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Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA

SANTA CRUZ

Virtual Empowerment

An immersive experience and visual narrative in the form of sociopolitical fiction

A thesis paper submitted in partial satisfaction
of the requirements for the degree of

Masters of Fine Arts

in

Digital Arts and New Media

by

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December 2020

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2020

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ABSTRACT

Marjan Khatibi
Virtual Empowerment

In historical Persian mythology, female power is a symbol of mother nature, the protector of humans and Earth. I am interested in how this historical, supernatural, fantastical figure could inspire the restoration of the critical role of women in contemporary society.

Anahita is the Mother of Gods in old Persian. She is a symbol of fertility, pureness, creation, and affection. The Worship of Anahita continued in the Sassanid period (224 to 651 AD). D. M. Murdoch writes, “In Persian mythology, Anahita is the goddess of all the waters upon the earth and the source of the cosmic ocean; she drives a chariot pulled by four horses, wind, rain, cloud, and sleet; She is regarded as the source of life.” (Murdock, 2013, p.3)

In contrast with my childhood, as a woman in Iran, I did not have the right to do many things without the consent of my father. In fact, I am the legal property of my father. The “hijab” dress code is mandatory and is enforced both by the law and by male relatives. So, I did not have the right to wear what I pleased, or generally, to live my life in a way that I truly wanted to. In legendary stories of goddesses, associated with ideas such as fertility, motherhood, and pureness, is the power and confidence to face the patriarchal culture of my country. So, as part of my graduate research, I have become interested in topics around female role models and feminist values.

I critique the patriarchal conditions of contemporary Iran by contrasting them with a narrative of powerful female figures from Persian mythology. My goal is to reflect these contemporary problems by criticizing the obstacles and limitations women in Iran struggle with on a daily basis, and present an alternative, even fantastical representation of true stories.

Keywords: Empathy, Empowering, Immersion, Interactive experience, VE, VR.

DEDICATION

Special thanks to my family and friends, whose support and encouragement were invaluable in completing my M.F.A.

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CONTEXT

Introduction

As a child in Iran, I was heavily influenced by Disney animations, which at that time portrayed lead female characters as fragile and in need of rescue. (Abbadessa, E and Jenekins, D. Disney gender analysis. n.d.)

In *Cinderella*, *Sleeping Beauty*, and some other cartoons from 1937-1959, female princesses are dependent, they follow the typical aspects of beauty, and they need a male figure, like a prince, to rescue them. I used to hear stories that portrayed men as heroes. In most of the stories and movies, women were dependent creatures who needed men to save their life. I was always thinking about why I was not allowed to do many things by myself, but there was no answer to this question. As I grew up, I followed the news, and sometimes, I heard about people around the world who were fighting for their rights to live a better life. Today, I follow many activists and feminists who inspire me and who paved the way so that I could achieve my goals.

Moreover, most of the time, when I was reading ancient Persian stories, I got to know female heroes who were inspiring, but unfortunately, most of them are forgotten these days. As I was struggling to find ways to encourage and empower women, and to make a symbol of power, I found Virtual Reality an interesting, effective way to re-represent one of the most traditional deities of ancient Iranian myths and share her power with my participants through an immersive environment. In contemporary Iranian stories, only men are leaders with unique powers. Women are portrayed as

dependent and powerless. However, in ancient Persian mythology, goddesses possess extraordinary powers.

As a kid in Iran back in the 90s, I remember many families could not provide PCs for their children, and accessibility to technology was scarce. Some wealthy families provided their boys with PC games. For most girls, technology was unnecessary as they were not supposed to receive/attain any higher education. I was lucky as I was born in a family with an almost open-minded father. I had a computer in my room, and my sisters and I spent time playing games on the computer. Back in the 90s, the dial-up internet connection was quite disappointing. I would get disconnected soon after opening a webpage and have to start over the process. Compared to kids today, I feel that I spent more of my childhood playing outside of the house in the yard or in the street with other kids and not even knowing that I could connect with other people around the world. When I talked about other countries with my cousins and peers, they all described other countries as unknown, mysterious places that they would never know. Not all families could afford to travel to other countries.

After years, Iran experienced a significant surge in Internet usage, but Internet censorship in Iran has increased, and many websites that are popular globally have been blocked. As a college student in Iran, I could not access any information and technology I desired. As a woman of color from a highly patriarchal society engaged with technology, my first experience using Virtual Reality was about a year ago when I was introduced to a VR illustration and animation application called Quill, which empowers creators to tell immersive stories. I was really inspired by this technology. Then I

realized how much potential this gives viewers and artists who make storytelling to **communicate with people**. Virtual Reality disconnects me from the real world and makes me feel as though I am **in another place**, experiencing something I desire to see, and I cannot find in real life. For example, I played a VR game called Museum of Symmetry, which is a room-scale VR experience in 3D Space with 2D animations as never seen before. It took me on an unexpectedly pleasant journey, where happy 2D characters live on a 3D playground. It inspires me because it is an innovative artistic expression that takes the player to an imaginary world which offers the player access to fantastic environments and experiences. My first attempts at using VR shaped my imagination to start making a world of my own. I was also getting inspiration for the technical aspect of combining 2D and 3D art.

Through my art practice, I realized that I feel involved in the story in a virtual environment using VR. According to Tarnoff (as cited in Nakamura, 2020, p. 47), while Mark Zuckerberg refers to VR as a new emotional identity and a technology of empathy, stating, “One of the most powerful features of V.R. is empathy.” there are still some arguments and criticisms of VR’s emerging capabilities, which I discuss in detail in the VR section.

With my thesis work, I use VR because it is the most powerful way to share my space, making a room of my own in a simulated area, which is impossible to experience in the real world. I am investigating first, the possibility of escaping into an imaginary world as a coping mechanism and second, a fantasy world that allows people to feel

empowered in a room of their own, to resolve terrible things that cannot be resolved in real life, or to experience the impossible.

Virtual Empowerment is a concept I made as a key term in my project from my first engagement with VR healthcare applications. I started thinking about virtual reality technology's potential to empower people because I got introduced to some applications that, through virtual environments, patients can feel empowered and experience something that they do not feel confident to experience in the real world. And I searched how these applications help patients with their social anxieties and mental health problems. So, I started thinking about the word "Empowerment" and develop this concept regarding socio-political stories. My initial thought was to empower all people, not specifically patients who are suffering from diseases. *Virtual empowerment* is a conceptual term for describing my imaginary world, which empowers all people to encounter social problems.

I am challenging the conservative culture, patriarchal conditions, and limitations women face in Iran. I represent real female bodies and figures in Iran's society, including the women arrested, killed, or silenced and unable to attain their freedom. Through an imaginary world and using a fantastical story of the past, I bring old beliefs to modern life. I believe that my people have a strong commitment to their history, so I came up with the idea to use an old Persian female goddess who always brought magical power to human life as an alternative for terrible things. This re-representation of the old myth and bringing them into life helps people to not feel they are struggling and instead to feel that they can rescue others.

Project Description

I begin by providing some background about feminism as a social movement and its impact on feminist artists and the creation of feminist art. Women can regain power inspired by ancient myths and goddesses that precede and exceed the patriarchal mindset of contemporary Iranian society. We have always had myths about powerful and strong men. In mythology, women also have been known as healers and heroic forces.

Virtual Empowerment is an immersive experience and visual narrative in the form of sociopolitical fiction. The project is designed to inhabit both virtual and physical spaces. I use virtual reality (VR) technologies and installation since these technologies provide an immersive interactive experience for the participant to interact with and understand. I critique the patriarchal conditions of contemporary Iran by contrasting them with a narrative of powerful female figures from Persian mythology. My goal is to reflect on contemporary problems by criticizing the obstacles and limitations women in Iran struggle with on a daily basis and present an alternative, even fantastical representation of true stories. VR performs as a powerful tool to bring people to an imaginary world that they would not be able to experience in real life. By presenting fantastical alternatives (introducing goddesses) through VR, I present the potential power of mythology and legendary characters of old stories, which were part of my people's beliefs, and how they can have an impact on modern society.

My goal is to represent the following concepts in my interactive piece: the bodily relationship of the viewer to an immersive interactive environment, the cultural evolution of women, and women's rights. I address real portraits of women who sacrificed their bodies in the pursuit of equal rights and were victims of discrimination. For example, *Sahar Khodayari*, known as *#Blue Girl* was an Iranian woman who set herself on fire in front of the Islamic Revolutionary Court of Tehran on September 2, 2019 because she was not allowed to enter the football stadium. *Marzieh Ebrahimi* was a survivor of the 2014 serial acid attacks on women in Esfahan, Iran. *#A girl of Enghelab Street* is a symbol of a girl's protest against compulsory Hijab, who was arrested by the government. I portray a number of activists who protested against discrimination in Iran.

I imagine the construction of a room with some projected still images and looped motion concepts on the wall on the topic of women's rights. I intend to show that women are seen as dependent creatures in some parts of the world and in particular in the Middle East. I communicate this concept in a surreal or aphoristic way. For example, a woman who has been immobilized by a bunch of ropes or strings and her womb will serve as a symbol of their ancient and religious beliefs. There is a VR headset in the room. When the player enters the immersive room, the first things he/she faces are those looped motion concepts and still images of women that are projected on the walls that reflect the limitations that a woman faces within a patriarchal society. But, when the player wears the VR glasses, some famous ancient Persian goddesses--like Anahita--appear with special powers and traits. Then, this goddess will pass on or

give her power to the player. Now, the player has the power to become free from all these limitations and restrictions. For example, when the player gets a holy/sacred plant/flower from Anahita, they can shake hands, and rescue the other women with magical power.

By introducing this goddess into virtual reality, participants will get a feel for gender equality in contemporary Iran. My goal is social awareness. I think it is imperative to encourage traditional people to shift their mindset to the world of “equality.”

Some of my research questions include: Does virtual reality improve the viewer's ability to recall content over time, and if so, does it help one's behavioral change? Does the viewer's ability to look around freely help them understand the content better, or cause confusion and distract from the message?

THEORETICAL FOUNDATIONS

To explore ideas about the aesthetic and theory for the project, I investigate different artists' works that inspire me in the technical, visual, and conceptual aspects. I created a story for my work by searching around my country's history, mythology, and ancient stories. Investigating the recent protests and feminist movements in Iran helps me find the right direction to create my own story. I discuss relevant theories of the two different sides of the discussion about virtual reality and critiques. I facilitated the new theory of making a fantasy room of my own space in a virtual environment with magical power. Making a simulated space in which people can experience and interact with a story. In this imaginary world, people empower to experience something that they cannot experience in the real world. This has been one of my main concepts for my theoretical framework.

Feminist movements and protest

Feminism has been defined as one of the major, crucial, socio-political movements in the last few years. It has a clear goal: to define and achieve gender equality. "Feminism, as we know it today, is, in part, the product of the historical moment in the 1950s/1960s which saw new political, social and cultural theories developed to deal better with the problems posed by late capitalism." (Pollack, 1996, p. 4)

In Iran, women are expected to be hidden and silent. But, recently a number of Iranian social activists have emerged including female artists and filmmakers such as Shirin Ebadi, who won the Nobel Peace Prize; Shirin Neshat, who is a visual artist; Morehshin Allahyari, an Iranian media artist and activist; and a feminist activist and creator of the movement of Stealthy Freedoms of Iranian Women, which I do not mention her name here due to the censorship in my country. She is one of the victims of feminism movements in Iran who fights for gender equality and is banned from going back to the country. It is illegal in some Islamic countries to not wear the hijab in public. If you Google the hashtag #mystealthyfreedom, you will find pictures of women who uncovered their hair in public and share their pictures in social media. This movement has inspired me and many women to fight for our rights. Also, Shadi Ghadirian, Parastou Forouhar, and Taraneh Hemami which the work of these artists reflects on the situation of women in Iran.

Shirin Neshat is a feminist filmmaker and visual artist who lives in New York, USA. Her works present the situation of Iranian women after the revolution and gender issues. She has been banned from visiting Iran since 1996. Morehshin Allahyari is a media artist and activist based in New York. Her focus is on creating art incorporating technology with the concept of socio-cultural, political, and gender norms. Shadi Ghadirian is a contemporary photographer living in Iran. Through her work, she criticizes the contradictions between tradition and modernity for women inside the country. Parastou Forouhar is an Iranian installation artist living in Germany. Her artwork expresses a critical response towards the politics in Iran and Islamic

Fundamentalism. Taraneh Hemami is an Iranian American, visual artist and arts educator based in San Francisco, California, United States. One of her installations, “Sacred Space” (1994), focused on the stories of Iranian women.

Iran mythology; gods and goddesses

Mythology is the study of myth, and myths are traditional stories or narratives passed down through history, explaining much about gods, the creation of the universe, heroes, mythical creatures, and the attitudes of the societies and human nature. The study of myth carries much heritage and cultural weight. In the case of Iran, most of Iranian myths and stories can be found in the *Shahnameh* (The book of kings) written by Abol-Qassem Ferdowsi, and *Avesta*, the holy book of Zoroastrians. They play a crucial part in Iranian culture.

There are many different types of myths. The three most common ones are “Aetiological Myths”¹, Historical Myths and Psychological Myths. (Mellenthin and Shapiro, 2017, p. 239-241). Persian mythology is ancient and includes traditional legendary stories that present supernatural and extraordinary creatures. These myths reflect the orientation of the society towards the good, evil, their origin, and the confirmation of the gods, Yazata (lesser gods). Myths and Gods play a crucial role in

¹ The word aetiological is from the Greek word *aetion* (αἴτιον) meaning “reason” or “explanation” and includes three types: natural, etymological, and religious. A natural aetiological myth explains an aspect of nature. An etymological aetiological myth explains the origin of a word. A religious aetiological myth explains the origin of a religious ritual.

Iranian history and culture. Since ancient times, people have been interested in hearing mysterious stories of supernatural forces and their ability to rescue the world, change faith and bring power to their life. The conflict between two opposing forces are prevalent in Persian myth and Zoroastrianism. In the most epic stories, there is a hero who inspires the people of the special region. Zoroastrianism was the official religion of pre-Islamic Iranian empires. It is one of the oldest monotheistic (the belief in one God) religions in the world, predating Christianity, Islam, and even Judaism. It is a religion of justice and way of life based on the teaching of the Prophet Zarathustra, also known as Zoroaster who flourished in the year 1500 BC.

Zoroastrians believe in one supreme God named Ahura Mazda, or “the Lord of wisdom”, who was creator of the “perfect” world, and cared for his creations especially human beings. In fact, all Ahura Mazda requested was for mankind to live righteous lives and work for the betterment of the world. Zoroastrians believe in free will, and that “good thoughts, good words, and good deeds” will defeat the forces of evil and bring human beings closer to the perfect divine life. After death, humans who followed the path of righteousness would be rewarded and those who were wicked would be punished and suffer detrimental consequences.

Anahita

Immaculate Virgin and Mother of the Gods

Iranian and Armenian culture and religion have influenced each other. The Goddess Anahita holds key relevance among Iranian and Armenian myths. In Persian mythology, Anahita is the Mother of Gods. Anahita is the symbol of fertility, pureness, and creation and affection. The worship of Anahita started since the birth of the concept of the family. (Nazmi Afshar, 2001)

Anahita is the Zoroastrian goddess of ancient Iran's mythology. Javadi in her paper, *investigating the Anahita myth in Iran and Armenia* refers to Anahita as pure or virginal. Aredvu is the nickname of Anahita and it means fertile and blessed. The full name of Anahita is Aredvu Sura Anahita, which means most powerful and innocent. Anahita is the symbol of all the waters and is the same as Armenian goddess “Nane” and later Artemis of Greece (as cited in Duchesne Gimán, 2002: 236). Anahita was always sacrosanct to Iranian. Anahita has the ability to clean males’ sperm and milk in mothers’ breast and females’ womb (Yasht 5, paragraph 2). The temple of Anahita in Bishapour, which was constructed in Sassanid era², was a holy place for all social classes of people to worship and praise her. (Javadi, and Nikoei, 2016)

The article by Murdock shows how the pre-Christian goddess Anahita is both a virgin and a mother. Anahita gave birth to Perso-Armenian god Mithra. Anahita has

² Anahita’s popularity endured for centuries afterward, as her religion thrived in the Parthian (247 BCE–224 AD/CE) and Sasanian (224-651 AD/CE) Empires as well. Hence, there was continuous worship of this goddess for possibly 1,500 years.

been called the best-known divinity of the Persians in that region. "...the fifth Yasht tells [us] that Ahura Mazda rendered homage to Anāhitā and asked for her assistance in order to win Zarathustra as a champion of the new faith." (Murdock, 2013, p. 2) This proves that Anahita was so strong and had the ability to change faith. Fifth Yasht describes Anahita as a beautiful young lady, tall, with a noble appearance. She wears a cloak, decorated by golden thread, shining fur shoes with golden laces. Her neck is decorated with jewels and hundreds of stars on her crown. She drives a carriage with four horses as symbols of wind, rain, snow and hail. It is argued that her relation to Ahura Mazda has two sides. Some believe that she originated from him, but the opposite side says that Ahura Mazda praises her.

The reason I chose Anahita as the source of power in my project is because she is defined as "a Divine Cosmic Force that purifies and sustains the entire cosmos" (Noshir H. Dadrawala, 2017). I think all these descriptions about Anahita makes her a strong source to help my participants feel empowered. Here are some pictures of Anahita on vessels and monuments in Iran.



Figure 1. Anahita Vessel.



Figure 2. Naqsh-e-Rustam investiture of Narseh.



Figure 3. The Temple of Anahita at Kangavar, Iran.

DESIGN AND ANALYSIS

Introduction

VR is a platform for creating and bringing my imagination into life. VR experience is rapidly moving forward. In the last few years, we have seen great achievements and developments in immersive 3D content in this industry. The biggest technology companies, Facebook, Google, and Microsoft are investing a vast amount of money into this area. With the advancement of head-mounted displays (HMDs) such as HTC VIVE, Oculus Rift, Oculus Quest, Sony PlayStation VR we can expect something big is on the way. It will be no surprise if we see simple glasses with no wires with options of reality in the future.

What makes it more exciting to be a VR experience designer is that there are a few established conventions and a few experts out there. If you start working on VR experience now, you could find great opportunities in this open field soon. That is why I chose to enter the VR industry as a graphic designer. And yes, it can be daunting to jump into a new field as a graphic designer. But I do want to share my thoughts and ideas to encourage and inspire people. I believe there is nothing more powerful than VR technology to raise social awareness. Because some ideas are hard to explain, and this is where Virtual Reality can be the medium to visualize your thoughts and ideas.

I intend to take people to a short, interactive journey facing all the limitations and fears that keep them away from all the great things they can do to make the world a better place for living not only for themselves but also for the people around them.

“We’re finally going to be free of the 2D monitor. It’s been a window into the virtual reality that we’ve all looked into for 30–40 years.” (Brendan Iribe) Just like designing a website or mobile application, the process of creating a VR experience begins with sketching ideas, similar to designing 2D interfaces. It is helpful to consider size and color when you are sketching your ideas to develop content for VR.

Virtual reality

There are many definitions for virtual Reality, but I like the one that is defined by Jeremy Bailenson, professor of communication at Stanford University: “VR is an experience generator. Because it is a digital medium, anything we can imagine seeing or hearing can be easily generated in a VR environment” (Bailenson, 2018, p. 46). He also believes that a VR experience is better understood and believable as an actual experience than a media experience.

Virtual Reality is an immersive technology that brings the human beings to the virtual world, a world not physically present, but a world people feel they are immersed in. VR is a simulated environment generated by a computer that allows the player to interact and feel immersed in a three-dimensional (3D) environment (Rebelo et al., 2012). The idea of a Virtual environment (VE) is compelling. You can experience things and do everything you cannot do in the real world. VR uses a combination of computer hardware and software to represent different aspects of the physical world to an individual in real-time.

Experience is an important term through using VR. Experience is something that happens in the real world but through VR we see a huge gap between “real experience” and “mediated experience.” Of course, real experience in the real world is not comparable to VR experience but, the experience through VR is much more powerful, psychologically, than mediated experiences like television or cinema. VR allows us to experience and interact with fictional things we are not able to see or even

imagine in the real world. A good VR makes things feel real. VR has the potential to immerse people into the scene. Bailenson, in his book, *Experience on demand*, refers to three technical elements in VR for creating presence: tracking, rendering, and display. Bailenson mentions that when any one of these elements are off the participant will experience discomfort, sickness and distraction. (2018) Imagine when you are turning your head to see around in the VR environment and there is a lag between what you expect to see and what you see. Tracking is the process of body movement in X, Y, Z coordinates. Rendering, as 3D modeling, the proper information of senses like hearing, smell, touch and vision, and display is the way we replace the physical senses with digital information. (p. 21-23) The level of immersion depends on how many senses are involved in the experience and how much the player is separated from the real world.

The reason why VR works well in training and learning is body movement, which means we move our body naturally in VR like our movements in the real world. The ways our brain is treating the experiences is similar to what we experience in the real world. (p. 37-38)

The VR triangle: According to Burdea and Coiffet (As cited in Rebelo et al., 2012), a VR environment should have three aspects: interaction, immersion, and imagination. The designer should make sure that the player is wholly involved in the immersive environment. Interaction is the relationship between the player and the VR environment. Some of the equipment to create real-time interactivity include motion trackers and sensing gloves. The motion capture suit allows the player to move in the

virtual world. Rebelo et al. (2012) also defined immersion as the player's feeling of being involved in the virtual environment. Gutierrez, Vexo and Thalmann (As cited in Rebelo et al., 2012), claim that there are three different types of immersion based on the composition of user interface identified as fully immersion (head-mounted displays), semi-immersive (large projection screen), and non-immersive (LCD displays, desktop-based VR or web VR). CAVE is considered as a room in which the virtual environment is projected onto the walls and floor and ceiling. This technology is considered as semi-immersive VR, and it can be stereoscopic. Imagination is about believing that you are in the virtual world. The player interacts with the objects in the VE (virtual environment) believing he/she is in the Virtual Environment even when they are not physically in it.

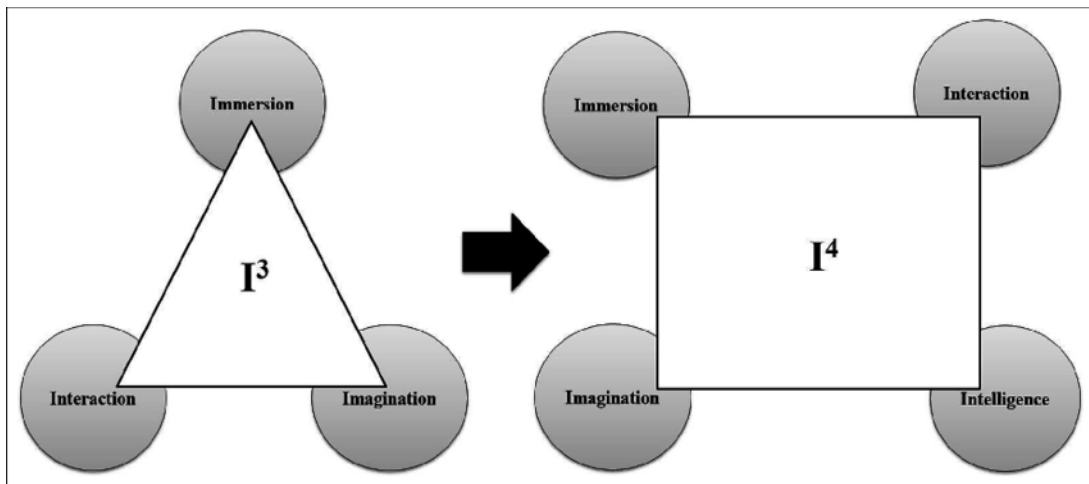


Figure 4. Virtual reality triangle transformation to virtual reality quadrilateral.

VR is therefore a tool to make my participants or users get a sense of empathy with socio-political issues. I think they can feel immersed when they are in a 360-degrees environment with VR gadgets such as HTC Vive, and Oculus Rift, and Oculus Quest,

Virtual Reality can help people see places that are hard to get to, and experience places that are impossible to create in the real world. Rebelo et al. (2012) found that the advantages of using VR are availability, safety, and data provision. The disadvantages of using virtual reality technology are motion sickness, simulator sickness, and cybersickness. As an artist, I believe it is a good time to develop User Experience designs that encourage and support people who are seeking out new experiences and lifestyle improvements.

The word immersion might have a different meaning in relation to my piece. As I mentioned earlier immersion happens in a 3D environment with real characters and animations and 3D sound. All three technical elements in VR for creating presence, as Bailenson mentioned, should be applied to a piece to make participants fully immersed. In regard to my piece, the user might not feel fully immersed in the environment, but the goal is to make them feel that they belong to the story or they are part of the story with the ability to create change. My participants do not walk in somebody else's shoes, they might be a witness of women suffering but they are also contributing to and developing the story. The process of gaining power by holding the magical plant makes the participants feel empowered in a fantasy world made of 2D animations and a 3D environment. So, I think I have resolved the challenge of using VR to see other people suffering, and bad feelings in my piece by giving the participants the opportunity to get involved, and have an impact on the story, and create a good ending. My participants experience the good feeling of having the power to change bad things to good. According to Weinbaum (2015), in a fiction VR model, "you are in the

story” and “the story is around you” (as cited in Rubio-Tamayo et al. 2017, p. 3). This experience gives the player a feeling of being involved in the story.

Chris Milk states that “Virtual reality is the ultimate empathy machine. These experiences are more than documentaries. They’re opportunities to walk a mile in someone else’s shoes”. Lisa Nakamura in her article *Feeling good about feeling bad: virtuous virtual reality and the automation of racial empathy* talks about VR as an empathy machine and refers to two sides of the discussion about the critique of VR. In 2014, when Oculus VR was obtained by Facebook, it was referred to as a “good” technology. The company’s mission was connecting people, promoting compassion and intimacy. VR is described as a “transformative and disruptive technology,” which enables people to “experience the impossible” and it develops and extends the company’s goal to “connect the world” through social networking (Nakamura, 2020, p. 48). VR is a major investment in creating a new technology of feelings. According to Tarnoff (as cited in Nakamura, 2020, p. 48) Mark Zuckerberg argued that “Oculus has the chance to create the most social platform ever”. “Brendan Iribe echoed Facebook’s messaging about the company creating virtuous forms of social connection: ‘we believe virtual reality will be heavily defined by social experiences that connect people in magical, new ways’.” (Nakamura, 2020, p. 48) Nakamura also refers to VR’s cultural meaning as an empathy machine to experience social problems such as experiencing blindness, learning about homelessness and poverty, solitary confinement, and living life as a refugee. The most popular potential uses of VR are in the video game and pornography industries, so in order to get a new meaning for social

connection, a new visual genre of VR for social good or virtuous VR needed to be identified. (Nakamura, 2020, p.49)

Nakamura also refers to some philosophers such as Paul Bloom who come out “against empathy” in his book of the same name. “Bloom is certainly not saying that empathy is not an entirely useless feeling, but he is entirely correct that its overlap with the idea of compassion means that it is dangerously overvalued as a way of addressing other people’s suffering” (Nakamura, 2020, p. 61).

Hence, I agree with the capability of creating empathy through VR, but I truly support Bloom and Nakamura’s argument that artists and designers should promote compassion rather than simply enabling users to experience other people's lives as though they were putting on their shoes. As an example, mentioned in Nakamura’s article, VR can be the most useful way to experience and address suffering in the real world. Psychology experiments in VR labs have demonstrated that people can change their attitude from watching titles about deforestation and decide to use fewer paper towels after watching beautiful forests, but titles about racism and sexism are more challenging and complex to imagine in everyday life. (Nakamura, 2020, p.61) Therefore, the desire to experience these topics in VR directs us how to feel about suffering or terrible things and ways of viewing.

Digital storytelling

In this section, I explain Digital storytelling as the modern format of communication. I also talk about the relationship between interactive narrative and the implications of telling a digital story through new technologies.

There are a variety of definitions for Digital storytelling. “Porter (2004) describes storytelling as compound real stories with virtualization, sound effect, video, and graphic while Dupain and Magure (2005) define digital storytelling as creating a story using hardware, software, and story elements such as 3D animation, sound, photo, and video. Chung (2007) notes that digital storytelling is a harmonic digital media composed of multimedia components such as video, photo, audio, text, and 3D model. However, digital storytelling is fully regarded as creating stories about some topic by using software tools and for generating and distributing this story in the virtual environment (Nguyen, 2011).” (as cited in Jantakoon, et al., 2019, p. 1). But, maybe Miller’s (2004) definition might be the most accurate one: “Digital storytelling is a narrative entertainment that reaches its audience via digital technology and media—microprocessors, wireless signals, the Web, DVDs, and so on. Interactivity is one of its hallmarks. Older media, which is supported by analog technology (film, video, LPs, audiotape), cannot support back-and-forth communications between the audience and the material—interactivity—and this is a radical difference between the older media and the new.” (p. 14) Digital storytelling has become popular, and currently, many organizations such as schools, libraries, museums are using it to help achieve their

goals. Also, communities from all around the world are engaging in digital stories to create content to not only educate the public, but also help them improve their skills and abilities.

My approach to making an interactive digital story presents a real-world of Iran's society versus the imaginary world of my own space. Nothing is changeable in the real world, but in the imaginary world, participants get the power to change and develop the story. They see the differences between living in the real or being strong in magical space, and they get a sense of power through using technology.

Here is the story, the world of reality is black and white, and it's dark. There is no hope. There are ropes everywhere. They are expanded and possess the whole space. While In the virtual room, you are free. You are strong and confident to do anything. The ropes disappear because you destroy them by magical power.



Figure 5. MFA Show Installation. Black and White vs. Color

The rising popularity of interactive entertainment

The trend of using interactive entertainment has changed a lot. It is no longer for a limited group of people (hardcore gamers or boys). It is headed towards a vast majority of media and platforms and there is no limitation in terms of age, gender, and groups. It can be used in many places and organizations and it does have enough power and popularity to drive the public to spend their money and time on it. It has driven many companies and brands to strongly focus on turning their traditional products into an interactive experience. The future looks bright for this industry and the opportunity in this field is beyond many forecasts and expectations. (Miller, 2004, p. 53)

Interactivity

“Without interactivity, digital entertainment would simply be a duplicate of traditional entertainment, except that the medium in which it is presented, such as video or audio, would be in a digital form rather than an analog form. Essentially, the experience of “consuming” the entertainment would be exactly the same.” (Miller, 2004, p. 56)

It is the existence of interactivity in digital media that makes it completely different from traditional storytelling media such as films or novels. To be more precise, in a non-interactive form of entertainment, you are doing nothing more than predefined tasks or dictated structures, and the author or director controls the progress, pace, and perspective at will. In interactive entertainments you are a participant. You

can manipulate, explore, or influence the story and construction. In fact, your interaction plays a vital role to complete the construct.

“As the word ‘‘interactive’’ indicates, it is an active experience. You are doing something. And the prefix ‘‘inter’’ means ‘‘between,’’ telling us that we are talking about an active relationship between the user and the content. It is a two-way exchange. You do something; the content reacts to what you’ve done. Or the content demands something from you, and you respond in some way.” (Miller, 2004, p. 56) This difference between interactive and passive entertainment is so huge that “we rarely even use the word ‘‘audience’’ when we are talking about those who are experiencing interactive work. Instead, we may call upon one of several words to describe this person. If we’re talking about someone playing a video game, we will probably refer to the person as a ‘‘player’’ or ‘‘gamer,’’ while if a person is surfing the Net, we often use the term ‘‘visitor.’’ For simulations and immersive environments, we often call the person a ‘‘**participant.**’’ Some professionals also use the general term ‘‘interactor’’ or another all-purpose word, ‘‘**user.**’’” (Miller, 2004, p. 57) The reason why we name such individuals in the singular form is that the journey for each user is unique. In fact, the user is put at the center of the story, and he or she navigates his or her own journey through a unique life like scenario. So, based on my understanding, according to this author interactivity is an individual experience and cannot be a mass audience. For my project, “Participant” is the most appropriate word because people interact with the piece, but they are not players or users.

In today's world, interactivity is a crucial element. Not only does it allow the user to delve into a digital world very similar to reality, but it also encourages people to be more active. The user sees himself or herself in a virtual world interacting with some characters and objects with endless possibilities. They attract and engage us significantly, requiring our mental awareness, and even in some cases, they involve most of the human body's senses as well, including sight, hearing, touch, and sometimes even smell. To put it another way, this is an immersive experience. It offers something new and allows us to develop unique stories and environments, and it gives us the freedom of interaction and choice in ways that non-interactive entertainment such as a film or book cannot do.

User interface in virtual reality

We all know some of the most common patterns to interact with a touch screen such as tapping to run an option, swiping, and pinching to zoom. You should consider them in VR as well. Definitely, new UI patterns will be created in the future, helping the industry to grow faster than ever. These days, there is a variety of software available for designers to create the UI of an application, and based on the purpose, it is different from person to person. The sketch is the most famous software since it is well-known enough among UI designers. For making 3D games, Unity and Unreal Engines are the most popular ones in the industry while Maya and Cinema 4D are mostly used for making animations and renderings.

User experience in virtual reality

Another part of the design process of an application is the User Experience (UX) design. There are a variety of definitions for UX, and maybe the most accurate one is from the inventor of the term, “User Experience,” Donald Norman: “No product is an island. A product is more than the product. It is a cohesive, integrated set of experiences. Think through all of the stages of a product or service – from initial intentions through final reflections, from the first usage to help, service, and maintenance. Make them all work together seamlessly.” To summarize all the definitions, UX is the design of the experience of a service or product based on user

needs. In fact, the goal is improving user satisfaction by enhancing the usability and pleasure provided in the interaction between the user and the product. When you are creating a website or application, you should think ahead. Who are your users? Make sure that it is easy, smooth, and fast to navigate, follow, and operate by users, and this can be achieved by considering two steps in UX design:

1- Research and analysis: you have to talk to the user to discover their wants, needs, and problems from their point of view.

2- Mapping out the user flow: you have to draw out all of the actions that users will take when interfacing with your service or product on a piece of paper. Based on this drawing, you can define various scenarios.

In a VR environment, a player has to perceive a new dimension and understand metaphors for VR. For example, they need to stroll instead of scrolling, and clicking would instead involve picking, pointing, or grabbing in the 360-degree environment. Perspective is very important because participants are not “on the outside looking in” but rather “on the inside looking out/within.” Objects are not passive in the VR environment, and they are independent and free to interact with each other. In VR, designers should switch their mindset to think in a sphere and understand skyboxes. Presence is key in VR as the main objective of a VR designer is to bring the player into the new world they designed and change the player’s mind to forget about the room they are actually in. (Dzbenki, M. A., 2019, p. 6-15)

Physiological comfort

When we design a VR experience, the most important consideration is the player's comfort, and this is one of the most difficult challenges in making a great, unique VR experience for the user. What I mean is that you might have experienced or heard that using a VR headset for a certain amount of time makes you feel fatigued or nauseous, or makes you experience motion sickness. In fact, VR affects your brain because when the player wears the VR headset, their body is not moving in reality, but in the headset, they are watching a moving environment. The solution for this problem is to control some moving parameters such as the speed in which a player has to move and the types of movements (such as jumping) that a player might have to use. (Hudelson, n.d.)

TECHNICAL ELEMENTS

Unity, Maya, Photoshop, and Oculus

Devices and the software I used included an Oculus Quest headset, Maya 2019, Unity 2019, and other programs such as Adobe Photoshop (to paint a 360-degree environment) and After effect CC (to animate the characters), which were used to give users an immersive experience in an imaginary world. This technique allows users to experience not only the environment and limitations around a woman who lives in Iran but also interactions with goddesses in a fictional world. I also experimented with 2 virtual reality applications, Quill and Medium, which gave me the option to paint 2D and 3D objects in a 3D space. I had the opportunity to walk around in a 3D environment and paint the objects, rotate them, and see them from many angles within a 360-degree environment using these applications.

Unity is a cross-platform game engine, and this makes it the best pick for my virtual reality experience since it allows me to build VR-support versions of my game for Windows and macOS. Oculus Quest is a virtual reality headset with controllers developed by Oculus VR. It allows users to move in both real and virtual spaces to feel more engaged in the game. The controllers can be used to pick up objects in the game. I plan to utilize this to allow users to interact with objects and a goddess in an imaginary room. Maya is multi-system 3D modeling software developed by Autodesk. It is also commonly used for animation and rendering. Developers can import Maya files into the Unity game engine, or they can export FBX or OBJ files. However, I might have to

use low-poly models created in Maya since I was told that using complex models might affect VR headset performance during runtime. Also, I use Adobe Photoshop CC to edit textures on the 2D and 3D models and make them better.

PRECEDENT ARTWORKS REVIEW

Introduction

As a girl growing up in Iran, from a young age, I always dreamed of escaping into another world, a world where I could be myself, wear all types of clothes I want, and do whatever I want. Definitely, there were some amazing times and I really miss those times, but there were also some hard times and intense moments of dissatisfaction, and sometimes I could escape from the negative things going on in my country by reading books and watching TV and videos on social media. I remember I used to follow a Persian girl, Sadaf, who was living in America and shared her lifestyle with her followers, and while I was watching her videos, I wondered what it felt like to be in her shoes, living her life free from prejudices, and when I turned 27, this curiosity and intense desire to know more motivated me to come to the United States. I always dreamed of coming to the United States as the place where I could follow my dreams as if anything was possible, and I knew I would have the type of life I had imagined for myself, and it was in that moment that I started looking for many different opportunities to share my story around the world. I ended up applying the power of virtual reality technology to my work since it allowed me to paint a new picture of a world without race and gender inequality that ventures way beyond the imagination of some people in certain parts of the world. I want to encourage people to open up their minds, think bigger, and fight for their inalienable rights.

When I see young girls and women in my country being ignored or abandoned because of their rights and choices, I cannot look past them because those people are me. And this project is my first contribution to create and see our world with a sense of wonder, to educate people by putting people in a totally different place in which they can experience problems and situations that other people living miles away are dealing with. I want participants to be inspired to dream of new possibilities, and I am eager to make a positive change.

Empowering through VR technology

In VR healthcare applications, a patient learns how to manage and deal with their problem. VR can be more than just a tool to solve problems; it can also be a tool for personal empowerment. Patients may not have enough knowledge or confidence to practice certain choices in the real world, and they may feel the inability to do so. So, VR provides a space where they can freely experience, feel, and think through a “safe” area (Riva et al., 2009, p. 173-174).

I genuinely believe that it is possible to foster empowerment through VR in regards to social problems. I intend to demonstrate one of these problems in VR to make people--both from the countries involved with this problem as well as people around the world-- aware of this controversial social issue by putting them in the situation to develop their self-esteem and to feel that they have the ability to change the condition and make the world a better place to live in. Immersive technology is not just limited to video games anymore. It is so much more than that. Virtual reality provides an opportunity to connect and teach people in powerful ways.

I often asked myself how can I show people my perspective (on a particular situation I was dealing with) in the hopes that I might change their perspective? I started thinking about how this could apply to my people. Maybe instead of trying to change their old-fashioned beliefs and behavior, I can just provide them with some tools to help them think more about their surroundings and allow them to see the world in a new way.

Clouds Over Sidra: An award-winning 360-degree film

Clouds Over Sidra features the story of Sidra, a 12-year-old girl who guides the user through her daily life in the Za'atari Refugee Camp in Jordan, home to thousands of Syrians fleeing violence and war. 360-degree videos for promoting empathy are great examples of being in someone else's shoes to understand it.

The film conveys the prejudices in the camp. In part of the film, for example, Sidra takes the participant on a tour in a game room where boys are playing shooting games. The touching moment of the film was in this scene, when Sidra tells us that girls are not allowed to play games on the computers. She says, "They say they are playing games, but I don't know what they are doing because they won't let girls play on the computers. I do not understand computer games..." (3:20)³ For a moment, I felt that Sidra was me. Of course, the situation shown in the film was way worse than my country, but watching this short film inspired me to take a bigger step and make a VR experience for teaching empathy.

There are differences between VR and 360-degree videos. In a 360-degree video, the player is limited to move around and view content from four different angles (Left, Right, Top, Bottom) within an enclosed sphere. There is no interaction between the player and the environment. In contrast, there is no limit to the player's movement in a VR experience and the player has control of the environment (six degrees of freedom) more than directions, and they can interact with the environment.

³ Clouds Over Sidra, 2016, 360-degree film, <https://www.youtube.com/watch?v=mUosdCQsMkM>



Figure 6. Clouds Over Sidra: An award-winning 360-degree film, 2015

Immersive journalism

Virtual Reality is a term that usually refers to both 360-degree videos and volumetric VR pieces, which present as room-scale or walk-around or true VR. There are some key terms in VR for construction methods, for example volumetric video capture versus videogrammetry,⁴ which are used in immersive journalism.

Through Virtual Reality, Nonny De La Pena, an American journalist and documentary filmmaker, puts the player in the middle of the story and the player experiences what she calls the duality of the presence, a real feeling as if the player is in the middle of something that they normally see on TV news. When the player experiences VR, it does not mean that they forget that they are here, but they feel that they are in two places at once. Their mind tricks their body to feel as if they are somewhere else.

⁴ CREATING VIRTUAL REALITY JOURNALISM, <http://apps.frontline.org/vr-report/>

Hunger in LA, by De La Pena, is an example of immersive journalism and a virtual news game that makes players feel like they are really in the story and makes them have empathy for victims of the food crisis in Los Angeles. *Project Syria* is another example of a VR experience that aims to make empathy. In the game, the player witnesses a daily afternoon in Syria, including the tragic event of bombs going off in the street, and the player can empathize with people there.



Figure 7. Hunger in LA, 2012, VR



Figure 8. Project Syria, 2014, VR

These are examples of nonfiction stories in VR that simulate human figures in real environments to help the viewer have greater empathy for the people in the situation. Using the technique of photogrammetry⁵ in *After Solitary* makes the audience feel they are really in a solitary confinement cell in Maine State Prison.

I am investigating how people are going to react to an imaginary, fictional fantasy narrative in VR. Is it believable for them? Do they get a sense of being present in another place in a fantastical way? How do they accept the story when it does not include real characters, photogrammetry and videogrammetry? Do they feel they are really in the story even if they are experiencing an imaginary world with surreal figures?



Figure 9. *After Solitary*, 2017, 360-degree documentary

⁵ capturing 3D spaces in high-resolution photographic detail.



Figure 10. Fred Penelle and Yannick Jacquet, MÉCANIQUES DISCURSIVES INSTALLATION, 2011 - 2021

Mécaniques Discursives was a creative experiment launched in 2011 that inspired my installation's aesthetic aspects (see figure 10). The illustrations projected on the walls and the lighting in the room gave me the idea to make my own immersive room. *Museum of Symmetry*, a VR game, also inspired my 2D illustrations.

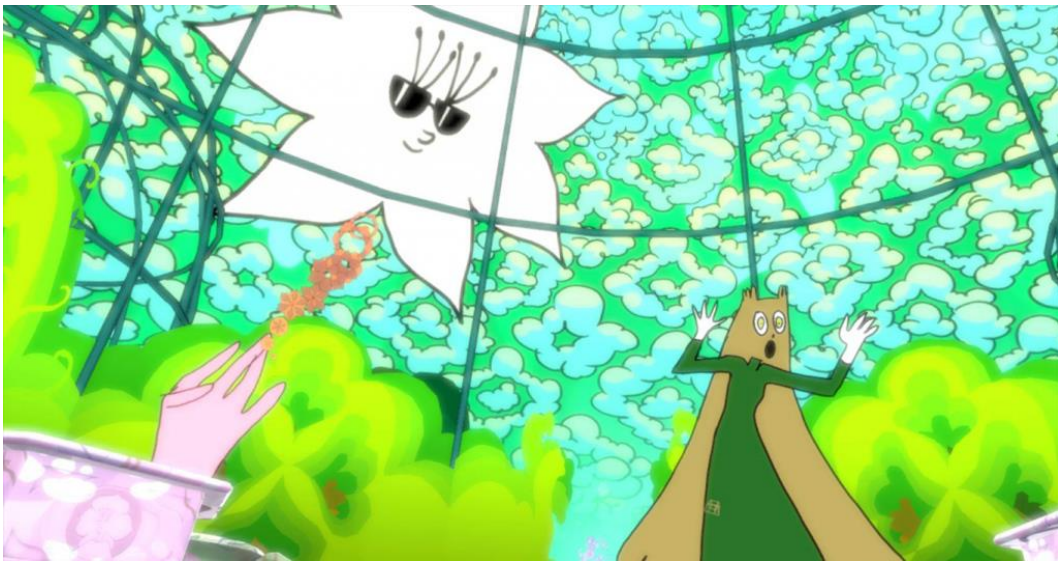


Figure 11. Museum of Symmetry, 2018, VR video game.

Iranian media artists and activists

In this section I intend to analyze the works of two Iranian women artists. I describe their objectives and goals related to my practice. The reason I chose Shirin Neshat as my case study is because she is a contemporary artist who explores contemporary issues in Iran and the obstacles women face. She uses different mediums to achieve her goal. Morehshin Allahyari is a media artist whose works inspired me because she uses technology, especially VR, to express the patriarchal culture of her home country, and she refers to ancient, Persian and Arabic figures and their connection to our contemporary life. Both artists inspire me because they are influenced by their older culture and religion, and these influences play a significant role in their works as a factor of social and political change. They fight for changing social norms in contemporary Iran.

Shirin Neshat is a visual artist who is currently living in the US. She is among the best-known Persian artists in the Western world. Her photographs and videos have been shown in many famous international exhibitions. In all her collections, she explores issues concerning contemporary Islamic cultures, identities, and in particular Muslim women in Iran.

Neshat was born in 1957 in Qazvin, a large religious city in Iran. She left the country at the age of 17 to attend college in the United States in 1974. After the Islamic revolution in 1978, she was not able to return to Iran and decided to remain in the

United States until 1990. However, her first visit to Iran in 1990 was a shocking experience for her. She experienced an extreme change in the culture and the oppression of women. She became obsessed and terrified by the impact of the revolution, and from that moment, she changed the focus of her art.

In the mid-1990s, Neshat designed a series of large black and white photographs called *Women of Allah*. In the series, she reveals the social and political realities of Iran and reflects on the situation and place of her gender after the Islamic revolution. Prior to this series, women were rarely the subject of Islamic artworks. This series opened a new door by introducing a vision of Muslim women in the art world.

The photos in the *Women of Allah* present Iranian women dressed in black coats called “chador” (the most common form of Islamic dress in Iran). The images are decorated with Persian handwritten texts to reflect the repressed status of women living not only in Iran but also in all traditional Islamic cultures since women are not allowed to express themselves in these cultures. In 1997, Neshat turned to making films and videos when she was surprised by the social and political realities of Iran. In 1998, her work titled *Turbulent* was the first film of her series that focused on gender issues about the social structure of Islamic Iran. In *Turbulent*, a man and women are seen on opposite sides of the screen. First, the man sings a song for an all-male audience, and when his song is finished, the woman performs a complex vocal piece for no audience and sings no lyrics. However, her voice and performance are more powerful than the man’s. This installation clearly reflects traditional gender separation in Islamic culture.

In 2009, she won the Silver Lion for best director at the Venice Film Festival for her film *Women Without Men*. The movie is set in 1953, when the CIA helped bring the democratic government of Iran down and put the Shah in control. Women are running from the oppression of either the government or the men in their lives. The women in the film only have few options, probably a real reflection of the women living in Iran during that time frame.

Neshat addresses three audiences: the government in Iran, Iranian women inside and outside of the country, and the international audience. She is fighting against the government and its censorship that tries to suppress women in society. She wants to show the international audience the character and personality of Iranian women, who are educated, untraditional, and brave. Also, Neshat tries to encourage Iranian women to express themselves, fearlessly and freely, and fight for their rights and what they believe in.

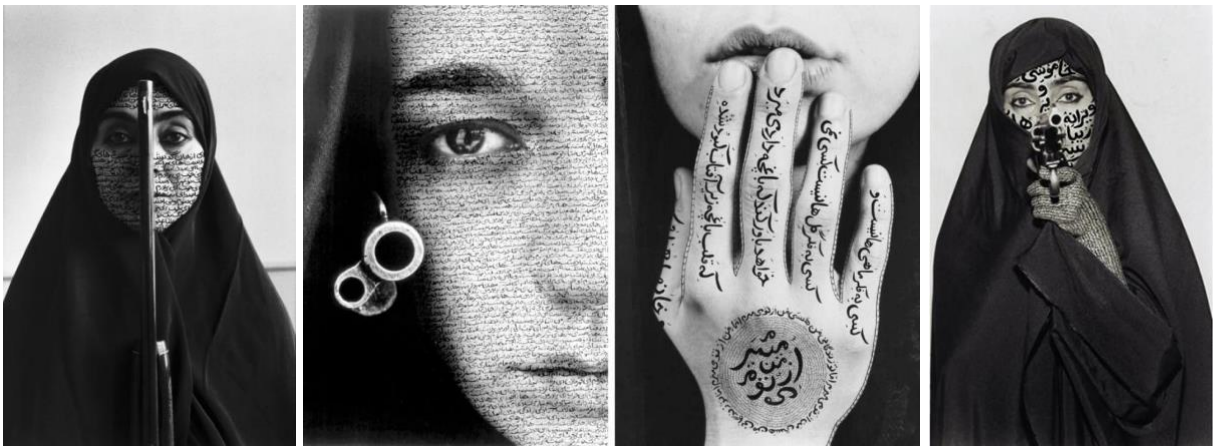


Figure 12. Shirin Neshat, *Women of Allah* series, 1994, B&W RC print & ink, photo by Cynthia Preston ©Shirin Neshat (courtesy Barbara Gladstone Gallery, New York and Brussel)

In most of Neshat's artwork, we can see the figure of the woman who covers her body with a black chador that represents a culture and rule in dressing. Neshat tries to show the restrictions women face in Iran and to present the Islamic religion by showing hands in prayer. In the *Women of Allah* series, the figure of a woman with a gun in chador and with Arabic typography on her face, hands, and feet to represents Iranian women in the Iran-Iraq War and the Islamic Revolution.

Focusing on the restrictions made by the new culture after the revolution, the patriarchal conditions that existed years prior (which showed up with a new face), and also in some cases the limitations women face through some compulsory laws, Neshat's work was inspiring for me. I see the motifs, elements, symbolic icons, and texts that she uses in her work come from an old culture, which she re-represented through video and photographs.

Morehshin Allahyari is a Persian media artist and activist. Her work reflects her interest in topics like sociopolitical, cultural, and gender equality. She focuses on exploring the relationship between art and technology.

Morehshin Allahyari's current project, *The Laughing Snake*, is a part of her *She Who Sees the Unknown* series. "In this series she utilizes 3D modeling, 3D Scanning, 3D printing, and storytelling to re-create monstrous female/queer figures of Middle-Eastern origin, using the traditions and myths associated with them to explore the catastrophes of colonialism, patriarchy and environmental degradation in relationship to the Middle East" (Allahyari, 2019). One of the concepts that she

developed related to this topic is “re-figuring.” This topic and word are inspiring for my research. She writes, “Re-Figuring as a feminist and activism practice. Re-figuring for me, is about activation and preservation. It’s an act of going back and retrieving the past” (Allahyari, 2019).

The main question that Morehshin asks is how we can re-imagine forgotten figures in the history of the Middle East. She tries to recreate the stories of Jinn, supernatural beings in Islamic culture, including monstrous female figures who have great power but have been underestimated as less capable than they really are. Morehshin elaborates, “Re-figuring therefore, is a ficto-feminist and activism practice to reflect on the effects of historical and digital colonialism and other forms of oppression and catastrophe. Re-figuring forgotten figures and their situated histories” (Allahyari, 2019).

She mixes online narrative with personal stories to represent topics of femininity, sexual harassment, and morality in a hypertext narrative piece. Although Morehshin uses evil and negative goddesses and female figures in Islamic countries in her research and works, I use the positive ones in my project; the ones who are responsible for protecting the earth, fertility and saving humans.

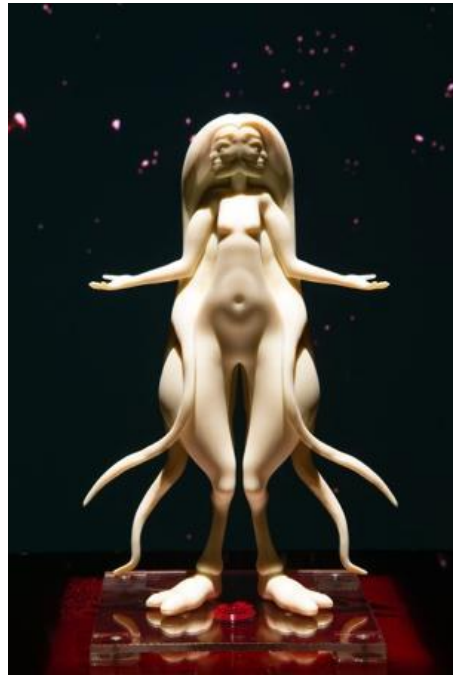
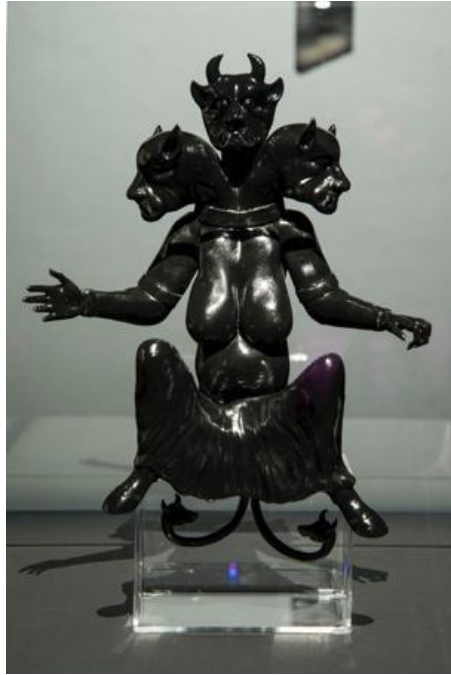


Figure 13. Morehshin Allahyari, *She Who Sees the Unknown*, October 2016 as part of her residency at Eyebeam in NYC, 3D modeling, 3D scanning, 3D printing, and storytelling to re-create monstrous female/queer figures of Middle Eastern origin, using the traditions and myths associated with them to explore the catastrophes of colonialism, patriarchy and environmental degradation in relationship to the Middle East.

MFA EXHIBITION

Thesis project: design process

In this section I listed the design process of my work. The pictures of Anahita temple in this section have inspired me regarding the visual presentation of my work. I found some 360-degree pictures of the Anahita temple and pictures of Anahita on ancient vessels and monuments in Iran. I started sketching the environment and the characters including Anahita, guide character, holy plant, etc. I used Adobe Photoshop and a 360-degree grid to paint the 360-degree environments. Then I animated the characters using Adobe After Effect and after that made a skybox using Unity and imported all assets into the software to create the VR experience. For the projection mapping of the installation, I used Mad Mapper software.



Figure 14. Anahita sculpture



Figure 15. My first sketch of Anahita, Acrylic on canvas.



Figure 16. Final figure of Anahita, digital painting on Adobe Photoshop.



Figure 17. Sketches and final 3d model of the sacred plant. Inspired by the Persian motifs. My first sketch is Lotus, a very old Persian motif in Persepolis, Iran.



Figure 18. Persepolis, Takht-e Jamshid (Fars Province, Iran), palace complex of Darius I, (Achaemenid, 5th century BC)

See figure 17 and 18 the inspiration for designing the sacred plant. I was very influenced by the Persian motifs from the past. In Persepolis we see lotus⁶ motifs

⁶ The lotus flower symbolizes spiritual growth, the cycle of human birth, and growth and perfection in ancient Iran. It is also known as the eastern lily in most eastern civilizations.

applied for decorating walls frequently. It has 12 petals, and is a symbol of purity and rebirth, and enlightenment.



Figure 19. MFA Show, Virtual Reality

In figure 19, you see Anahita's positioning in the third scene in VR, holding the holy flower. In this scene, the players meet Anahita goddess and listen to a voice playing from the guide character, who talks about the magical power that Anahita shares with people. In this scene, the player gets the power from Anahita in the skybox and can go to the next scene to rescue the female characters.

I chose to depict female characters nude in my installation because I wanted to show the female body's femininity as the way it is. According to religious beliefs, women should be hidden. They have to cover all their body and hair from men. I was investigating what if we as women do not cover our femininity?

MFA Exhibition (An Immersive Room + A VR Experience)

My thesis show at the light lab in the Digital Arts Research Center building was ongoing for a week. Due to the pandemic, the show was held online. I used the equipment and the lab to create an immersive room by projection mapping on the walls and the performance in front of the wall. I dedicated three of the lab walls for the projection mapping of still images and animations. I recorded the installation using a 360-degree camera and put the link on YouTube. As Figures 20-21 show, I 3D printed the holy, sacred plant and set up lighting in the room. I also had a pair of VR headsets in the room. So, in the case the show was in person, participants put on the headset to experience the VR, as well. Walking around the immersive room, watching the performance, plus listening to the audio was the interactive aspect of my installation. The performance part of the show features a story of a woman who is held captive by ropes, and after struggling to cut the ropes, she is finally free. You see fantasy illustrations of women on the walls which I painted them based on the real women suffering from discrimination in my country. All of these characters address a real woman in Iran.

My immersive room tells the story of women's obstacles in Iran. When the participants enter the room, they see figures of women all captive by a bunch of ropes. The concept of ropes extends to all rooms, illustrations, and then in the VR experience, we still see ropes until the player can rescue all women. The transition from the Black and White in the immersive room to the colors in the VR experience tells us something

about passing from bad to good, ignorance to dignity. Here is a link to my online MFA show: <https://danmmfa.ucsc.edu/marjan-khatibi/>



Figure 20. MFA Show, Immersive Room



Figure 21. MFA Show, Immersive Room



Figure 22. MFA Show, Immersive Room



Figure 23. MFA Show, Performance, Immersive Room

There are some small magical flowers 3D printed with a catalogue of the show, in the room. In the catalogue participants see the story of women activists and their pictures (the real face of women who are subject to discrimination in Iran). So, the visitors could take one flower and the catalogue with themselves. I want my audience to take the flower home because whenever they see it reminds them that they are strong and confident. So, they can help other people and make a change in their society.

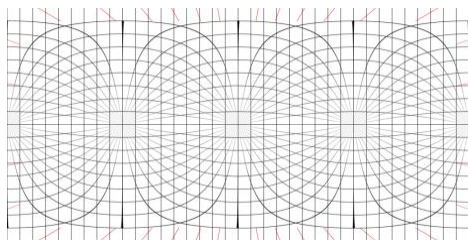


Figure 24. 360-degree grid.

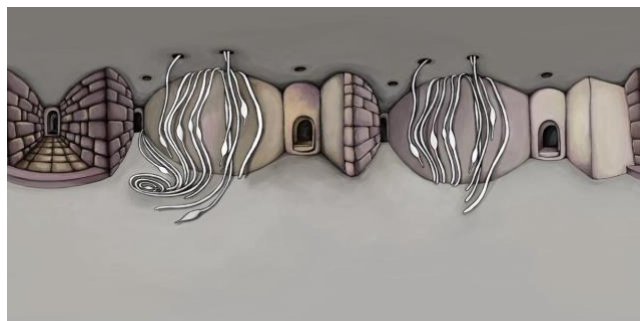


Figure 25. MFA Show, 360-degree environment of Anahita temple, VR

See figure 23, the 360-degree grid that I painted the environments for my VR experience based on. I was also inspired by 360-degree pictures of Anahita temple in Iran (see figure 24).



Figure 26. MFA Show, VR Scene 3.



Figure 27. Anahita temple, Iran



Figure 28. MFA Show, VR Scene 3, 360-degree painting.



Figure 29. Anahita temple, Iran



Figure 30. Anahita temple, Iran, 360-degree image.

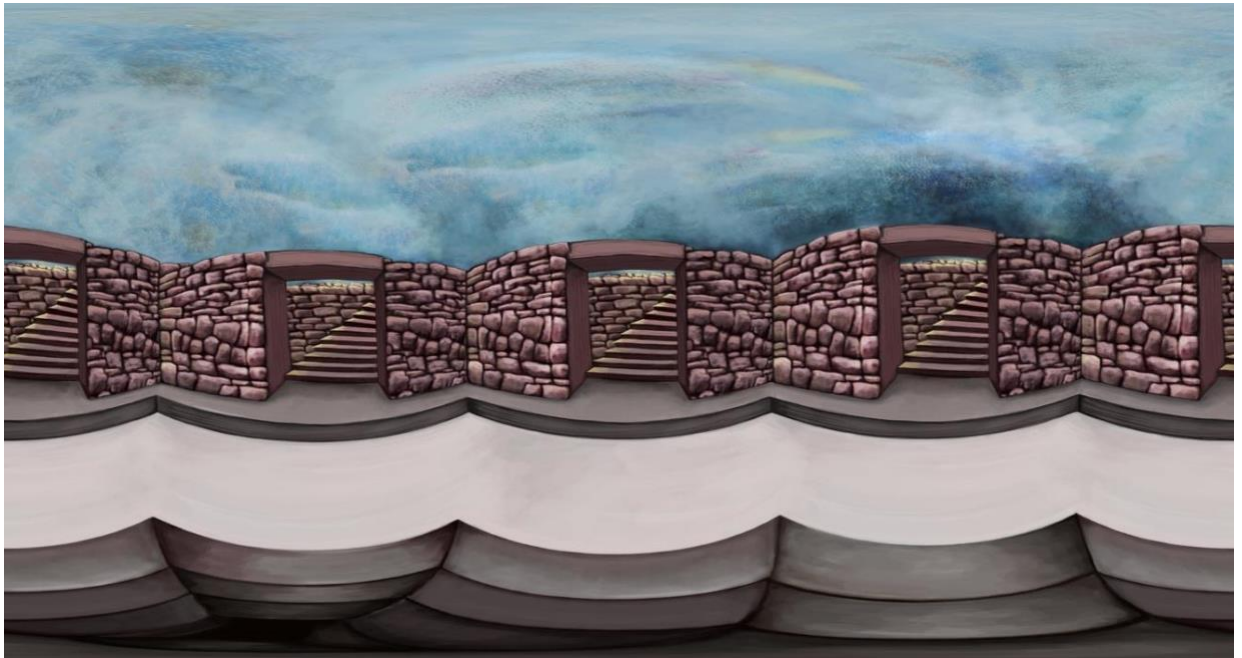


Figure 31. MFA Show, VR Scene 3, 360-degree painting.

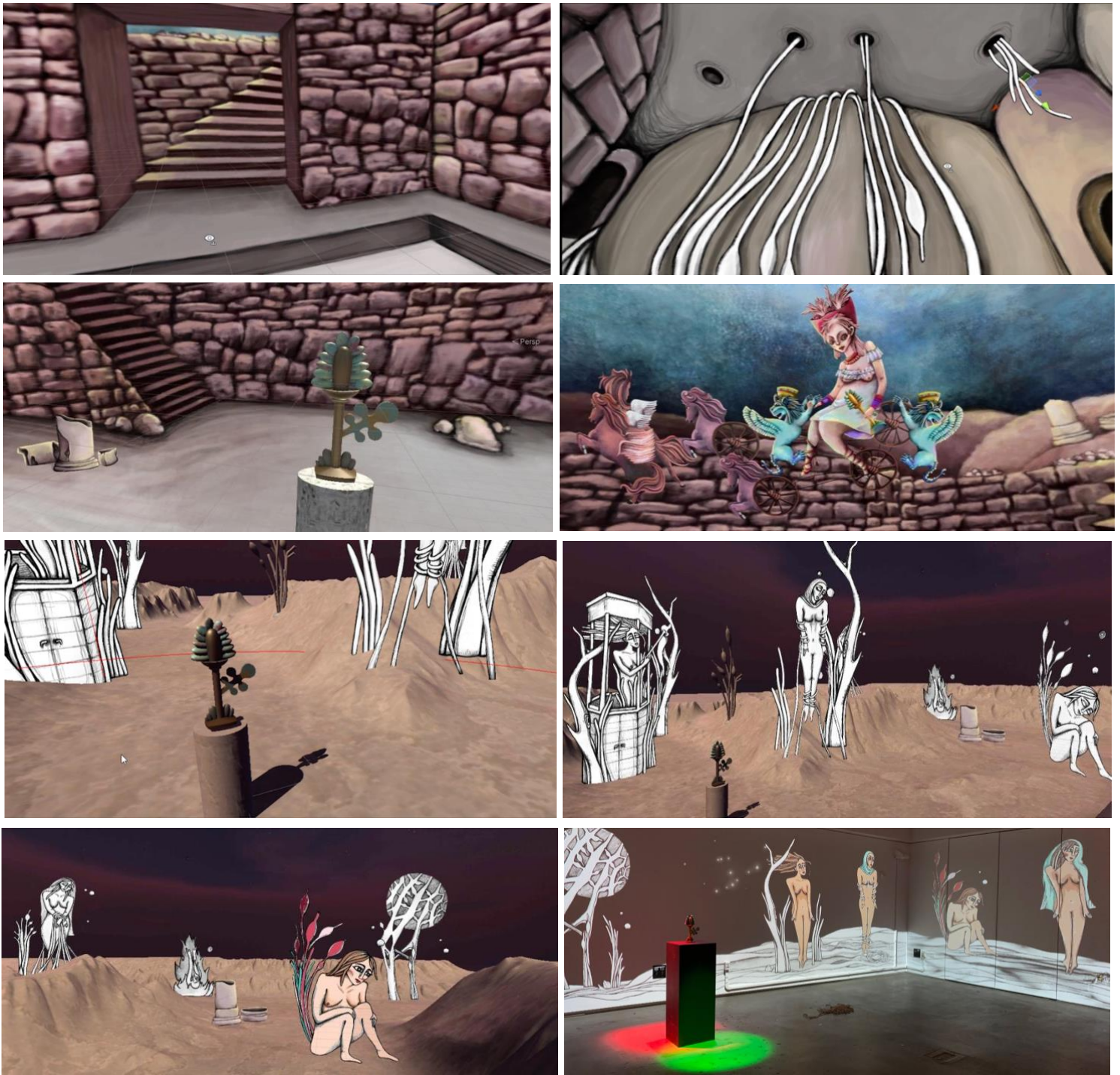


Figure 32. MFA Show, VR experience, Scene 1 to 5. Scene 1 and 2: Player walks around Anahita temple Scene 3: Player meets Anahita. Scene 4: Player gets the holy flower and rescues all women. Scene 5: The player goes back to the real room and sees all women characters free and colorful.

This project commemorates the brave protesters and women of my country who fight for freedom and equity, and who are subject to discrimination: Yasaman Aryani, Saba Kordafhsari, Sahar Khodayari, Romina Ashrafi, Marzieh Ebrahimi.



And many more...

CONCLUSION

As an installation, *Virtual Empowerment* presents its own immersive room to engage the participant to walk through the story. The projection mapping on the walls communicates the real situation of Iran's society. The performance portrays a real figure, a female body, as a representative of all women of the country. The bodily relationship of the performer and participants creates an emotional impact on the viewer so that they can absorb the story in a deeper way. The lighting and drawings on the walls give people time to comprehend the real-world content in a physical room and get to know the fantastical imaginative style of the work before wearing the VR headset and experiencing the virtual world.

I focused on creating a Virtual Environment to form a fantastical, imaginary space of my own to make a relationship between the possible and impossible, real and unreal, physical and virtual. I did this by exhibiting non-changeable still images on the walls intersecting with changeable animated images in VR. The color transition from black and white in the immersive room to the color in the VR experience changes the mindset from desperation to hope. This concept enables the participant to change their mindset about digital technology and the possibilities, features, and utilities that it brings to life. The goal of VR usage was to use it as a tool for empowering people and making new meaning of immersion. Instead of putting on somebody else's shoes or empathizing with the suffering of characters, the participant can try to understand the

characters by being a separate active player in the story, and ultimately the viewer feels empowered and capable of change through the virtual experience.

It was a challenge to write a narrative about a particular social issue and find a solution. However, the intention of the piece is not to solve social problems. I did not intend to impose my point of view on the story. I've encountered the challenge of creating flexible storytelling that includes many perspectives and borrows some values from the past. To expand this, I'd like to consider different ways of referring to ancient literature, using myths and stories as resources, and bringing them to our modern life. The old stories are tangible and compelling, and they carry important lessons for our modern life.

My personal engagement with media technology is pretty new. I had to overcome many challenges using VR technology and I conducted extensive research during this time. As a woman coming from a diverse background from a highly patriarchal society, my initial inability to use technology in my country of birth is not surprising. I chose VR as the best way to share the story because it gives me the chance to have my own fantasy space with magical realities, when I cannot have a room of my own in the real world. The strategy of escaping into a fantasy world, creating my own space, as a coping mechanism is a very important part of my VR piece. What VR did in my project was make a room of my own in a simulated space; in this space, a fantasy goddess shares her power with my participants and empower them to cope with unpleasant and terrible things. My space provides a significant resolution regarding things that cannot be resolved in life. Although VR cannot be expected to perform as

an empathy machine, in my piece, it broadens the participant's power to overcome the impossible.

Virtual Empowerment is part of my larger artistic process and practice regarding social issues. I want to continue my research around Extended Reality (XR) and the impact of this technology on the future of storytelling, investigating the potential of using this technology for social impact. I am investigating the potential of VR technology for empowering people regarding mental health, disability, and rehabilitation and taking advantage of the concept of empowering people through a virtual environment.

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APPENDIX



FIG 33. MFA Show, Immersive Room



FIG 34. MFA Show, Holly Flower



FIG 35. MFA Show, VR headset



FIG 36. MFA Show, Immersive Room



FIG 37. MFA Show, Immersive Room

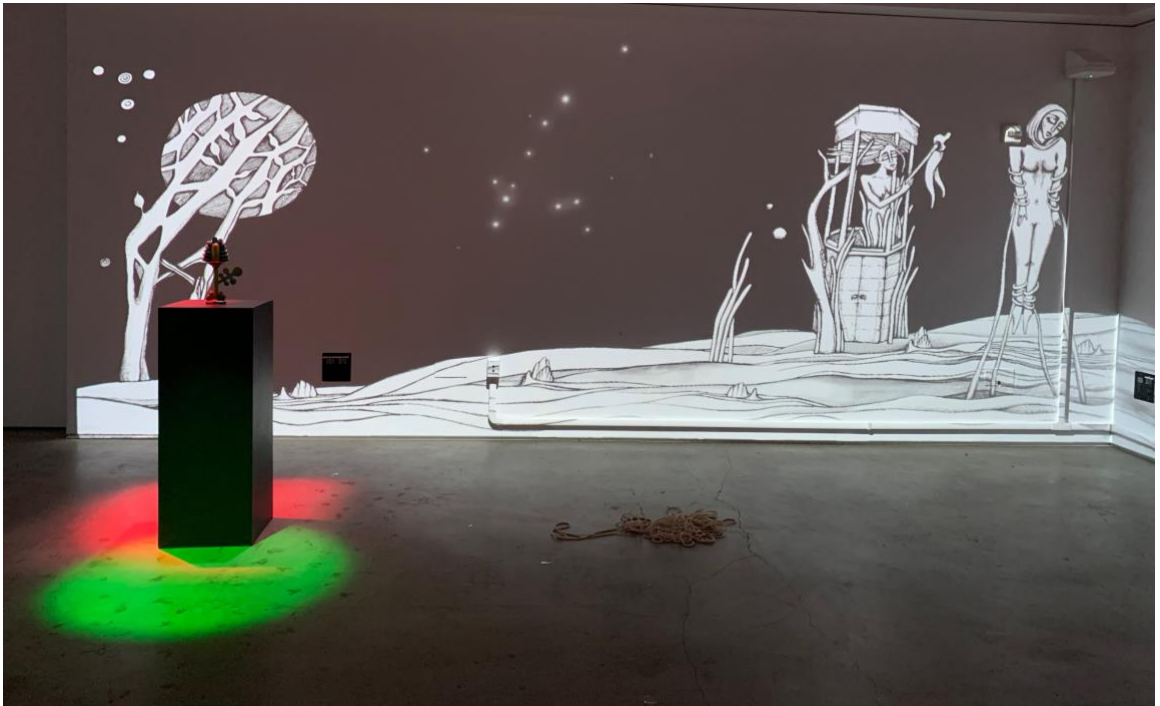


FIG 38. MFA Show, Immersive Room



FIG 39. MFA Show, Immersive Room



FIG 40. MFA Show, Immersive Room



FIG 41. MFA Show, Immersive Room



FIG 42. MFA Show, Immersive Room



FIG 43. MFA Show, Immersive Room



FIG 44. MFA Show, Immersive Room



FIG 45. MFA Show, Immersive Room