?

SC: Like Tinkercad :)

BS: Yes, like Tinkercad. Have you noticed that it is darker on some sides than others and that is what makes it look 3D like? That is an example of lambertian reflectance, which is a model for how diffuse light works. I saw pictures using lambertian reflectance for years, but I didn't understand how people were making those pictures of what it really meant. In my visual experiment, I broke it down into 5 or so phases. I wanted to take the subjective view and break it down into various more objective views of related concepts. I want there to be more views per say.

SC: So, how are you going about this project. Where are you now and what are your next steps?

BS: For this project, I started about a year ago and started making some concrete prototypes. You might call this my art practice. There were some projects a year ago that I really wanted to go and make and I didn't worry too much about why I wanted to go and make them. So, I started making a graphic novel about computer graphics that I am now a year into. I've got a collaborator now as well. This year, I'm working on more of the theory. Making these projects is a good place to test out these theories, but now I'm reading the literature and working with a professor named Jack who is a Transportation Engineer, but most of his research these days is on engineering education.

SC: Since one of your questions that is outstanding is, "is this a real problem", how are you going about exploring that question, are you researching learning literature and education literature, or are you talking to other people who might have been in computer science or even the artists that you mentioned, who might have a different learning ability or mode. What are you doing to explore that question?

BS: I think I ought to go talk to more people. I'm not really sure how I'm going about that problem. I don't know whether people don't learn these things through a pseudo lack of interest or do

because they stop being interested, or whether it is too hard, or they encounter obstacles either logical or emotional that they do not want to go past.

SC: That is a really interesting take on it, because it adds a human layer to it, because it seems like what you are interested in touches many technical aspects like the human brain, how we learn, or education itself and the mechanics of it, or the specific concepts of computer graphics or computer science that you were talking about, but maybe this other exploring why people stop learning would add to the human interest part of it. Are you interested in that at all?

BS: In some of the illustrations that I'm working on, I'm saying that we need to show three parts when you show things to people, the feelings of something (not everyone's feelings, but some sort of emotional layer to show that the concept is worth caring about, such as what was Newton thinking, don't just show formulas and numbers.), then you have the meaning layer. There are pointers and values, I could say the name Sara, but then there's the person who the word Sara refers to and what the word Sara means.

SC: Ok.

BS: Inside fields such as Computer Science, there are software engineers who never get past the names of the names of the libraries and software packages that they use, it is kind of like a black box, and that is the entire point, but when you are learning something, to the students, it's like a black box and you don't want to tell them what the black box is called, but instead tell them what the insides of the black box mean.

BS: The last part is social norms, like words, language. It is important to tell people what the black box is named, because we have these social norms for a reason I suppose, but I wish we could use them less.

SC: Same. You talk a lot about Computer Science, what inspired you to go into Computer Science in the first place?

BS: When I was younger, I liked board games, because there were rules and I played every sport under the sun. I played baseball, ultimate. I think I liked playing them because they had rules. I don't think that I was the best at socializing as a kid, but if you put rules in place that made it so that people had to behave in a specific way, I think that was very appealing to me. Sports and games to me, I see things very abstractly, and sometimes I don't see a difference between things that people around me say are very different, so I also like Computer Games, since they have rules too. I liked being around Computers and computer games. I believed very strongly that if the world was making these things that I enjoyed using, then it would be rude to not go and contribute my own, because I didn't want other people to have to do the hard work of creating these joy objects, and me simply consuming them. I wanted to contribute, or else it would be wrong. I wanted to learn computer programming, because I wanted to make a computer game, and it seemed like Computer games were one of those things where you can make a living by just inventing rules and where you can bring your entire self to the endeavor.

SC: So, would you say that you are more comfortable with rules, than without rules?

BS: I don't like following rules, I just like rules.

SC: Can you comment on the struggles that you've personally had with learning computer science?

BS: I don't know if you would call it struggling, it kind of happens with whatever I'm learning, part of it is that learning is hard.

SC: What would you say is the relationship between rules and learning, would you say that rules are good? Are rules good, are rules bad, or with whatever you are creating, would you like to create more rules? Or less rules?

BS: I want people to create their own rules. I think that people have subjective feelings, like doing one's homework on a Sunday, rather than a Saturday, works out better sometimes. I find I learn the most when I am creating things, I guess my answer would be that I want less rules. I don't want authority figures making up rules for what I have to do. I like it when they guide me towards something interesting to learn, but I don't like it when they give me an assignment and tell me how to do the assignment.

SC: What if the only rule is for people to make up their own rules? Then would rules be okay? Would more rules be ok?

BS: I guess from the point of view of a game that you want to have this perfect amount of rules that the player gets to the learning objective, but you don't want the rules such that they start getting miserable. I feel like learning needs to be like that too. If there were no rules, then I wouldn't have learned all of the things that society thought was important for me to learn, but if there were less rules, then maybe I would have had a better time? Or maybe I would have learned more? I don't know.

SC: Taking it back to the pre-thesis project, what do you think will be your output? Will it be a physical prototype, a written version of a learning methodology? Are you in that space yet, thinking about the product you might want to make?

BS: I think that the research project will be a paper outlining something to do with a learning methodology and then there may be some concrete applications of it.

SC: So are you more interested in the academic research portion of this project?

BS: No, but in order to graduate, in order to economically support myself with the interests I have, it is important to conform in some ways. Ideally, I don't know where I'm going with this, but we would have a world without research papers, we would have research communications of something, but that would be strange too, because once people start speaking the same language, papers are very good ways of communicating with each other, but usually people don't speak the same language and so usually they are not good ways of communicating with each other.

SC: So are you trying to tackle that communication problem with this project as well?

BS: Well, I'm not sure which of these that I will tackle with this project. Some of them I'm going to wait until next year and the year after, I'm trying to focus on something that I can tackle this year. I'm working with Professor Jack and we are going to think about what is one particular example in

Engineering education, where we can decrease the cognitive load.

SC: Since you are in a media program, how can media help reduce the cognitive load?

BS: My way of thinking is that media reduces the cognitive load through computation and indirectness sometimes.

SC: How so?

BS: In terms of learning procedural things, if you use a computer then the computer can automate all of the levels of abstraction below the one that you are learning and I made a prototype of this related to linear algebra, so that is how a computer helps, but media more in general is this indirect layer between people. Lets say that I wanted to learn about male people or female people, I could stare at them on the street, but I feel very inhibited, because I don't want to stare at them because then they might punch me, because there are things that you might want to learn through media, but traditionally media like film and other things allow people to learn about each other, without encountering the social norms or in person interaction. Various media when used really well, although it can be used for evil as well, it can be used to teach different cultures about each other without them meeting. It is a communication mechanism where all of the people in the world are informed of the other inhabitants. I find that the media hasn't been used very well at all in more of the technical disciplines. I've found that they've used it a lot for sharing thing slike emotion, sharing ways of cooking, and very concrete things. I've found that media hasn't really been used to show abstract things.

SC: What media are you thinking of using, do you have any preferred medium?

BS: I like the image and I like the computer game.

SC: What do you like about each one?

BS: I also like the story for that matter, but I like the image because I feel like the image speaks in terms of meanings rather than social norms. I like the spatial layout of concepts, because it feels more real than just telling the name of the concept. I like to put a face with a name. I like the computer game, because it is subjective. The person can provide inputs to it and control whether they are going too fast, or too slow. I can show them a sequence of images, instead of just one.

SC: But isn't the image then a pointer or a blackbox of its own that you will have to unpack, because all of the meaning in this image might not be accessible to everybody? How are you going to go about tackling that?

BS: I think that is where game design comes into it.

SC: So you are going to combine the image and game design?

BS: My role is to develop the person's curiosity. I don't need them to use the image and understand, I need them to get the glimmers of understanding that they don't know something. I want to activate some sort of curiosity and provide the gameplay experience and abstract playground that facilitates them going and asking these questions and they keep on going through this playspace until all of the

connections have been made, so like in the field of computer graphics there are 6 different disciplines and every concept is very interrelated. In my opinion, every concept is very simple, but most of the meaning comes from knowing the orientation of the concept. Each meaning has 6 things that it depends on and its this monster web and it takes a long time to figure out all of the connects and find out that that concept is equal to this combination of these 6 other concepts.

SC: Can you give me an elevator pitch for your goal for this project, like a really quick this is what I want to do and why it is important?

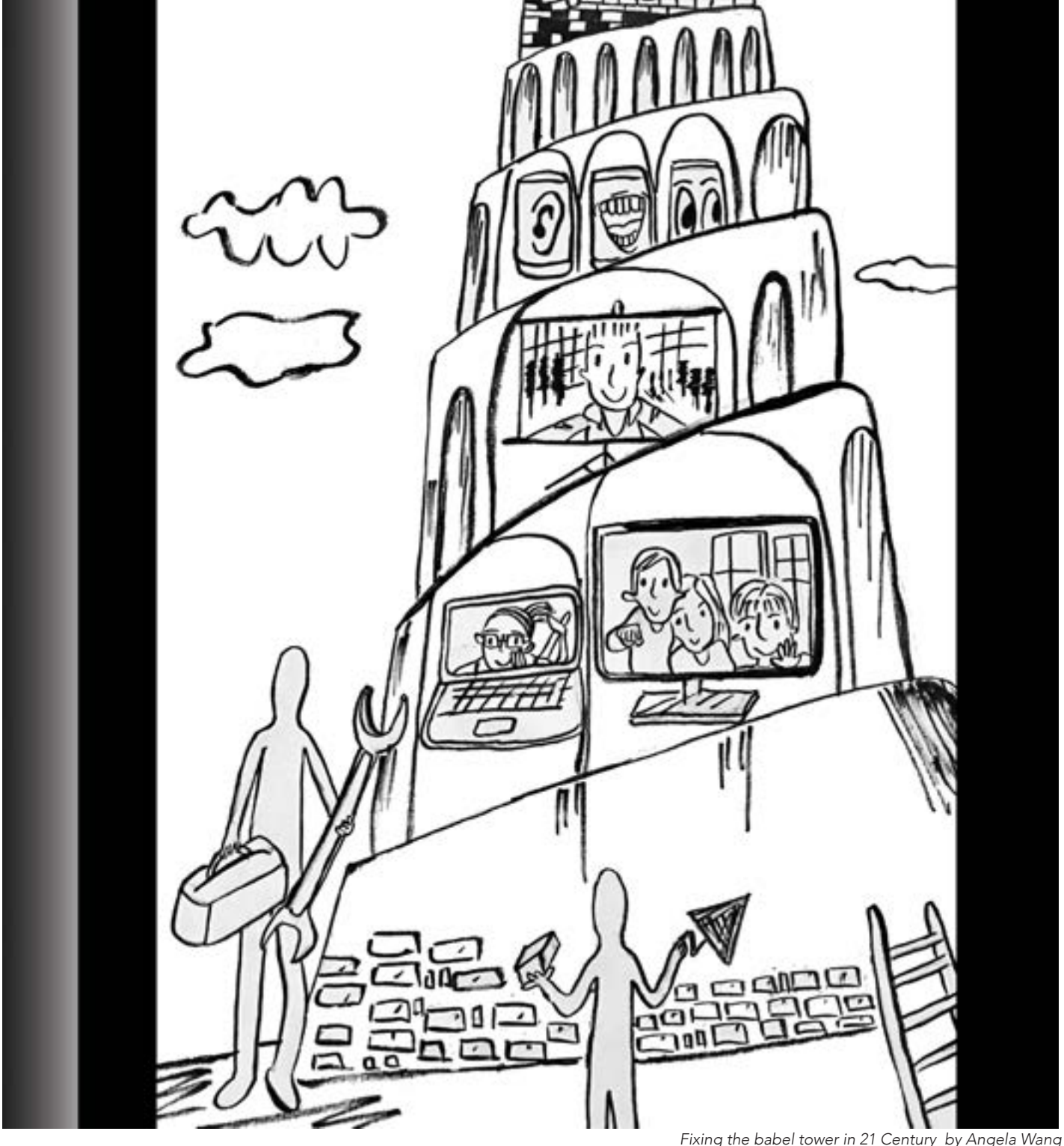
BS: I want to make fields like Computer Science more accessible to people.

SC: By creating abstract playgrounds?

BS: Yes, by creating abstract playgrounds.The reason I want to do it is because, these are some of the things that I love the most in life and I can't stand not knowing too many people who are seeing the beauty that I am seeing. I want to be able to talk with my friends and loved ones about more of the things that I care about. Thats why I want to do it.

SC: That is a great elevator pitch.

BS: I'm now thinking of creating new mediums. Mediums that facilitate the communication of algorithms



Fixing the babel tower in 21 Century by Angela Wang

Angela Wang

Gap in Perception

Question: How technology changes what is possible in building healthy perception information models for effective communication.

Statement: Using Focus group, literature review, and prototyping experiences. I will explore how technology changes what is possible in building healthy perception information model for effective communication. A healthy model can use information-rich communication to put a person at ease. When the telephone was first introduced in the 19th century, there was no etiquette in phone conversation; it was adapted as we called more often, and as more people got telephones. Etiquette is a learned behavior code that outlines the expectations for social behavior within society. When we established etiquette, it created a standard for reference. With a fast pace in 21st century, we are being introduced to more digital ways of exchanging information with no obvious etiquette as reference. I would like to begin my exploration by collecting scenarios when communication breaks down in technology, and then document both the information receiver and the sender's visual interpretation. I will also work toward building a healthy visual perception model for effective communication through the investigation of Bruno Latour's Actor Network Theory.

Edward Bear: Hi, my name is Ed Bear, and welcome to the cafe in London with new friends. My guest today is Angela Wang from NYU, and we are getting coffee. I met Angela at a workshop, and she is here today to have me ask her a few questions. So…what have you been working on lately?

Angela Wang: I'm working on a topic. It's about perception, and how we should establish healthy perception before we get into technology. My emphasis is on healthy perception because when you feel bad, you know something is not right. But when you are comfortable, you don't necessarily know how it feels. What is perceived as healthy in communication? I would like to examine both good communication and when it breaks down.

EB: When I think of perception, I think of an interpretation of, like, the world around me, or an event. Is that what you mean by perception?

AW: Yes, for the most part. I mean sensory perception, like touch, feel, and smell. To find a way to create a healthier perception, a healthier way to interpret what we observe, smell, and touch. It is a complicated subject, especially when considered in the cultural context. Yet, here is an example of how I started the investigation. When we are sitting together to dine at a table, we have learned etiquette. When on subway, you shouldn't man-spread and take up more than one seat while sitting. This is a sign of what is right, not necessarily what was known-- that is why we have so many signs and instructions in our daily lives. But if we establish for each person, in regards to what is wrong or what is right, a guideline when perceived through each of the senses, similar to etiquette of how to take in and speak out, then we can also better use technology for communication. I am going back to basic etiquette 101 in the 21st century.

My goal is to collect examples; at this stage, I would like to identify what sound and distance we are comfortable existing in. For example, if there are two people talking, what is the voice volume they should use and the distance they should be from the other person based on the context of the meeting? How would this work on the street versus if we are talking in a restaurant? If we have guidelines of what is acceptable, possibly through technology such as video chat, the etiquette is transferable. Language is part of our education and knowledge formation, but sensory perception is the topic that I would like to explore.

EB: Is your ultimate goal to create something like physical spaces that we are in?

AW: Yes, physical space first. My intention is to better intervene with technology once we have the foundation. One thought I had in mind is that design should have the ability to be updated. Like law, is should be constantly amended accordingly to the needs and changes of context.

EB: Sounds like a good reason to want to explore it. It being perception and its relationship to modernity. To what's new now, a different now from maybe 30, 40 years ago. But what is your work really about?

AW: Really about? Well...more specifically it is about effective use for communication through technologies. I am most interested in networks

such as phone, internet, chat, etc. Have you ever received a message but you don't know how to answer?

EB: Yeah. Every now and then.

AW: And have you received a message but you probably don't know what the person means?

EB: Of course. Yeah.

AW: Ok. I don't know if it is the same for everyone. But with technology, I receive even more information and more messages like that. And I don't have the capacity to process all of them. I witnessed the process of the change, when I was in elementary school; there were few mobile phones, and no smart phone. We called each other using land lines and talked through that, but now it is just constantly chatting, and I find it disturbing. Because I don't know what that person means, if they just want to hang out or if they really need help. So I kind of miss the old school face-to-face communication style. But at the same time, fighting this is useless. The world is just as it is. It is me who has to adjust to the change. I wish I had someone to walk me through this, tell me how to properly handle these messages. I learned a little bit through work, because I was in the financial world and every message we delivered was constructed in a certain way. I had to say things right on the dot. There was no room for extra words.

EB: It makes sense from your childhood, why you would choose to work with this topic. But what are your influences other than your previous work in the financial world? What other things about your life and or about the world influence you to do this research?

AW: Growing up in the 90's, I observed the takeoff of technology. I know what to do with a landline; I know what to say on the telephone, if I don't know, I tell them, I will call them back. I am not the same through email or text. Regardless of how I deal with technology, email is the most efficient way for communication according to the articles I read lately. I have to keep up with the trend, and be familiar with new tech. We all have similar situations with text messages. Because we don't hear the tone, we don't know if the person is angry or there is a typo. But it is getting harder and harder to talk on the phone. Because the connection is not good, you are talking on top of each other; because it is going to be choppy, and awkwardly laughing, talking is not a clear way for communication.

If I am using a telephone, I know I shouldn't eat because, the other person can't hear what I am talking about with all the food in my "mouse." This is the standard; even though we do it, we know that we shouldn't. Like Marshall McLuhan, said in The Medium is the Message, "Miscommunication is the scandal that motivates the very concept of communication in the first place."

Another influence for me to investigate this topic is going to different places rather than living in one place, even just traveling for a couple of days. It all shapes how I perceive the world and appreciate diversity. I know I am not the only one who travels. Another incident ties me to this is, one time when I was in Philadelphia, there was a reporter from the LGBT community. He asked me if an LGBT person was being attacked verbally at school, what would I do? Or even if I was the person who was being bullied in the situation? I said, "Nothing. I would just laugh at it." I said I would laugh at it

and it doesn't mean I don't care. On the contrary, I mean only being comfortable by laughing at the situation will get us out of the fighting hole. So this is why I want to learn more and maybe provide a possible model for how to perceive and respond to situations within a technology era like this.

EB: So what did the reporter do? How did this impact you? What happened after the article?

AW: The article was published, I felt that I stood at a different angle than the rest of the people, but I did not feel wrong. I am happy that they included different voices, even though my opinion was different. I did not receive any negative feedback for what I said, so that is good.

EB: So how does it relate to your process, how do you feel like your work currently accomplishes that, and what steps you have to go through to provide alternatives or to explore perception?

AW: Looking back this past year, the work I did in the Integrated Digital Media program unconsciously relates to perception and how to see the world. Like for the Dibner library noise reduction design competition, which I won btw, I offered a solution by making privacy partitions and color-changing interiors to help design a solution for noise reduction. The solution was not some special engineering noise reduction material from the future. It was purely a perceptual intervention. I then conducted user testing, to test how through perception noise could be reduced. And for creative coding classes, I made a piece where when the audience sits in front of the monitor, they will be transported to another memory, by interacting with the system through an illusion. They aren't going anywhere; they are still at the same spot. This is all about visual perception.

EB: Have you ever been surprised by the users? Has any of your work turned out a different way than you thought was going to happen?

AW: Sometimes. Lately in NYC media Lab, I had the chance to demo one of my pieces, which is called "Look into your heart. " In this piece, a participant was asked to hold onto a stick, and once the sensor caught the participant's heart rate, the LED in front of them lit up and blinked in patterns, which synchronized their heartbeat. Then I asked afterwards, what does respect means to them? And then I knew I was probably heading in the right direction. Every 10 minutes, someone came over to ask about the piece, wanting to know what it was, what it did, and if they could try it. Everyone wanted to try it. I also learned from the show that I needed to create more examples of when it was communicating well and when it was not. When I had enough examples from user testing to show both situations, I could provide a better response model to the system.

EB: So it seems like you talk about system and interactions a lot. Why do you choose to work within that framework, as opposed to say imagery or sound?

AW: It is just what resonates to me. I am interested in people's interaction, I like feedback, I like face-to-face communication style. Instead of thinking virtually, I tend to take a step back to the physical world, the physical space. Down the road, it may change, it is just what I am curious about right now. These media and perceptual experiences through physical objects, electronics, and sensory presence: they are real to me.

EB: When you talk about it, you talk about it pretty abstractly; you talk about system, and perceptions. But the media you are working in encourage interactions, performances, and behaviors. I think that there is a tension there. What impact do you see coming out of that, in specifically thinking about their tension? There is a tension there, between presenting it and thinking of it as face-to-face experiential / we are all in this together, real time with flesh and blood versus the abstract, where do you think that is going in the future, what sorts of larger points would you like to make in the future? Is there a reason that the tension is there or does it just happen accidentally?

AW: Probably there is one, or none. I guess, the way to find out is keep making and then fewer people are freaking out because of the panic of not knowing what to do. That is a step further.

EB: What do you mean by people freaking out, are you referring to…?

AW: Like a situation when I suffer from not knowing what to do, in a cultural scenario, or it can be just like breaking something in public and suddenly all the eyes on me. In that situation what can I do? Maybe something funny. I think maybe by translating that into art or installation experiences, I can help express the process.

In the beginning, I was looking into the idea of respect, but from my research I found out that how we perceive a scenario affects our response to it. So how can I construct a healthier system or even a standard checklist? If I can achieve that, it is beneficial to me and hopefully to others. Positively.

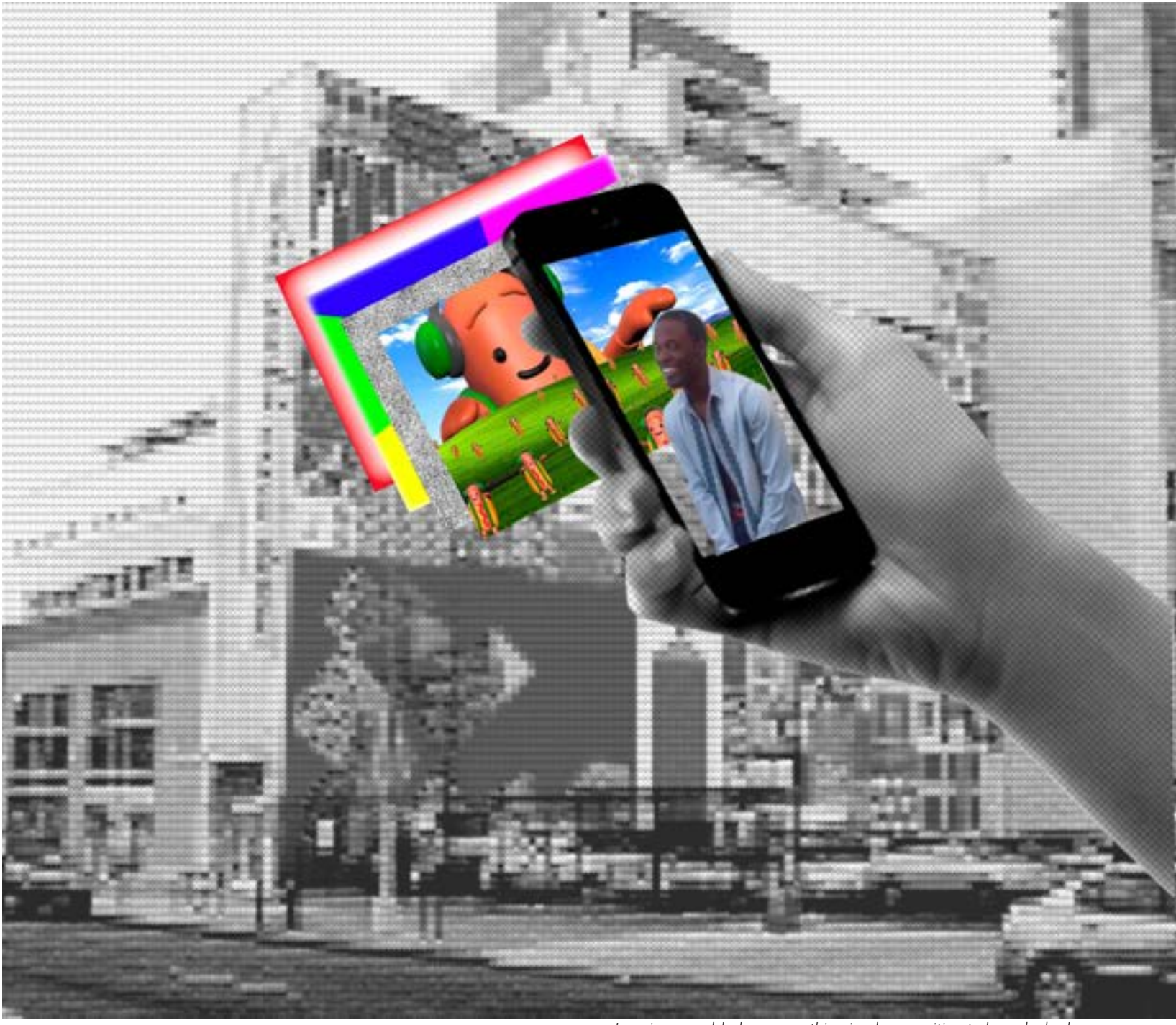
EB: So, where is your audience then, if you have this desire and expectation that your audience will share some of these experiences? Do you think you have a particular audience, or what is this "other people" that you think of?

AW: The first group that comes into my mind is the migrants; where they live is not where they grow up. We shift around a lot, and we relearn when we relocate.

EB: For yourself, for the world? The guideline is for whom?

AW: I am hoping for a bigger scale, but the only way to find out is to test it and I will start from myself.

Photo credit: Bell Telephone System Adverting Print



Imagine a world where everything is a layer, waiting to be unlocked.

Lillian Warner

Internet Memes and Mobile AR

Question: How has the introduction of new social media platforms impacted memes historically? What predictions can we make about how internet memes will adapt to mobile augmented reality?

Statement: I want to design a mobile augmented reality social media platform that embraces the creation, sharing, and remixing of memes.

Emily King: Where does the word meme come from? What does it mean?

Lillian Warner: A meme is an idea that spreads from person to person in a group or culture. Memes can be symbols, trends, styles, pictures, words, and more. A meme is viral. Richard Dawkins, a famous scientist (and atheist) coined the term in 1976 in his book The Selfish Gene. Dawkins used the word meme to describe a unit or thing that can self replicate. He was specifically talking about genes and biological evolution.

EK: What is an internet meme?

LW: An internet meme is a piece of content, usually an image or a video (but not always) that is created and shared on the internet. It spreads from user to user via various social media platforms: Twitter, Facebook, YouTube, Vine, Reddit, 4chan, obscure message boards, etc. A really important component of an internet meme is its ability to be remixed. Remixing is the idea that a user can edit and/or project their own perspective and meaning onto the piece of content. Memes are memes because they're remixable.

EK: Why do you care about internet memes?

LW: They're clever and funny and weird. Or at least the ones that I love. They take a snapshot a moment of culture and allow us to project our own ideas or jokes onto it. And then they become a snapshot of the culture or zeitgeist at that very moment. They're very specific and very telling. I like that you can speak visually and textually with memes. I love that memes are often inside jokes, but everyone has the capacity to be "in" on the joke. I love that a single image can be multiplied and applied to an infinite number of unique scenarios and somehow still make sense. They are my favorite kind of punchline. We live in a hyper referential world and internet memes are just one component of that.

EK: What are you thinking about re: internet memes and augmented reality?

LW: Right now, the question that I have is what happens to internet memes when a new technology emerges (which doesn't happen that often)? Or how have internet memes historically adapted and been incorporated into new forms of technology as they've emerged? I'm thinking about this question specifically because augmented reality is a new technology and medium with a lot of promise, and in a lot of ways, AR seems very conducive to internet meme culture.

I feel like internet memes are kind of already augmented already, like maybe a proto-form of augmented reality. Internet memes are comprised of layering images and meaning onto other things. And augmented reality entails layering digital objects onto other objects--digital or physical. Like there's a key element of cut and paste that occurs in memes as we know them and also in AR technology as we know it now. I think it's interesting how people bounce between images and videos when they remix memes. For images, there are different levels of editing, or augmenting the original content. You can add a caption, you can cut and paste content in and out of the image, you can create a new picture all together that incorporates references to the original meme... there's no limit to how in depth a person can get

when they edit and remix a meme for themselves.

EK: What are some memes that stuck with you? And why?

LW: A meme that I love is the Why You Always Lyin' meme. It's a six second video, originally uploaded to Vine in 2015, and there's a lot going on. There's a guy, and he's wearing a funky outfit, doing a goofy dance, making hilarious facial expressions, all to the tune of a throwback song by the R'n'B group Next, but with his own funny lyrics, and--he's doing all of this in a weird area behind a house outside where there's a random toilet. And all of this is in 6 seconds.

So any one of these elements is memorable and funny, and when they're all working together to create one piece of content, they create meme gold, because there's so much that other people can work with while remixing. I think the best and most viral memes are the ones that offer the most flexibility for remixing. This means that there are meaty. They have aesthetic, auditory, motion-based, visual, scene, and language elements that stand out and can be grabbed onto by viewers in order to make the remix.

EK: So how do the memes that you love, like Why You Always Lyin'--what do they have to do with AR? Or why are you thinking about what memes will look like in AR?

LW: Well, social media is integral to the way we create and consume internet memes, and AR is definitely available in the social media sphere already, with Snapchat and Instagram. But a Snapchat filter isn't a meme. 1 million people using a filter doesn't make the filter a meme, I don't think. It's a trend that is recognizable, but the content is changing in every one. A filter isn't the same kind of content that an internet meme is. And I guess I'm wondering, where are the memes that have originated in AR as a medium? If we have AR integrated into social media, why aren't there more AR memes? And I think this probably isn't even the right question to ask, because this is what got me thinking that memes are already kind of like augmented reality. Because of the cut and paste element.

I wonder if part of the reason there aren't more internet memes is that there isn't a notable platform focused exclusively on AR content. YouTube is devoted to videos, Twitter and Facebook are devoted to words and pictures. But where is the AR platform? It hasn't arrived yet. Or is it kind of Snapchat?

EK: So wait, there are no AR memes yet? What do you mean by AR meme?

LW: Well, I don't know, I guess there are. I mean like memes that originate in AR as a medium. One really big meme that originated in AR content is the hot dog meme. Do you know that one? It's a cartoon hotdog that has a really plain but also weirdly sinister smile on his face. The hotdog has been used as a good punchline to jokes made on all sorts of different platforms. But maybe there are other AR memes, too, that I just don't know about.

EK: Don't you feel like there's a fundamental difference, though between like a meme that could be produced via AR and a meme that is produced via video or image (the memes that we know now)? Because the thing about AR is that I feel like it's almost interactive, right? Whereas

meme culture comes from a phenomenon that is at once familiar and relatable, but also foreign and and kind of wacky. And I just feel like there's something about memes being universal that make them go viral, I think there's a certain element of "That's not me, but I could see myself there," in the viral memes. There's something removed about the meme and the viewer. But with AR, I feel like there is more direct interaction between the user and the meme. It isn't as removed.

LW: Yeah, I think that is true. I think with remixing, though--remixing is interactive. Memes are interactive in the sense that if you make a meme it's really interactive. Are you kind of saying that in AR as it exists now that it's too hard to make memes?

EK: Well a meme is created when something crazy happens. Like someone makes a video, and then it becomes viral, and then the memes come after that. I'm wondering with the staging of a traditional internet meme how the staging of an AR meme will be in comparison? Because it's hard for me to imagine it occurring as seamlessly and as universally. I feel like a lot of memes come from everyday life, like watching TV or observing people in public, or like..a girl shopping for the black and blue dress? Memes come from mundane things that happen in everyday life. Whereas it's hard to imagine at this point AR producing enough mundane things that are also wacky enough to go viral. But maybe as AR becomes more commonplace that will happen more often. I feel like there's a difference there, between AR the already established formats of video and image memes.

LW: I totally agree. I think AR content needs to be easily created, easily shared, and easily remixed. And that's what I want my project to be. I want my project to be an experiment in creating, sharing, and remixing AR content. Maybe augmented reality has to become more a part of our everyday life for AR memes to be created and shared on a regular basis. Are you saying that right now we aren't living enough of our life in AR to produce any notable AR content?

EK: Kind of, yeah. Like AR doesn't seem fully functional or realized yet. Take the Giphy World app and its introduction on the Today Show with Kathie Lee and Hoda. Things were shaking when Hoda was demonstrating the Giphy World app and Hoda had to really make sure she was explaining everything correctly in order for it to work. I this will change quickly, but it's clear that everyone, from users to developers, are still learning what this medium is and what it can do. And especially how people can tell stories in it. It's not intuitive for users yet.

LW: Yeah. This is what makes it exciting to me though. The medium and the technology are still being defined. It's a great moment to jump in and explore with other people.

EK: How are social media platforms integral to meme production? Do you think memes are dependent on social media platforms?

LW: Memes have been around since before the internet existed, so I don't think they're dependent on social media. But memes have been able to proliferate because of social media. 50% of a successful internet meme is making it, and 50% is spreading it. Social media makes it possible to do both: you can create and share memes on the same platform, within a few seconds. Like Twitter. Memes

made on Twitter are super hacked together. And they're made quickly. You can go more in depth and use multiple tools like Photoshop or Illustrator or Paint or whatever to create and share more complex memes, but being able to create and share on one platform easily is really powerful.

EK: What do you think about marketing and branding campaigns that use AR?

LW: I think right now, AR is still in a kind of gimmick-y stage. Like we know we are excited by little instances of AR, but we aren't really sure what an really in-depth mobile augmented reality experience might feel like. And I feel like at this stage, it's a medium that is really conducive to marketing campaigns, because marketers are always looking for new and exciting ways to promote their products, so AR is an easy thing to turn to. And I think this is fine. But I think as a medium, mobile AR needs to evolve from where it's at in order to become anything worthwhile. I hope it happens soon. I think for it to happen, AR has to become way more easy to experience, create, and consume for all people, not just people who have branded content. We need like a Reddit or a Twitter but for AR. It needs to go further than just snapchat filters.

EK: I think it's interesting you like memes with characters so much. Like the ones where a single image tells a story. And you can infer and speculate about someone's personality based on whatever image is in the meme.

LW: Yes, totally. I didn't think about that before, but yes. My absolute favorite memes are the ones that have a narrative. And most of them do. But especially the ones with characters. Like Distracted Boyfriend is a single image but it tells a rich and dramatic story.

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I would like to thank the Pre-Thesis students for all of their hard work, the IDM faculty, the IDM staff, the TCS department, all the thesis advisors, our writing consultant Gwen Hyman, and all of the family and friends that have supported the Pre-Thesis students through their project development.

Good luck next semester!

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