

POSTHUMANIZING THE EYE:
CREATING DISTRIBUTED GAZE THROUGH
MACHINE ART

A Master's Thesis

by
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Ankara

June 2020

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POSTHUMANIZING THE EYE

Bilkent University 2020

To my fearless, amiable mother Bahar
and
inventive, witty partner Alp

for their endless support and faith in me.

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GAZE THROUGH MACHINE ART

The Graduate School of Economics and Social Science
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by
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ANKARA

June 2020

I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Fine Arts in Media and Design.



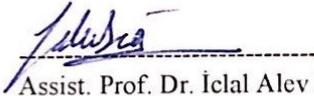
Assist. Prof. Andreas Treske
Supervisor

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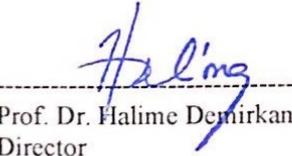
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ABSTRACT

POSTHUMANIZING THE EYE: CREATING DISTRIBUTED GAZE THROUGH MACHINE ART

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This thesis explores the adaptation of distributed cognition theory to the concept of distributed gaze between the artwork and the viewer, through machine art. This mechanical mixed media eye sculpture displays the probability of sharing the gazing agency between the human and the non-human actor. This project is not merely representing the eye but rather post-humanizing it, arguing that this recreation of the human organ will present the viewer with a new paradigm that puts both parties in a proactive position. Beyond the technological materiality's implication, without disconnecting with the hardware component, the human eye meets with its muse, the human.

Keywords: Distributed Cognition, Distributed Gaze, Machine Art, Posthuman, Sculpture

ÖZET

GÖZÜ İNSANLAŞTIRMA ÖTESİ: MAKİNE SANATI İLE DAĞITILMIŞ BAKIŞ YARATMAK

Dilsiz, Diba

M.F.A., İletişim ve Tasarım Bölümü

Tez Danışmanı: Dr. Öğr. Üyesi Andreas Treske

Haziran 2020

Bu tez dağıtılmış kavrama teorisini izleyici ve sanat eseri arasındaki dağıtılmış bakış konseptine uyarlanma sürecini makine sanatı üzerinden keşfediyor. Bu mekanik karma sanat göz heykeli görme aidiyetinin insan ve insan olmayan katılımcılar arasında paylaştırılabilme olasılığını gösteriyor. Bu proje yalnızca gözü temsil etmiyor, aksine gözü insan ötesine taşıyor. Bu insan organının yeniden doğuşu izleyiciye sanat eseri ile birlikte proaktif pozisyona gelebileceği, yeni bir örneklem sunduğunu iddia ediyorum. Teknolojik materyalizm çıkarımının ötesinde, donanımdan kopmadan, insan gözünün yeni sanatsal ürünü ilhamı ile tanıştırıyor; insan.

Anahtar Kelimeler: Dağıtılmış Bakış, Dağıtılmış Kavrama, Heykel, İnsan Üstü Teorisi, Makine Sanatı

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CHAPTER 1

INTRODUCTION

Human-beings rationalize the outside world through their senses. They hear, touch and see their surroundings. Sight is a fascinating concept at its core. Throughout the centuries it is been researched and theorized by many scholars working in different disciplines, from the physical to the metaphorical. Also, the concept of sight is linked with many disciplines, such as art. Many activities they participate in are shaped by sight, like experiencing artworks. While they are interacting with artistic practices like paintings and sculptures, the first interaction starts with seeing. With or without active interaction with plastic arts, seeing the works leads to experiencing the art.

This thesis and the accompanying praxis, named *'Eye' See You*, is constructed around the concept of sight, and how humans are experiencing art. The goal is creating an immersive shared experience through the usage of the technical and artistic methodologies of mechanical art, motion tracking through data processing, reactive and non-reactive systems, craftsmanship and technical construction. While the main aim in using these methodologies is to create a mechanical sculpture which

embodies the sense of sight, considering sight alone is a passive interaction, the secondary aim with this project is shifting the properties of sight and constructing it as a major actor in active interaction. While the viewer gazes at *'Eye' See You*, it is also gazing back and it is sharing their agency of gazing with them.

'Eye' See You is fueled by two distinct theories, machine art and posthumanism. Machine art is both serving the functionality and the concept derived from posthumanism. This representative sculpture is post humanizing the eye and sharing the agency of the eye. Hayles' Posthuman theory focuses on distributed cognition and in this sculpture, the conceptual aim is adapting the distributed cognition theory into art and creating the concept of distributed gaze. To achieve this aim, the disembodied information of gazing is embodied in this sculpture and the gazing agency is shared between the human and the non-human actor. This new embodiment is achieved by machine art and its properties, the theory of posthuman, in Hayles' conception, internalizes the concept of the machine and works with on the machine/human relationship and the future possibilities of this relationship.

Machine and its advancements changed several subsections of occupations and thought processes, not just physical elements created by civilizations. Everyday life had been changed, work environments had been changed, communications had been changed, academic theories had been changed, and the predominant discipline relating to this thesis had been changed; namely art and the artistic approach. The factors mentioned here should not be misinterpreted, change is not finalized yet, it is still in process and will be in the process of innovation and change. The underlining aspect of this thesis changes, thus a reflection of these changes in the art and

artworks and how it interpreted by art consumers.

The second chapter is dealing with the notion of machine art. In the history of machine art, there are inconsistent and antipodal formulations and interpretations regarding the meaning and concept of it. These fundamental differences by the virtue of machine art's symptomatic nature. 'Machine' by itself has no concrete conceptualization but it is just an associative term (Broeckmann, 2016: 17). There are two distinct elements that contracts its structures [machines], technics and mechanics. Their physical impacts are disputable. The machine is dependent on the human perspective, thus their gaze. Their gaze feeds their brain, thus their thoughts and actions, which leads to their perspective through their prospect to the future.

...dual meaning of the symbolic entity we call 'image'. It is a phenomenon that is both internal and external, and this very duality betrays its anthropological grounding. An 'image' is more than a product of perception. It is created as the result of personal or collective knowledge and intention. We live with images, we comprehend the world in images. And this living repertory of our internal images connects with the physical production of external pictures that we stage in social realm. (Belting, 2011: 9)

In the framework of this thesis, Hans Belting's image theory about our mental realm and the impact of the outside world on our thought process is linked by machine art. Mechanical innovations affect the conceptualization of machine art and its movements. Interpretations of the machine and the effects of it on the art aspect are also explored in the context of post humanism.

In the 20th Century, there was an umbrella concept above all and branded out to the many other fields; beyond machine art, human versus machine. There are dystopian and more optimistic perspectives about human-machine relationships and many scholars explored this subject "...the machine always has the human subject as a

companion, and highlights the relation that human subjects have toward technology.”

(Broeckmann, 2016: 22). In this context of human and machine relationship,

posthumanism plays a crucial role in this thesis.

The beginning of the modern machine discourse is thus marked by the theoretical constructability of humans and their similarity to machines. Since Descartes, the assimilation of machines to the human form—anthropomorphism—is complemented by the idea of the assimilation of the human to machine form—mechanomorphism (Broeckmann, 2016: 22)

Humans are the creators of the machines and as specified previously in Hans

Belting’s argument about the things created by humans comes from their imagination

and their imaginations are shaped by the things they see, the experiences even can be

stated as what they are. Human bodies are the prototypes for the things they created.

Functionality aspects and most of the time movement patterns derived from their

own bodies “...machines might possibly have been designed after the prototype of

organs and organisms ...” (Hörl & Hagner, 2008 as cited in Broeckmann, 2016: 26).

When humans are considered as a prototype for the machines, the posthumanism

aspect gains more relevancy.

The third chapter is dealing with Hayles’ posthumanism and distributed cognition.

Posthuman is defined by many theoretician and scholar, however main dividing point

is not how they define it but their standpoint against human and machine interaction.

There are positive and negative implications for different scholar. Being a posthuman

does not mean to transformation of the human to a self-aware robot or leaving

formation of the human body behind and creating a new civilization, and population

of cybernetic beings. Becoming posthuman is to create extensions that work outside

of the human body, which embodies the information coded into it and work with the

human.

Distributed Cognition theory builds upon the notion of machines works with the human-beings. Basically, distributed cognition is a machine built by a human, who disembodies an information serving a specific function and embodies this informational pattern into a machine, thus while humans are working with that machine they are sharing their cognition with the machine's cognition born from the information it embodies. The aim of this aspect is creating a distributed gaze between man and art, which is also a machine, and in the second part of the theoretical discourse of this thesis, it investigates the adaptation of distributed cognition to distributed gaze.

The main motivation of this project, thus the theoretical framework of it comes from the indisputable effect of the machines, mechanization of it and also reactional properties that can be examined through post humanism. This project's technical goal is to post humanize the human eye through machine art in simple words and it is a mixed media machine sculpture of the human eye. The utmost logic of the sculptural aspect is materiality, but materiality in a sense of this artwork occupies a space in the material world like human beings, it is not just digitally creating a visual representation of the eye. As a physical *embodiment*, it is a molecular element like humans, which occupies material space like humans, its being is not bound to screens. The space it occupies cannot be turned off or closed. This sculpture could not be constituted as 'alive' as that would fall into the realm of bio-art, however, its presence as a molecularity is undeniable. Thus, this presence creates a metaphysical relation between the viewer and the sculpture, it is serving the aspect of *reality*, not digitally created reality but a physical reality nonetheless. While post humanizing the

eye, and replicating in the contextualization in the posthuman theory, it intensifies the illusion of *reality*.

The fourth chapter is evaluating four different artistic inspiration for the project. Breakdowns and inspirational aspects of the Seiko Mikami's *Desire of Codes*, Stelarc's *Third Hand and Handwriting*, and Wim Delvoye's *Cloaca*. Their conceptual inspirations help to shape this project.

The fifth chapter of this thesis is displaying documentation and conceptual part of the project and starts with the purpose and conceptualization. Also, this chapter summarize the ideation phase of this project throughout the start. The form of the project and technical properties are discussed and explained in the second half of the chapter. Due to the Covid-19 pandemic '*Eye*' *See You* could not have been physically built and exhibited, this is why the last part of the documentation is dedicated to the virtual creation process.

The main aim of this project is to create a relationship between the artwork and its viewer. Replicating the viewer's actions while they observe the artwork itself, creating an experience, circumstantial relationship, sharing or mainly distributing the gazing agency between them. The viewer will share the observational gazing agency to the object which they have gazed. This study is adapting and exploring the possibilities expressed as a major point of the posthuman theory into a new conceptualization through machine art and creating experience derived from this adaptation.

CHAPTER 2

MACHINE ART

2.1 How Machine Becomes Art

Machine art in simple terms can be considered as machine integrated art creation.

Whether the work is created by machines or it becomes the machine itself, both can be considered as machine art. The complicated part is ‘plausibility’ because machine art is not a set genre or a movement “...“Machine art” is neither a particular artistic movement nor a genre of work, but rather a myth, or a rumor, that has been around for a hundred years, no more.” (Broeckmann, 2016: 6). There are not fixed conceptions or general understanding about this term.

In early 20th Century machine art was considered as purely mechanical inspired, machine aesthetic and functionality. The lack of a fixed definition for machine art created protracted the narratological and metaphorical standpoints towards machine art. Machine art was composed by two different approaches, the first one is an artwork made by machinery, and the second approach the artwork itself is a machine.

Machine derived artworks are not always conceptualized as machine art, not all machine-made artworks can be named as machine art. Machine art derives its meaning from the machine itself and in this age technology and machines are vastly improving in a small amount of time. “The contemporary understanding of the “machine” is extremely diverse, and has changed in parallel with the development of technological systems.” (Broeckmann, 2016: 6). Machinery art gained vast recognition in the early 20th Century with several machine art themed exhibitions. One of the most famous ones is the exhibition called *Machine Art* at MoMA in 1934. This exhibition contained machine made objects and these objects were presented as sculptures and the main objective was aesthetic and beauty of the machine-made objects.

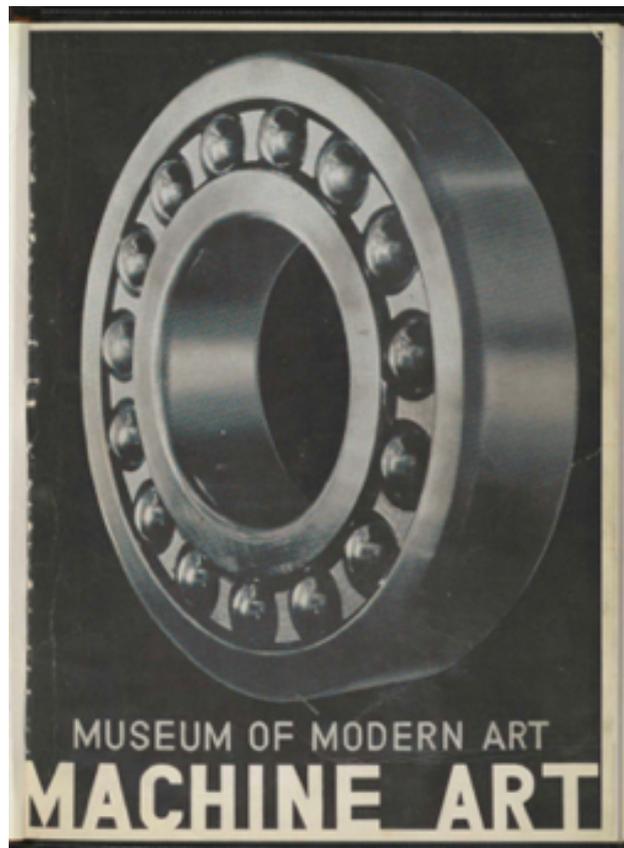


Figure 1, *Machine Art: March 6 to April 30, 1934 Exhibition Catalogue, The Museum of Modern Art, Exhibition Poster.*

Machine art does not have a concrete explanation or fully formed guidelines. However, some artists and writers appropriated the term to their own creations or studies. The definition of the term shows alteration from person to person or movement to movement. To be able to grasp the notion of the machine art the second part of the chapter is dedicated to some of the main movements and theories which appropriated the machine art to their perspective of creation and study, and also which part plays an integral role of the creation of the *'Eye' See You*.

The history of machine art is a complicated notion by its nature. The combinational aspects of two different domains and creating another conceptualization inspired by several different connotations -and many times not the same connotations- left machine art to uncertainty and open to interpretations. Narratology of Machine Art has two different milestones in the 20th Century. The first one was 'metaphorical turning point' in Broeckmann's words, Pontus Hulten's 1968 exhibition 'The Machine as Seen at the End of the Mechanical Age' was changing the direction of mechanical understanding. "The interest that Hultén brought to the notion of the machine was topical rather than technological." (Broeckmann, 2016: 49). The curatorial exhibition held by Hulten presented works from a wide range of artists from futurism, constructivism and surrealism and brought conception to machine art not complete focus on pure mechanism thus display the potential of the machine art. This particular exhibition was not the first or the last exhibition in the subject matter, however consecration of excepted as milestone comes from the focus of aesthetic more than functionality and art works not exceptionally required to have technology integrations. Machine relation was held in the broader spectrum, narratology integrated relation was the subject matter. "Hultén's exhibition instead sought to

integrate the machine-related artworks into a broader modernist narrative, which he saw at an important crossroads due to the emergence of computer technologies.” (Broeckmann, 2016: 50).

The second milestone is considered dated way back than the first point Broeckmann indicates, the influx of the futurist perspective “The advent of futurism brought a radical revaluation of the machine which, at the beginning of the twentieth century, comes into view not only as a motif of representation but as a method and principle of artistic creation.” (Broeckmann, 2016: 42). Which brings the effects of movements towards the machine art.

2.1.1 Movements and Views of Machine Art

In the early 20th Century, machine art was emerging as a new concept for artists to explore, the sphere of influence of machines grew with time as new mechanized technology gained prominence in the daily life of people. The changes and developments that stemmed from machines resulted in the formation of new perspectives.

...they [images] colonize our bodies, so that even if it seems that we are in charge of generating them, and even though society attempts unceasingly to control them, it is in fact the images that are in control. Images both affect and reflect the changing course of the human history. (Belting, 2011: 10)

The colonization of the images expressed towards the human mind can and will show differences between one and the other, just as people are under the influence of different aspects and notions, this difference in perspective is no different.

Machine art is the resultant case of two disparate media coalescing and forming a new continuity in study and methodology. Thus, varying attitudes towards the subject matter were inevitable considering the nature of the emergent medium. The first major stand towards machine art was the dadaist approach. In 1920 the first international dadaist art fair held in Berlin, and in that exhibition one aspect came out which was a particular printed slogan, 'Art is dead. Long live Tatlin's new machine art [Die Kunst ist tot. Es lebe die neue Maschinenkunst Tatlins]' (fig.2).



Figure 2, First International Dada Fair, Otto Burchard Gallery, Berlin, 1920: "Art is Dead - Long live Tatlin's New Machine Art [Die Kunst ist tot. Es lebe die neue Maschinenkunst Tatlins]".

Tatlin was an innovative artist in his time and he was rejecting the flat-surfaced medium and hegemony of it in the art circle. His chosen materiality was mostly three-dimensional objects like wood, metal, and found materials. "combining purely artistic forms with utilitarian intentions. The fruits of this are models which give rise to discoveries serving the creation of a new world and which call upon producers to control the forms of the new everyday life" (Bann,1974, as cited in Monoskope, 2020). His main point of view toward art and also machine art was taking the autonomy from the technical aspects of the machine and giving it to the artist. "the innovation of art through the detachment of technical materials from their industrial context in order to turn them into artistic materials." (Broeckmann, 2016: 11).



Figure 3, Futurist Manifesto by Filippo Marinetti in The Figaro, February 20, 1909.

Futurism has a major contribution to machine art, Filippo Marinetti wrote the first manifesto focusing on machine art and it was published in *Le Figaro* in February 20, 1909, however like Broeckmann suggests the most detailed manifesto considering machine art was also written by futurists, which was 'The Aesthetic of the Machine and Mechanical Introspection in Art' authored by Enrico Prampolini. Prampolini focused on the aesthetic of the machine and the productivity of it as well. Machine art was seen as a new symbol for productivity. Second generation futurist Prampolini focused on mostly symbolic and metaphorical properties of machines and sought potentiality out of it for new aesthetic movement.

The first futurist encounters with machine art in 1909 with Marinetti opens doors the 'Manifesto del Macchinismo' by third-generation futurist Bruno Munari which has pessimistic opinions about machines (Broeckmann, 2016: 14). He believed machines will be able to steal the control agency held by humans. He warns people about the possibilities of 'evil' machines in literature and his manifesto. This is the reason he encounter with the machine art, and start to create purposeless machines. "The machine of today is a monster! The machine must become a work of art! We shall discover the art of machines!" (Munari, 1942, as cited in Broeckmann, 2016: 15). His art depiction fueled by machines consist of uselessness of the machines. "...Munari argues for an oppositional aesthetics of dysfunctionality and uselessness..." (Broeckmann, 2016: 15). His main aim in the creating the useless and dysfunctional machines are taking the agency of control from it and make restrain the machines from taking over the functionality of capita. "they [machines] are useless because they do not make anything, they do not eliminate labour, they do

not save time and money, and they do not produce any commodities.” (Munari, 1937-2012: 202).

The machine art conceptualization is not fully formed or concise like previously mentioned. One of the reasons of this incomplete notion is computer generated art. If machine art can be completely classified as machine made art, all digital art will be under the umbrella of machine art. “The term “computer art” is rarely used in today’s cultural discourse. To use the term is to impart a sense of nostalgia, to reminisce about a bygone era of pioneers and antiquated machines.” (Taylor, 2014: 1).

However discussion is not limited with machine made art like previously mentioned. However, if *genre-lization* defined by form qualities and quantities, ‘computer art’ could be defined as machine art. “Students are seldom interested in the computer as a singular type of technology—a medium defined by a physical machine—but are absorbed in digital modalities across diverse social and geographical spaces.” (Taylor, 2014: 1). Definition behind the computer-generated art referred as ‘digital art’ but not ‘machine art’ comes from old concern like Munari stated before, unease feeling of shared control and agency.

Most of us do not even want a machine of any kind to succeed in conceiving any art form at all. The arts are usually presented as our last refuge from the onslaughts of our whole machine civilization with its attendant pressures towards squeezing us into the straitjacket of the organized man. (Beaman, 1960s, as cited in Taylor, 2014.)

Machine art is controversial and a subject of unease in the history of art.

Conceptualization of it consist of pessimistic and optimistic theories. Historically, the question of authorship relates to one of the primary concerns when discussing machine art, creating an unease in many artists regarding the integrity of their work.

This study, however, utilizes this aspect of machine art and post humanism to create a dynamic interplay between the viewer and the artwork, thus utilizing the historical notions and concerns regarding the genre to re-contextualize authorship within the boundaries of interactivity.

2.1.2 Art of the Machine Notion in Mid-Late 20th Century

“For us, in imagination and in other practice, machines can be prosthetic devices, intimate components, friendly selves... The machine is not an *it* to be animated, worshipped, and dominated. The machine is us, our processes, an aspect of our embodiment. We can be responsible for machines; *they* do not dominate or threaten us. We are responsible for boundaries; we are they.”

-Donna Haraway

Machines in artistic fields opened up possibilities, creation processes changed and new medium of machine integration started to play a new role in process and embodiment. The term “machine art” was seen as inconsistent and conflicting because of a lack of fully developed definition or integration. “The inconsistent use of the term “machine art” that can be gleaned from these few examples as symptomatic of the vagueness with which the artistic engagement with technology has been framed discursively throughout the twentieth century.” (Broeckmann, 2016: 17). When exploring the conceptualization in the machine art the main frame is that machine used as a processor, as an instrument rather than conductor in the main scheme, however mostly with the posthumanist integration, the machine becomes one of the main domains, a co-product with the body, might as well companion “...the machine always has the human subject as a companion, and highlights the

relation that human subjects have toward technology.” (Broeckmann, 2016: 22). Even for some earlier examples engineers and artists worked together, one of the most famous examples for the artist, engineer co-production dated back to late 60’s (fig.4). “... the exhibition [*The Machine as Seen at the End of the Mechanical Age*] concluded with a section organized by the New York-based initiative Experiments in Art and Technology (E.A.T.), which sought to foster a particularly “American” style of cooperation between artists and engineers.” (Broeckmann, 2016: 49). *The Machine as Seen at the End of the Mechanical Age* exhibition hosted more than hundred artists from five different centuries, 15th to 20th. (Medien Kunst Netz, para.1). This exhibition was seen as display of human machine encounter and also machines’ effect on art.

Standing astonished and enchanted amid a world of machines, these artists are determined not to allow themselves to be duped by them. They have shown that while different aspects of our relations to machines may conflict, they are not necessarily contradictory. (Hultén, 1968 as cited in Medien Kunst Netz).

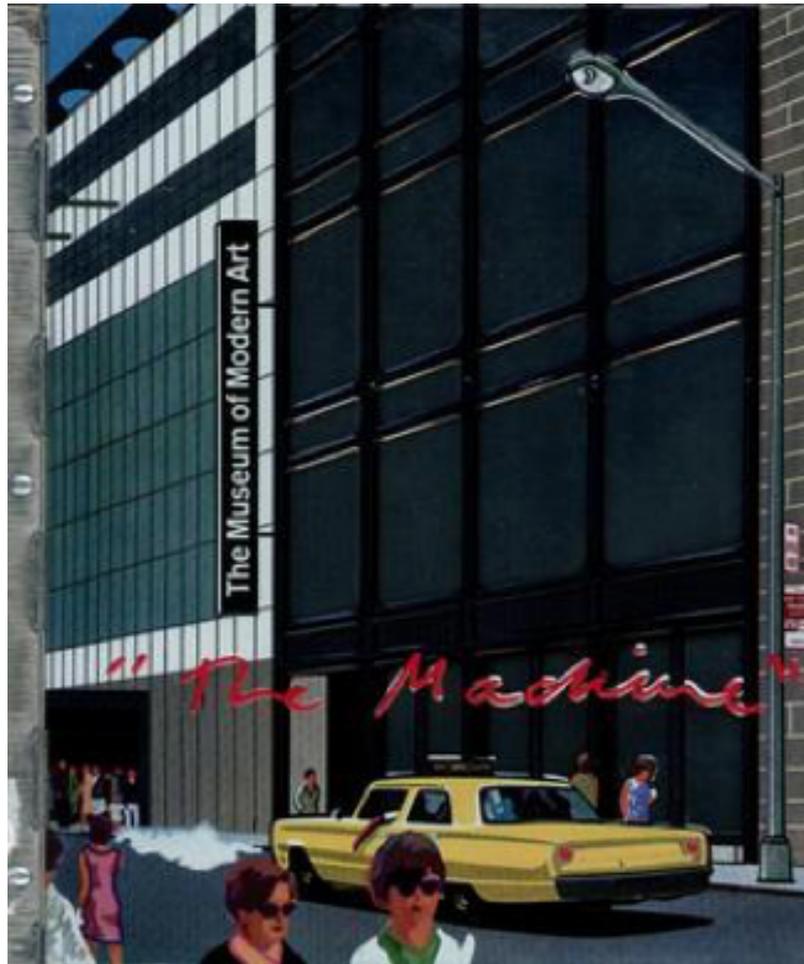


Figure 4, The Machine as Seen at the End of the Mechanical Age by K. G. Pontus Hultén, 1968, Exhibition Catalogue.

Starting from 1970s body and embodiment integrated machine art becomes an arousing subject in the art community. The limitations of the human body were challenged through machines, however in the performative arts their main focus would be the integrity of the physical body rather than the notion and the idea of the body. Physical challenges become the subject and machines become the challengers of that integrity. Physical properties of the body seemed limited after machine encounters last century and human and machine put in a position of confrontation by some artists like Stelarc, Erik Hobijn and Chris Burden (Broeckmann, 2016: 170).

the body art of the 1970s and 1980s, which, despite its often destructive ways of challenging the human body, does not put the integration of mind, identity, and body into question, the artists of the machine body deconstruct its integrity with regard to its movement, perception, the processing of information, and the spatial and functional properties of the body as object. (Broeckmann, 2016: 170.)

Feministic views through machine art was also a theme conducted in late 20th century. Body oriented socio normative structures discussed, in less brutal manner by artists like Carolee Schneemann, Helen Chadwick, and Valie Export. (Broeckmann, 2016: 171).

Body and machine encounters throughout the history of machine art and the challenging nature of some performative arts in the subject matter brings up the discussion of human nature and machine compatibility. The next chapter is dedicated to the studies and themes towards not the human versus the machine, but the human and the machine.

2.2 Human and Machine

when the term “machine” is used, it most often appears to designate a particular thing, an object, a mechanism, or a process, and yet in many of these cases the concept actually designates not a particular class of objects, but a relationship that human subjects have to the world. (Broeckmann, 2016: 17.)

Human-beings are living on this planet since the start of their existence, and they have always been at a place where they struggled with their environments in the

early ages, and for them to be able to deal with their environment, they built tools even early on in their existence. “So now the evidence for making and using tools dates back to half a million years before the origin of our genus. Making tools almost certainly helped toolmakers survive.” (Pobiner, 2016, para.7). A question about tool making can arise after this fact is given, are humans the only ones who are using tools? The answer to this question according to studies, is no. Also, some animals tend to use tools for easing some processes like eating. “Chimpanzees use stone tools to crack open nuts and even make wooden spears to hunt smaller primates called bush babies, suggesting that the capacity to make and use tools is rooted deep in our evolutionary history.” (Pobiner, 2016, para.8). In the given circumstances, the reason tool making is seen as a human domain is mainly because animals are not using tools to make new tools, they are not trying to make advancements in functionalities. (Pobiner, 2016, para.8). Also, another main reason humans are accepted as the main practitioners of tool making is humans produce tools for future intents and purposes. (Broeckmann, 2016: 18).

The development behind the machines humans are making today is dated back to the principles of tool making, advancement and creations for future intents and purposes. At the same time the major difference between tool and machine needed to be highlighted for further arguments, a tool is handled in order to be able to work, however the case is different in the machines, it was required to be tended at first, but in time and with advancements most machines are not required to be tended anymore. (Broeckmann, 2016: 18). In time machines started to be more independent from humans.

A new type of machine, like the servomechanism, does not even require tending any more, but only occasional maintenance. A thermostat which controls the temperature in a modern apartment does not have to be tended in order to function properly. This mechanism directs its working mechanism itself. It possesses a spontaneity that is independent of the human. (Günther, 1963 as cited in Broeckmann, 2016: 18)

Gotthard Günther explained the history of machines in his book *The consciousness of the machines: A metaphysics of cybernetics* (*Das Bewußtsein der Maschinen. Eine Metaphysik der Kybernetik*). According to Günther, machines can be evaluated in three categories, “Archimedean-classical machine,” “Transclassical machine,” and non-Archimedean or “Cybernetic machine”. (Günther, 1963 as cited in Broeckmann, 2016: 19). Archimedean-classical machines consist of moving mechanical parts, it is not processing any information, it is tended, however Transclassical machines are not working mainly with movable parts but with electro magnetic fields, like a thermometer. (Günther, 1963 as cited in Broeckmann, 2016: 19). The third machine he describes was one of his major subjects, “Cybernetic machines”, the time he was working on the theoretical aspect of the machines the third machine he was describing, theorizing was not existed. That is why he was working on an idea of cybernetic machines. “Thus, the idea of the cybernetic machine aims at the realization of a mechanism which can record data from the external world, process them as information and then pass them on as control impulses to the classical machine.” (Günther, 1963 as cited in Broeckmann, 2016: 19). Günther was emulating the human body to machines when he was describing them, he was comparing the first machine with human arm and the second machine with human brain, thus leading that Transclassical machines can process and also produce information. (Günther, 1963 as cited in Broeckmann, 2016: 19).

The comparison aspect of the debate about human, machine interlace highlighted the aspect of help and productivity. Machines are seen as benefit and advancement tools by some scholars "...the machine always has the human subject as a companion, and highlights the relation that human subjects have toward technology." (Broeckmann, 2016: 22). Machines are helpers in this case, but at the same time the notion is these helpers made by 'man' by means different than 'man'. "...the concept of the "machine" is always deployed in contrast to the human. Whereas the "technical," in its different guises, exists independent of the human, "the machine" is invariably coupled to "man." (Broeckmann, 2016: 26). Even though aforementioned contrasting notion is presence it is also jointly working with comparison aspect. One of the conditional conception through definitions through machine and human is intrinsic to this particular study. Humans are prototypes for the machines, and also vice versa.

...machines might possibly have been designed after the prototype of organs and organisms. This assumption would not only imply that in human history the biological is characterized by the prosthetic, but it also shows that there is nothing beyond the inextricable relationship of human and machine, irrespective of the question which of the two is the prototype for the other. (Hörl & Hagner, 2008 as cited in Broeckmann, 2016: 26)

One of the main focuses of this particular project is the discourse about humans being prototypes for the machines. 'Eye' See You, is altering but at the same time replicating the human eye and desires to share its movement patterns with them, sharing their agency of gazing with them.

Posthuman join the agglutinate to the discourse of human and machine relationship. Humans and machines seen as they are working, producing, advancing together, like in Hörl and Hagner's argument they are starting to be each other's prototype. "I

would argue that the modern distinction between human and technics has passed away, and that human and machine have been jointly transformed into new, posthuman forms of subjectivation.” (Broeckmann, 2016: 27). In this part of the discourse another component of this project arises, affecting each other. While ‘Eye’ See You operates, it is not just human prototyped machine, it has the purpose of sharing each other’s agency, it is working not by itself as a non-human actor but interoperating with the human actor. It is not subjectifying the machine but it is contributing to the post humanistic view of the machine, human relation.

CHAPTER 3

POSTHUMANIZING THE EYE

3.1 Hayles' Posthumanism

Being a *being* is a fluctuating concept between material form and informational patterns according to Katherine Hayles. "The posthuman subject is an amalgam, a collection of heterogeneous components, a material-informational entity whose boundaries undergo continuous construction and reconstruction." (Hayles, 1999: 3). There are several different explanations and stand points about posthuman and how to become a post human. Throughout her conception, Hayles presents several explanations to the subject from distinctive angles and derived from sociology, science, technology, philosophy and literature.

Hayles worked on post humanism in different angles of humanistic discipline. She gave four different explanations about the subject at hand. The most important definition according to Hayles was relationship of humans with machines. "Fourth,

and most important, by these and other means, the posthuman view configures human being so that it can be seamlessly articulated with intelligent machines.” (Hayles, 1999: 3). This particular view also carries forward the previous definition by her. “Third, the posthuman view thinks of the body as the original prosthesis we all learn to manipulate, so that extending or replacing the body with other prostheses becomes a continuation of a process that began before we were born.” (Hayles, 1999: 3). Being a posthuman does not simply mean becoming a self-aware robot or leaving the human body behind and creating a population of cybernetic beings. Becoming the post human with regards to the concept, is to create extensions that work outside of the human but with the human. Powered and constructed by human intelligence and becoming an extension of man, not setting aside the material body but working with it, also working around it. However, *embodiment* became a well critiqued and argued subject throughout the conceptualization of human vs machine arguments along with body vs. mind. “...the posthuman view privileges informational pattern over material instantiation, so that embodiment in a biological substrate is seen as an accident of history rather than an inevitability of life.” (Hayles, 1999: 2). The question and explanation always change but the relational subject matter stays the same human, machine and body, mind. This aspect arouses the main configuration of human being, agency. Hence next sub chapter is dedicated the concept of agency.

There are many debates about materialistic forms of a human being between their informational being in late 20th century. One of the main controversial point of view belongs to Moravec, he signifies that the consciousness is a separated medium from the material form itself and believed it is possible to lose blood and bone and breaking the bond between body and mind. Disembodiment of the informational

patterns or to be more concise the entire consciousness is liberating and immortalize the far-reaching part of the mortal one. (Moravec, 1988). This cybernetic structural question about the human consciousness and its body creates several questions and problems theoretically. “Only because the body is not identified with the self is it possible to claim for the liberal subject its notorious universality, a claim that depends on erasing markers of bodily difference, including sex, race, and ethnicity.” (Hayles, 1999: 4-5). Exemplified question and contextualizations of some arguments leads to more socio normative sense discussions. This thesis’ conceptualization also derives from the sociological stand point meshed with technology and psychology.

Human beings are embodied informational patterns in themselves and like previously mentioned use materialistic objects, which also embodies certain informational patterns in itself, to superimpose themselves to a machine in a sense to it to evolve themselves. Disembodied information is the desired outcome for some theoreticians in the future, since human can disembody their information’s and embody in non-biological forms, maybe the future lays in complete disembodiment. “The great dream and promise of information is that it can be free from the material constraints that govern the mortal world.” (Hayles, 1999: 13). However, without the final embodiment process, what is information in the context of the 21st century human can comprehend right now. Without any form and medium to experience and work with it, how can disembodied information received or decoded by the main subject, the human. “...it can be a shock to remember that for information to exist, it must *always* be instantiated in a medium...” (Hayles, 1999: 13). However, the theoretical curiosity is not stoppable for theoreticians, like in any other medium, without any concrete evidence of alien life from earth, Robert A. Heinlein was able to write *The*

Moon is a Harsh Mistress or without any self-aware robots in existence Isaac Asimov dedicated five novels to the subject in mid to late 20th century. Curiosity fuels the possibilities of theories, like in the literate examples some theories fueled by curiosity, like previously Hayles stated, *great dream*.

The point is not only that abstracting information from a material base is an imaginary act but also, and more fundamentally, that conceiving of information as a thing separate from the medium instantiating it is a prior imaginary act that constructs a holistic phenomenon as an information/matter duality. (Hayles, 1999: 13)

Digital or material embodiment of information is created by humans and humans only. Embodiment of an information is not necessarily used to document academic information. Embodiment of the information is derived from the real. “Virtual reality technologies are fascinating because they make visually immediate the perception that a world of information exists parallel to the "real" world, the former intersecting the latter at many points and in many ways.” (Hayles, 1999: 14). Parallelism comes from the creator, which is embodied in the ‘real’ world. However, this is not the signifier for embodied information and its new body does not necessarily fit the conceptual. “In information theoretic terms, as we saw in chapter 1, information is conceptually distinct from the markers that embody it...” (Hayles, 1999: 25). Art is another medium of the depiction of informational embodiment. Artist’s individual encounters with the real, shape the form of the artwork.

The images of memory and imagination are generated in one’s own body; the body is the living medium through which they are experienced. In turn the distinction between memory as the body’s own image archive, and remembrance or the body’s own generation of images has implications for this body experience (Belting, 2011: 11)

Art is another medium fed by information and embodies the individuals' aka artist's informational patterns. The agency of the informational disembodiment and material embodiment lays in the hand of the creator. However, formulation of the artistic creation leads depictions of informational patterns pass the decoding and gazing agency to the consumer of the product which is the viewer. In the next sub chapter the issue of the gazing agency and the circumstantial examination the subject matter will be evaluated in the context of this project.

3.2 Distributed Gaze and Gazing Agency

“... we can craft others that will be conducive to the long-range survival of humans and of the other life-forms, biological and artificial, with whom we share the planet and ourselves.” (Hayles, 1999: 291).

Distributed cognition is one of the core concepts of Hayles' Posthuman theory. As a start, the explanation of distributed is essential to the nature of this study. Simply put distributed cognition is consciousness humans share with the machines. (Hayles, 1999). Humans are experiencing this transaction with machines every day, while they are using the gadgets which tends to ease their lives. In the extremities of post humanist theories machines might be able to replace biodegradable human bodies and it can work as an ultimate prosthesis.

the embodiment of human thought in a biological substrate is a vestige of history rather than an inevitability of life, and the body is viewed as the original prosthesis of the mind that can be extended or replaced with other

prostheses. They believe that human consciousness can be seamlessly integrated with intelligent machines and that there is no essential or absolute demarcation between bodily- housed consciousness and intelligent computer simulation. (Gilbert & Forney, 2013: 28-29).

However, in this age and time humans experience these prostheses with non-extremist predictions. Cars will be the most appropriate examples to mechanic prostheses as well as to distributed cognition. Prosthetic qualities are coalescing with the desire to be present in another place faster, it is a gadget that works as several prototyped and innovated enhancements to walking or could be said carriage. In the distributed cognition aspect, it has its own responsive automated embodied system in itself to be able to process information. A person desires to start the car and encodes this information through turning the ignition, the car itself decodes this information and ignites the engine. The cognitive capacity of the car is interlaced with the human cognition.

...every day we participate in systems whose total cognitive capacity exceeds our individual knowledge, including such devices as cars with electronic ignition systems, microwaves with computer chips that precisely adjust power levels... Modern humans are capable of more sophisticated cognition than cavemen not because moderns are smarter, Hutchins concludes, but because they have constructed smarter environments in which to work. (Hayles, 1999: 289)

This interlaced working relationship creates some pessimistic and also optimistic views towards post humanism “the posthuman offers resources for rethinking the articulation of humans with intelligent machines.” (Hayles, 1999: 287). The main reason of the pessimistic view against machines, with prosthetic qualities to the human, are fueled by the liberal humanist subject perspective and the egocentric human quality, not to be confused with emotion driven ego, but the view towards the

central human species. To be in control is an indispensable trade for some theoreticians and also creates an ethical dilemma “Rather, the issue is an ethical imperative that humans keep control; to do otherwise is to abdicate their responsibilities as autonomous independent beings.” (Hayles, 1999: 288). The argument is about control and being in control is assumed as one of the key elements of what makes a human a human, it is interlaced by theoreticians as the status of human beings. “... connection between the assumptions undergirding the liberal humanist subject and the ethical position that humans, not machines, must be in control. Such an argument assumes a vision of the human in which conscious agency is the essence of human identity.” (Hayles, 1999: 288). Issues of human identity defined by control also have its implications on freedom and safety, thus sharing or giving autonomy to non-human agency with distributed cognition is against the will of control and dominates everything around human-beings. “... distributed cognition replaces autonomous will; embodiment replaces a body seen as a support system for the mind; and a dynamic partnership between humans and intelligent machines replaces the liberal humanist subject's manifest destiny to dominate and control nature.” (Hayles, 1999: 288).

The key distinctive element in this control dynamic problem according to Weizenbaum and Moravec's post humanist predictions was Weizenbaum stating that agency must belong to the human body not be embodied by machines, however Moravec point of view occupies completely the opposite perspective in the medium, machines should be entirely embodying the informational pattern and the mind and body can be discarded. In this case the question will remain intact, if the machine

embodies the whole mind is it the machine which has the agency or the person stripped down from the perishable cast?

Rather than proceeding along a trajectory toward a known end, such systems evolve toward an open future marked by contingency and unpredictability. Meaning is not guaranteed by a coherent origin; rather, it is made possible (but not inevitable) by the blind force of evolution finding workable solutions within given parameters. (Hayles, 1999: 285)

Weizenbaum and Moravec are representing the two extremist parts of the post human theories, one is more likely to be seen as anti-human the other seen as anti-machine, these points of view are inevitable towards unknown progresses.

When the self is envisioned as grounded in presence, identified with originary guarantees and teleological trajectories, associated with solid foundations and logical coherence, the posthuman is likely to be seen as antihuman because it envisions the conscious mind as a small subsystem running its program of self-construction and self-assurance while remaining ignorant of the actual dynamics of complex systems. (Hayles, 1999: 286)

However according to Katherine Hayles there are middle grounds in posthuman and distributed cognition. Shared consciousness as may have been seen as concerning and unnatural to some people like previously mentioned, however distributed cognition has its proven benefits apart from everyday life. “His [Edwin Hutchins] meticulous research shows that the cognitive system responsible for locating the ship in space and navigating it successfully resides not in humans alone but in the complex interactions within an environment that includes both human and nonhuman actors.” (Hayles, 1999: 288). Distributed cognition has its perks in human achievements in several different fields in science through everyday life. “The situation of modern humans is akin to that of Searle in the Chinese room, for every

day we participate in systems whose total cognitive capacity exceeds our individual knowledge...” (Hayles, 1999: 289). Sometimes humans are interacting with the machines without knowing their capacity or working principles, like the Chinese room analogy points it out. This cognitive and dependent relationship between human and non-human forms reflect many media including art. In this project, shared cognition aspect is held in a crucial place which will be evaluated in the last section of this sub chapter.

Distributed cognition is an inevitable progress for human nature with the advancements in technology. It is changing the way humans act, thus the way they think “Bodily practices have this power because they sediment into habitual actions and movements, sinking below conscious awareness.” (Hayles, 1999: 204). The way their movements and action patterns are changing is correlated with their minds. Everything they do, experience gets interlaced with their mind, actions become embedded in their informational patterns. Hans Belting explores this interlaced correlation from the image perspective. The objects humans come across -in this case machines- have a power over human minds when it is interacted because when humans are interacting with a thing, anything in their lives it will be experienced and create memories, perspectives in their consciousness. The machine is just seen but not used or not seen its process has no greater effect over mind. “The ‘image’ however, is defined not by its mere visibility but by being invested, by the be-holder, with a symbolic meaning a kind of mental ‘frame’.” (Belting, 2011: 9). When the action starts the embodiment of the information decodes the human wants and works with the human.

The images of memory and imagination are generated in one's own body; the body is the living medium through which they are experienced. In turn the distinction between memory as the body's own image archive, and remembrance as the body's own generation of images has implications for this body experience" (Belting, 2011: 10).

Belting's image anthropology suggest that images colonize human body thus the mind (Belting, 2011: 10). This interlaced relationship of actions creates collectiveness and partnership between the human and the machine. The cognitional aspect of a certain work distributed between one medium to another. Embodied information in the machine sharing the cognitional agency with the human. "It [image] needs the act of animation by which our imagination draws it from its medium. In the process, the opaque medium becomes becomes the transparent conduit for its image." (Belting, 2011: 20).

Embodiment of the information is only possible with the materialistic, structural form. "Embodiment cannot exist without a material structure that always deviates in some measure from its abstract representations; an incorporating practice cannot exist without an embodied creature to enact it..." (Hayles, 1999: 199). Without the form, disembodiment of the information is just creating the loss of information. When practitioners are disembodimenting the information, it should decontextualize in another form, and this information is encoded in the machine and decoded by the machine. "...another key and a reverse direction, we see replayed the decontextualization that information underwent when it lost its body. Just as disembodiment required that context be erased, so remembering embodiment means that context be put back into the picture." (Hayles, 1999: 203). However, the process is not ending there. To be clear in the subject matter the display of the full process is crucial; disembodiment of the information from the human subject and encoded to its

new material form is the first stage. Then the disembodied information will be present in its new form, and second stage will be the encoded message (which can be exemplified from the previous car ignition illustration; turning the ignition) from the participator will send to the machine, and machine will decode the message and it will start the process of its purpose, which correlates with the embodied information. The third stage is the action taken place by the machine, which it is also sending an inevitable encoded message to the participator to be decoded (which according to the car ignition example, engine is working properly).

This process displays the embodiment of the information outside of the human body and sharing the agency of decision making with the machine is possible and happening. “the distributed cognition of the emergent human subject correlates with in Bateson's phrase, becomes a metaphor for the distributed cognitive system as a whole, in which "thinking" is done by both human and nonhuman actors.” (Hayles, 1999: 290). Humans are experiencing this distributed cognition for years now, and many ongoing discussions are still present in the subject matter about control and agency. “...partnership with intelligent machines is not so much a usurpation of human right and responsibility as it is a further development in the construction of distributed cognition environments, a construction that has been ongoing for thousands of years.” (Hayles, 1999: 289-290). The thought that this relationship will stay exclusive to one or two media is absurd and not reasonable. Humans are and will continue to amplify the scope of distributed cognition.

Display of the embodiment process thus shared cognition applicable to the many mechanic enterprise. This embodiment mechanism is fuel for the creational

processes. “What about the pleasures? For some people, including me, the posthuman evokes the exhilarating prospect of getting out of some of the old boxes and opening up new ways of thinking about what being human means.” (Hayles, 1999: 285). Distributed cognition is a fascinating creation and mechanization, limiting and not developing the extent of this concept is counterproductive and counterpart to one of the basic and crucial aspect of human the human nature, curiosity.

When changes in incorporating practices take place, they are often linked with new technologies that affect how people use their bodies and experience space and time. Formed by technology at the same time that it creates technology, embodiment mediates between technology and discourse by creating new experiential frameworks that serve as boundary markers for the creation of corresponding discursive systems. (Hayles, 1999: 205)

Boundaries of this conception tested every day, and today is no different. The echo of distributed cognition is reflected in art with many media and concepts, like interactivity in art, and generative art. Professor Kevin LaGrandeur explained it in the simplest manner in his spring exhibition plenary essay on the Cleveland Museum of Contemporary Art website.

The idea of the posthuman is a big new philosophical and scientific concept, and big new philosophical or scientific concepts often cause paradigm shifts in the way we think about our world, about ourselves, and about our relation to the universe. And that, in turn, changes art. Which changes us, because art reflects and anticipates our struggles to absorb and assimilate new ideas and how they relate to us. (LaGrandeur, 2016: 1)

This project is not replicating the classical functional outcome oriented approach of distributed cognition. It is replicating the concept of distribution. ‘Eye’ See You, is

sharing the action of gaze with its viewer, it is embodying the main active organ of the gaze, eye in a non-biological manner. When the viewer is physically present in the room with the embodiment of the human eye, the action of gazing starts. One of the main components of consuming, examining, critiquing or admiring visual arts starts with seeing. Seeing the visual art is umbilical for the purpose. Most of the time the action of seeing belongs only to the human actor or actors. However, in the project 'Eye' See You, this umbilical action shared between human and non-human actors, which means while viewer looking at the art work, it is looking back at them.

One of the main points of this distributed gaze is presence. This project is not gaze monitored, it is not just looking at its viewer when they are looking at it. 'Eye' See You is a motion monitored/tracked based project. Because the main concept is sharing the agency of gazing action, if art work is just sharing the action when its gazed agency still belongs to the human, it is only works when their eyes on the artwork. To be able to share the gazing agency main principle of the work is seeing its viewer. Humans are not looking other people when they are looked at, this is what agency all about. 'Eye' See You is sharing your agency of gazing with you and creating an experience for you to encounter with the distributed gaze with a non-human actor.

3.3 Posthumanizing The Body through Art

We adopt the view about learning that comes from phenomenography. In this view, a person's understanding of the physical, social, emotional, and conceptual/intellectual world is taken to be the dynamic relationship between that person and the world, and is, therefore, a product of the individual's experiences in and of the world... With new experiences, the way in which a person perceives and acts in the world changes. Therefore, learning can be considered to be a change in a person's understanding of their place in the world and how they perceive it... (Fazey et al., 2005: 2)

Behind every revolutionary theory there is a potential for equally big echoes in other areas of life. Every development in a certain field of study can have a potential effect in another medium. It creates experiences and human-beings learn from experiences, thus they are creating through experiences. Changes in the world affect and ignite new changes and possibilities. Posthumanism and cognition theories are no exception in this generalization, even though at its core it is not appropriate for this theory to limit itself in one domain, it expands. "By contrast, in the model that Hutchins presents and that the posthuman helps to authorize, human functionality expands because the parameters of the cognitive system it inhabits expand." (Hayles, 1999: 290-291). In this specific quote, Hayles draws attention to the nature of posthumanism, this expansion-al nature also affects other fields of study, in the contextualization of this thesis, the field of study is Art.

Art is nourished by many fields of study, and embodiment and body driven reconfigured art is takes inspiration, contextualization, and theorization from many other fields. "Artists and culture producers now not only work with the visual, but also the biological, and the mechanical, effectively exploring the obsolescence of the

corporeal body.” (O’Donnel, 2011, para.1). Art and the artist, who appropriated posthumanism into their artworks, mostly tackled the issue and conceptualization of body and its possibilities. The conceptualization of the body is always a study of subject in different fields, art, science, philosophy, or media like in the case of post humanism. One of the famous phenomenologist Merleau-Ponty reveals why the body affects human relations with the world “... ‘being-in-the-world’ emphasizes the importance of the body. He [Merleau-Ponty] places the body at the center of our relation to the world and argues that it is only through having bodies that we can truly experience space.” (Smyth, 2007: 141). Experiencing the world linked with embodiment, and central issue is the owns body like Ponty and Smyth point it out in the quote above. Understanding and reflecting the body through art requires knowledge and experimentalism with another discipline/s. “Increasingly, the importance of the body in understanding and learning is being acknowledged within other disciplines. This can be seen from the tradition of experientialism...” (Smyth, 2007: 141). This general and international importance of the body is not completely bound to culture or nationality, it can differ however corporeality of body is not unique to one area or movement in the art. “...artists have transcended the role of cultural producer and have extended themselves into the scientific roles they wish to question.” (O’Donnel, 2011, para.2). Posthumanism and embodiment in art extend itself and are fed by other disciplines and transcend the cultures and nationalities, and it becomes almost like a universal representation of humankind.

Some artistic works on the body, pushing the limits of body and also, they are changing the understanding of the body with testing its limitations. These artists

formed design problems regarding the body and while trying to improve the body, they are testing the limitations of it.

The notion of an obsolete body has led artists to question, and effectively problematize the corporeal form. Our push for a utopian body has led to the desire for augmentation and experimentation. The body is not necessarily obsolete, it is just a matter of its limits being pushed, tested, and redefined. (O'Donnel, 2011, para.12).

These problems, ideations, experimentations and re-definitions also happened in Posthuman driven art, however in general there was another component added in the equation, machine like one of the main practitioner in the field of posthumanism art, Stelarc stated,

He [Stelarc] instead suggests that humans as a species have created a new technological environment in which we cannot operate effectively as living organisms. The body is obsolete in the sense that it is no longer compatible with its surroundings. We have reached an evolutionary endpoint where the next logical stage of adaptation is for the organic to assimilate the mechanic. (O'Donnel, 2011, para.3).

Machine and body integration with posthumanistic concepts become the topic of art and art studies "... the machine always has the human subject as a companion, and highlights the relation that human subjects have toward technology." (Broeckmann, 2016: 22). These two concepts merged together and created Posthuman Art. Like previously mentioned, Stelarc is one of the pioneers in the area of machine integrated posthuman art, he is not alone in this area as there are many artists exploring the aspect of body interlaced with the machine. "In the work of artists like Stelarc, Mikami, or Delvoye, the human body appears as a particularly sensitive site for exploring the meaning of technology." (Broeckmann, 2016: 170). They and many more artists explore the concept of body with technological capabilities, limitations

of the body and possibilities comes from these limitations broaden with the machine encounter. “If the machine is a concept that derives from a subjectivation afforded by the technological apparatus, then the human body is the necessary, physical counterpart of the machine—its fleshy double.” (Broeckmann, 2016: 170).

Posthumanist art evolved through the merge of Postmodernism and technology (LaGrandeur, 2016: 3). The core inspirational aspect dates back to humanist European Renaissance art, posthumanist art is a manifestation of anti-thesis of the humanist movement (LaGrandeur, 2016: 2). Renaissance art is reflecting the ideal human and representing the form of it in the beauty standards of those days (LaGrandeur, 2016: 3). Past 500 years people work with their stories in narratological sense and most of the works occupied with aesthetic in form-alistic sense, however with the rapid developments in the last 100 years or so, the stories changed and, limitations and possibilities shaped accordingly to the notion of development (LaGrandeur, 2016: 3). The major impact on Posthumanist Art was not just technology and science, the notion of human centrality in the human perspective affecting conceptualization (LaGrandeur, 2016: 3). The decentralization of the human opens up a developmental point of view (Broeckmann, 2016: 169). The major component is body, thus human. Even though decentralization of the body is one of the goals in this field by some artists like Stelarc. When the occupation was the human body, the form and concept occupied with the body, thus it is circles back to the notion of human centered view, even though main goal is not glorifying the human and the body. Limitations and improvements are bound to the understanding of the human and the body. In the Posthumanist artistic approach issue is not the beauty of the human form or the complexity of the human aesthetic, it derives its

representation out of limitations and further implications, the extension and improvement. “His [Stelarc] projects and performances deal with the extension and improvement of the human body as a hollow and unconscious container.” (Broeckmann, 2016: 169). Posthumanist art is a mediation through the human/body. Possibilities, artistic innovations and implications are incomprehensible. “These new stories we begin to tell ourselves about our existence are varied, as diverse as our growing technology and scientific changes. But confusing. And ever-shifting. As yet not fully developed, like ourselves in this new era.” (LaGrandeur, 2016: 3). Human nature is in a state of flux like technology itself, it creates a loop in itself one change affects the other, that means possibilities of Posthuman art are not yet close to extinct.

CHAPTER 4

ARTISTIC REVIEW

4.1 Desire of Codes by Seiko Mikami



Figure 5, Desire of Codes Exhibition by Seiko Mikami at at YCAM's theatre hall.

Seiko Mikami was a Japanese artist who joined the art scene with her interactive installations works around 80s. Her works were impactful interns of size, as well as the subject matter. One of her notable works ‘Desire of Codes’ is inspirational for this work in some aspects. This three-piece interactive installation consists of small security purposed cameras used for image capturing, six multi perspective robotic arms equipped with cameras and projectors and last but not least insect’s compound eye resembled screens (YCAM, para.1). *Desire of Codes* is mimicking principles and outcomes of human memory (Bright, 2015, para.1), and serves its artistic replication to the viewer when they are present in front of the screen.

Mikami explained the inspiration and aim behind *Desire of Codes* with these words

“Desire of Codes” expresses the ambiguous boundaries between the *data body in the virtual world* and the *physical body in the real world* in the information-oriented society...the visitor feels as if watching a fragmented dream or memories stored in the brain, and discovers the desires that are automatically generated through the act of monitoring. This work tries to visualize a new reality in which fragmentary aspects of space and time are recombined... (Mikami, 2013, para.3)

With her words “data body in the virtual world” and “physical body in the real world” expresses and distinguishes the technological aspects and physical aspects, and at the end she melds these separate elements in one pot with blurring the “boundaries” between them in one screen. Mikami embodied the agency of memories from humans and sharing this agency with them while representing back at them. Thus, the agency of memory is represented through a non-human actor which results with the agency of memory not belonging to the human actor alone but shared by the technological machine.



Figure 6, Desire of Codes Exhibition by Seiko Mikami at at YCAM's theatre hall, photographed by Ryuichi Maruo.

The main relation between Mikami's work and this project comes from the notion and point of view towards blurring boundaries between the virtual world and the physical body. The physicality and virtuality sharing the same action. In 'Eye' See You the main goal is breaking the omnipresence of the body and the machine, when they share the gazing agency together the boundary between machine and human is blurred and via the interaction between them. In Mikami's work images are melted in the same screen but at the same time the presence of the viewer is an ignitor, in this project the level of interaction is the main shared agency as well as presence of the viewer, movements, and positions.

4.2 Third Hand and Handwriting by Stelarc



Figure 7, Third Hand by Stelarc.

Third Hand is a machine integrated performance art piece by the Cypriot-Australian artist, who focused on the human body, especially his own, and its limitation and capabilities. "...he [Stelarc] often impersonally refers to as "the body," is always his

own body. His work “explores what it means to be human”.” (Broeckmann, 2016: 169). Stelarc’s main purposes in his artworks the body indeed, but also machine is another important component. “It is no longer meaningful to see the body as a site for the psyche or the social but rather as a structure to be monitored and modified.” (Stelarc, 1991: 591). He is counted as a posthuman artist because of the derivative force behind his works coincides with philosophy of posthumanism (Broeckmann, 2016: 169).

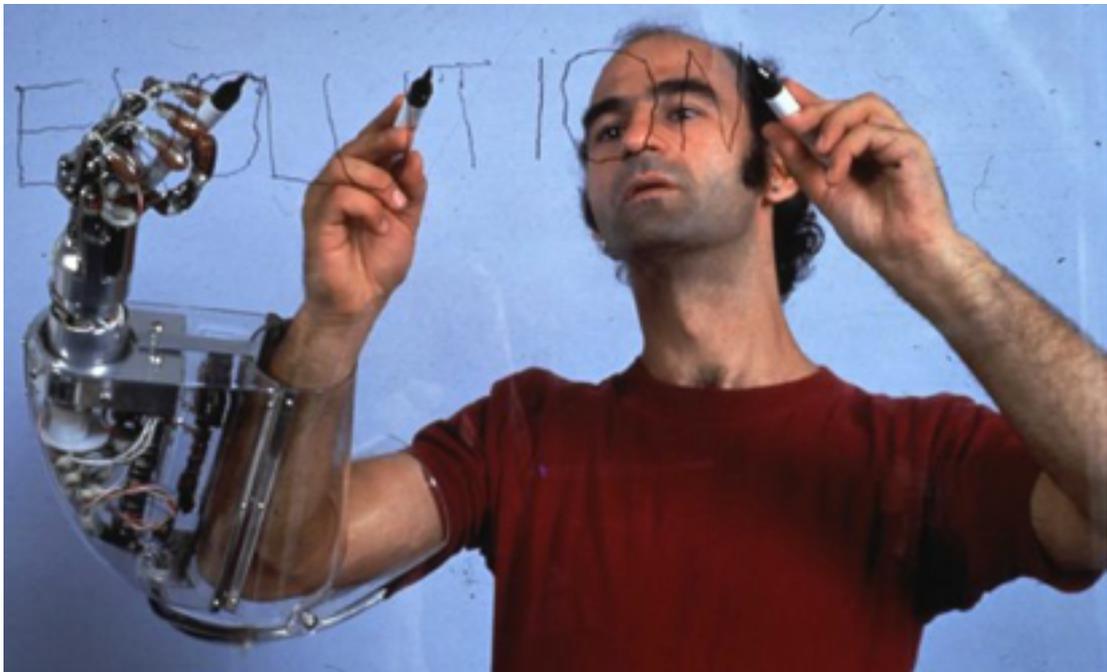


Figure 8, Handwriting by Stelarc.

The *Third Hand* consist of an artificial hand attached to his arm as an additional hand. Its functionality was close to a real human hand, in this case Stelarc’s right hand. Functionalities, movements and its feedback properties matches with real arm capabilities. The mechanical arm was even capable of mimicking and replicating the motions made by the real arm it was attached, and made contributions. In one of

Stelarc's performances he uses this same mechanical arm and created *Handwriting* and he and his third arm wrote the word 'evolution' together.

The new extension of Stelarc and him were sharing the control and agency together and that aspect of these works becomes a muse for this project. While Stelarc attaching the extension of a human to his arm, 'Eye' See You is embodying one of their organs and reflecting back at them. One of the main inspiration comes out of Stelarc's works is the aspect of 'working together'. The 'Eye' and its viewer working together creating the experience together and like the nature of the word sharing together.

The aspect of augmentation does not coincide with 'Eye' See You, however the main influence from Stelarc's work is independent movement, while working with the machine. While Stelarc performing the *Handwriting* machine is not just mimicking his writings, it is writing its own letters, it is sharing the processes of writing the word 'evolution' with him. In the project 'Eye' See You, artwork is not replicating the eye movement of the viewer it is sharing their agency of gazing with them, it is contributing to the action, it is not a selective mirror but non-human actor in the action of 'looking at each-other'.

4.3 Cloaca Original by Wim Delvoye



Figure 9, *Cloaca Original* by Wim Delvoye. Museum Kunst Palast, Düsseldorf, 2000-2001.

Belgian conceptual artist Wim Delvoye has been a controversial practitioner in his career (Artnet, para.1). One of his controversial works has inspirational properties in this project. *Cloaca Original* is a room sized installation which is replicating the human digestive system in a mechanical creation. There are six glass containers connecting to each other with tubes and essentially the machine is fed on one side and after the mechanical and chemical induced process closer to the biological time frame, discharging the feces in the other side.

This artistic and mechanic replication of one functionality in humans' biological system and creating it independent from human body is the more form related aspect but 17 years after his creation was born Delvoye was still innovating and improving his design, also these improved versions are still on display from time to time in over 30 countries (Delvoye, 2017, para.3-4). The conceptuality of the work still adds up to itself after interaction of different nationalities.

...there have been different controversies linked with different nationalities and countries. In Lyon, ...the citizens were only interested in what the machine ate, and they didn't really care about its excretions. Chefs even came in to create special meals. In Düsseldorf, a very Protestant town, the German newspapers were full of reports saying: "How dare he? There are so many people dying of hunger." ...Everyone is so different in Europe. In Vienna... you hear all these stories, people talking about their childhood, their special place for shitting... (Delvoye, 2017, para.4.)



Figure 10, *Cloaca Original* by Wim Delvoye. Museum Kunst Palast, Düsseldorf, 2000-2001.

Delvoye's *Cloaca* is one of the inspirations in this work because of how he describes and sees it. "I don't even respect the historical look, like finding the right colour for instance. I treat them as living things, not like paintings that have stopped in time. *Cloaca* is a living project..." (Delvoye, 2017, para.3.) He is not seeing his work as an aesthetics focused art project, it is a living being. *Cloaca* is a machine however it has some human like needs. "...it's a very institutional kind of work. You need people on the ground to maintain and control it, to nurture and feed it, replace the silicone

tubes, clean up after it.” (Delvoye, 2017, para.4.) This machine is representing a part of a biological being and it requires an attention like the ‘real’ part which it is representing.



Figure 11, *Cloaca Original* by Wim Delvoye. Museum Kunst Palast, Düsseldorf, 2000-2001.

Inspiration comes from the philosophy behind the project, as mentioned before. It is not seen as a programmed machine to finish the task, but it is treated like a living being. In the ‘Eye’ See You the case is not different, it is a machine however it is act like you, it is seeing you like you are seeing it. It is a living being like the *Cloaca* and it is replicating the viewers movement patterns, not mirroring them.

CHAPTER 5

THE PROJECT '*EYE*' *SEE YOU*

5.1 Purpose of the '*Eye*' *See You*

'Eye' See You is a mechanical mixed media sculpture which creates an individual relationship between the artwork and the viewer who is observing the artwork personally. This standalone sculpture is a representation of the human eye and its eye lid. *'Eye' See You* is constructed with mostly wires and hardware from computer housings, and the functionality of the movable parts consist of power dynamos, gears, and Arduino parts and processors. This sculpture serves two different fundamental outlooks on machine art which, one being different technologies and machines powering the sculpture, the other being that it is a mechanical sculpture as a whole. The first branch of the main purpose of this project is to create an artwork which is replicating its observer by their organ which it is observed by.

Post humanizing the eye and adding functionalities of the human eye is an essential part of the main point of the artwork. The artwork is essentially replicating the

movement pattern of the eye using motion tracking principles. It is following the subject and it also blinks every few minutes, it is an additional component to create realistic representation without creating a biologically representative sculpture which would be constituted as bio-art. This sculpture is not using gaze tracking principles simply because creating a sculpture which is looking at its viewer if only while they are looking at it would create another meaning which is not intended. The intended meaning here is the viewer and the artwork sharing the gazing action. If it was just looking them while it is looked at, it would still be giving the full agency of the action to the human subject. In this work the main concern is to create a sculpture that can share the main agency humans have while experiencing artworks.

The agency of the observing belongs to the viewer in traditional art. In digital art most of the time the art work is reacting to the preset motions and generating the response or presence or motions that trigger certain aspects of the work. There are certainly several exceptions in the field of art besides from these explanations which brings me to the point that creating an artwork which can be constituted as one these exceptions. In this artwork the main purpose was creating the illusion of shared experience derived from human actions and creating the immersion of connection, sharing an act, being present in that moment with the artwork and being conscious of sharing that moment with it.

The posthumanization of the eye through mechanization also brings up the outlook of Dziga Vertov towards the mechanical eye, the kino-eye. The position of the camera in Vertov's argument is undeniable, however his outlook towards the human eye and its functionality driven representational mechanization through hardware is

advisable to the terms of post humanization of the eye in this thesis. “I am kino-eye, I create a man more perfect than Adam, I create thousands of different people in accordance with preliminary blue-prints and diagrams of different kinds.” (Vertov, 1985: 17). The comparison between human eye and camera in this proclamation analogous with the statement behind the project ‘Eye’ See You. The posthumanized eye inspired by functionality of the real eye creating ‘The Eye’, even can be said the ideation of the eye, eye-ness. It is not inspired by one but the whole concept of the eye and create it without the sentimentality or other inconsistent feelings attach to the concept of sight, it is eye and it is looking. The ideation behind the posthumanization is not an extension of human but a non human actor which is an active participant in the exchange of the action of looking at each-other.

Vertov’s other claim towards the subject matter was supporting previous and further discussion toward the posthumanized eye.

The mechanical, the camera, rejecting the human eye as crib sheet, gropes its way through the chaos of visual events, letting itself be drawn or repelled by movement, probing, as it goes, the path of its own movement. It experiments, distending time, dissecting movement... (Vertov, 1985: 19.)

‘Eye’ See You is dissecting movement on its own terms inspired by the functionality of human eye, it is gazing, sharing the agency of human action with them on its own term it is not bound to the human gaze, it is responsive to their presence like the agency of human gazing is connected with their surroundings. Human action of gaze related with outside but not bound to others’ action of gazing, it is independent. This project is dissecting the informational pattern of this action and appropriated logic and functionality with rejecting the dependency of the action to human only perspective.

The genre of this artwork can be considered as machine art and it comes from its functionality and materiality like previously mentioned. The reason behind the chosen medium is because it is creating the dualism. The separation between the human and the artwork is created through mechanization, however with mechanization also the connection is incurred. The replication aspect leads to the post humanization of it. To be able to catch to notion of ‘versus’ and ‘alike’. The Materiality of the artwork is creating a disengagement at first glance, it creates the notion of exterior formation from the human. However, with the functionality, movement and action, it creates a human and machine relationship, a bond. For a second the person who is observing it can forget the fact that it is just an object and develop a shared, distributed gaze with *‘Eye’ See You*.

5.2 Theoretical Conceptualization

‘Eye’ See You’s main theoretical frame work comes from two distinct media and art theory. The first theory concerning the form and concept is Machine Art, mechanization and mechanic forms inspired and fueled this project. Like previously mentioned there are many different outlooks towards machine art, and this project mainly hybrid of Vladimir Tatlin’s and Enrico Prampolini’s direction towards Machine Art.

The Russian artist Vladimir Tatlin was an influential avant-garde artist in the newly formed Soviet Union in early 19th Century (Broeckmann, 2016: 11). His position

towards machine art was clear, he pointed out machine art serves the purpose of machines' detachment from industrial context and with that detachment it can be formed in the context of art.

the innovation of art through the detachment of technical materials from their industrial context in order to turn them into artistic materials. This transfer of technical materials into artistic media, and the dispensation of the artist's subjective intention and control over the artwork, constitute the core of what the Berlin Dadaists understood as "Tatlin's Machine Art." (Broeckmann, 2016: 11)

The detachment of the mechanical hardware from its main industrial purpose and with the vision of mine, recontextualization of those parts into an artwork is the connection between 'Tatlin's Machine Art' and *'Eye' See You*. The computer hardware parts, servo motors and wires in this project is a manifestation of the detachment from the main purposes of these objects' first functionality and with the control of mine, serving to another purpose, which is art.

After World War I, the second generation futurist Enrico Prampolini defined 'mechanical art' in the manifesto he wrote, *The Aesthetic of the Machine and Mechanical Introspection in Art* in 1922 (Broeckmann, 2016: 11). His outlook towards machine art was that the position of the machine served an inspirational function. "Prampolini posited the machine as a new symbol of aesthetic inspiration which could elucidate the way in which artistic invention and production took place. The functional features of machines...should be adopted for artworks not as physical principles..." (Broeckmann, 2016: 12). He proclaimed five points of view towards machine art in his manifestation.

1. The Machine to be the tutelary symbol of the universal dynamism, potentially embodying in itself the essential elements of human creation: the discoverer of fresh developments in modern aesthetics.
2. The aesthetic virtues of the machine and the metaphysical meaning of its motions and movements constitute the new fount of inspiration for the evolution and development of contemporaneous plastic arts.
3. The plastic exaltation of The Machine and the mechanical elements must not be conceived in their exterior reality, that is in formal representations of the elements which make up The Machine itself, but rather in the plastic-mechanical analogy that The Machine suggests to us in connection with various spiritual realities.
4. The stylistic modifications of Mechanical Art arise from *The Machine-as-interferential-element*.
5. The machine marks the rhythm of human psychology and beats the time for our spiritual exaltations. Therefore it is inevitable and to consequent the evolution of the plastic arts of our day. (Prampolini, 1922: 237).

Prampolini's manifestation coincides with this project in a different manner. Starting from the first point he made, embodiment of the fresh development, 'Eye' See You is embracing the post humanism in a newer context, the distributed gaze. Distributed gaze comes from Hayles' Distributed Cognition, to look at a concept encapsulates machine in fresher outlook through machine art. As a second point, this project inspired from a new reality toward machine and human relation, the way sharing the gaze without formal functionalism of the classical machine. Also, one of the obvious interlaces with Prampolini's manifestation is the modification of the machine in this artwork. Decontextualization of computer hardware in to a new form through art. Last but not least the embodiment of the human form and most importantly their agency in the mechanic creation is evolvement in the process of art.

The second theory, which inspires and formalizes this project is Posthuman. It is encapsulating posthuman view and with distributed gaze takes a step forward. Like

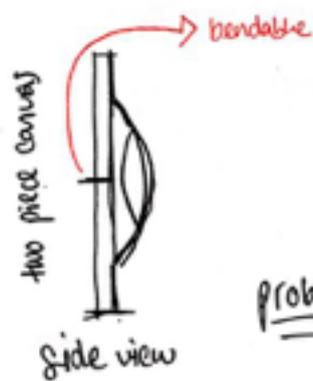
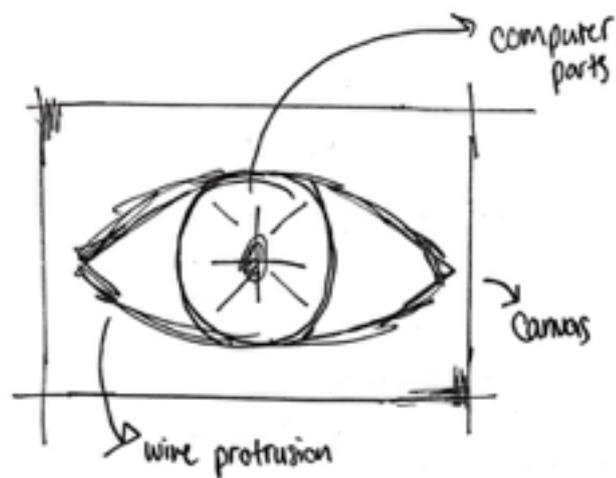
previously mentioned one of the most important goals is sharing the gazing agency with the human who is gazing at the artwork. While the viewer is observing the sculpture, it will replicate the movement of the real eye, its gazer. Beyond the technological materiality's implication with movement, without disconnecting with the hardware, the human replicator, which is the artwork, meets with its muse, the human. This introduction between the artwork and the human opens the door to the sharing, experiencing one of the first interactions of the 'meeting' process, the gaze. The main goal is creating a human and machine encounter while the machine replicates the human, which results with the interaction, sharing the look, gaze. Elaborating further on the aforementioned replicative aspect in a detailed manner, this sculpture represents the human organ through which it is perceived by.

5.3 Ideation

'Eye' See You is years' worth of accumulation of ideas, interests, notions and practice. The main interests which shape this project are sculptural practices, media archeological objects, and fascination towards human anatomy, building and creating something from scratch and giving it a purpose in the frame work of art. At the same time a fascination towards machine related media theories also plays a crucial part in the ideation.

'Eye' See You started as an illusion of drawing, an eye sculpture which protrudes from a canvas and its' only movement was blinking its eye lid. The blinking mechanism was attached to the canvas. When the eye blinks the top half of the work

folds down (fig.12). There were some design problems about the first ideation, in the folding process the sculpture could not contain its integrity and weight balance was another problem.



in the back
mechanism which
allows and runs
the bend

problem 1 Sculptural part
preservation

2 When top part fold
weight balance is
unstable

Figure 12, First ideation sketch of 'Eye' See You, 2019.

After several iterations, the idea shaped around the canvas but not completely dependent to it. The sculpture was still attached to the canvas, however the blinking mechanism was not attached to the canvas itself however it was working inside of it. The eye lid was concealed in the back side of the canvas and with a dynamo powered gear system, and the eye lid was going out when it was blinking (fig.14). The main iris part was consisting of several computer motherboard parts. And the rest was hand shaped wires attached to the canvas (fig.13). The pupil area was consisting of a lens and dichroic mirrors, to be able to underline the surveillance aspect, because in that stage of the ideation of the project one of the theories fueling the project was surveillance without being surveilled and panopticon art.

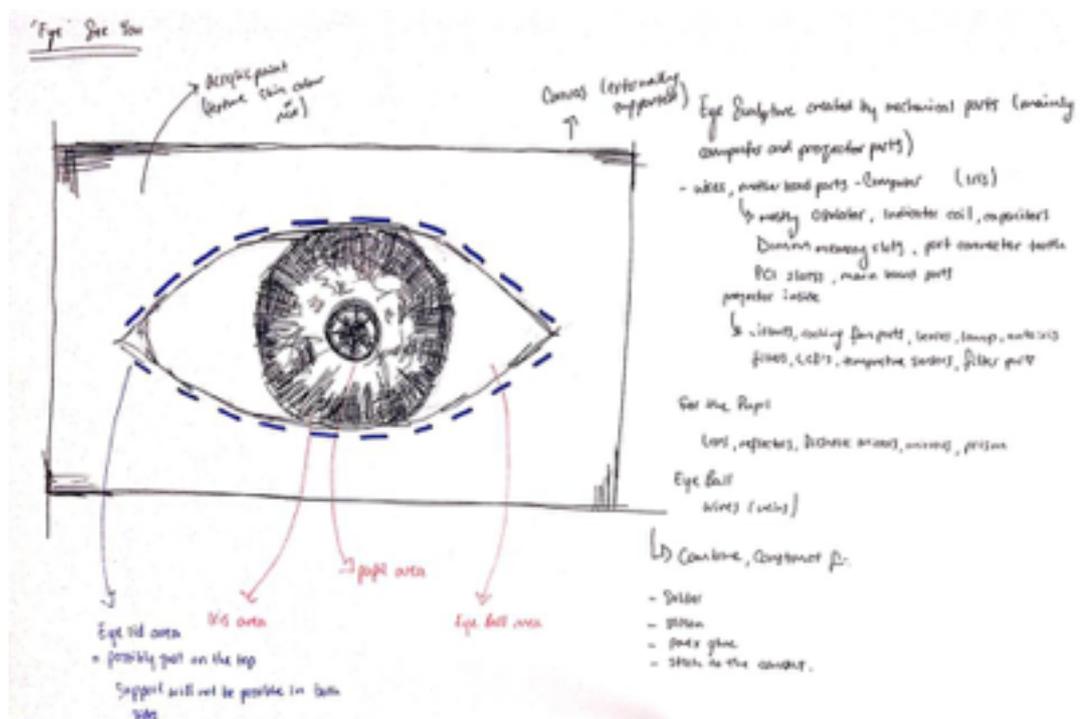


Figure 13, Ideation sketch of 'Eye' See You, 2019.

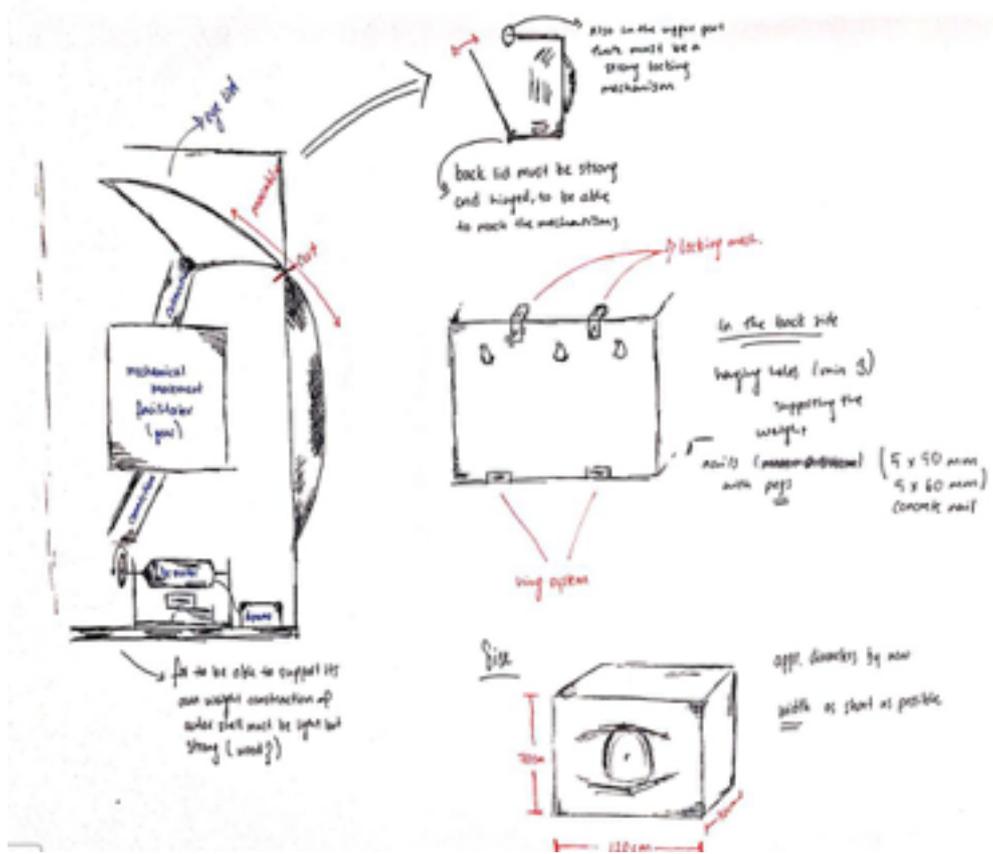


Figure 14, Ideation sketch of 'Eye' See You, 2019.

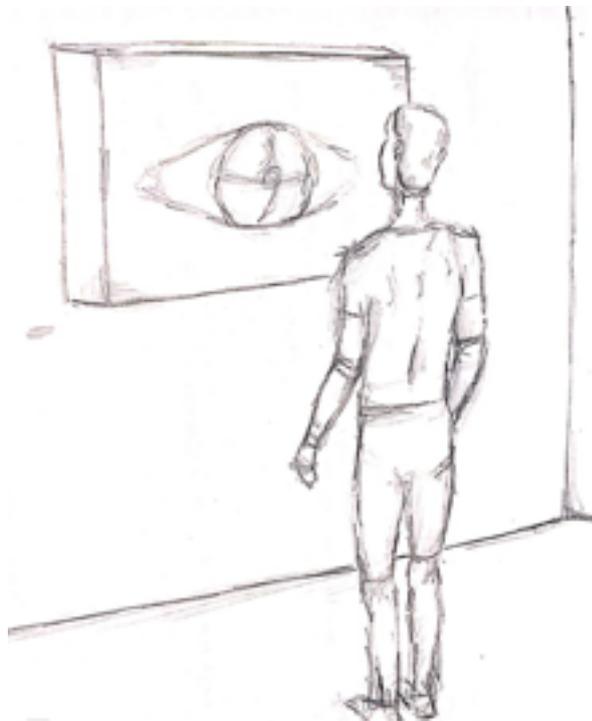


Figure 15, Ideation-Position sketch of 'Eye' See You, 2019.

In the next iterations the aspect of the canvas was excluded from the project because the idea of painting illusion was over packing the meaning and the concept. The idea of panopticon art evolved into posthuman theory and the form of the project brought up the machine art from the starting point. Posthuman theory also shaped the finalization of the ideation, the concept of distributed gaze brings up the embodiment. Disembodiment of the information and embodiment of the same information into a new form required the main formation of the eye ball not the shape human used to see the eye. Thus, the form of the project evolved in to a circular shape (fig.16), it contained three parts the base, eyeball, and eye lid (fig.17-18).

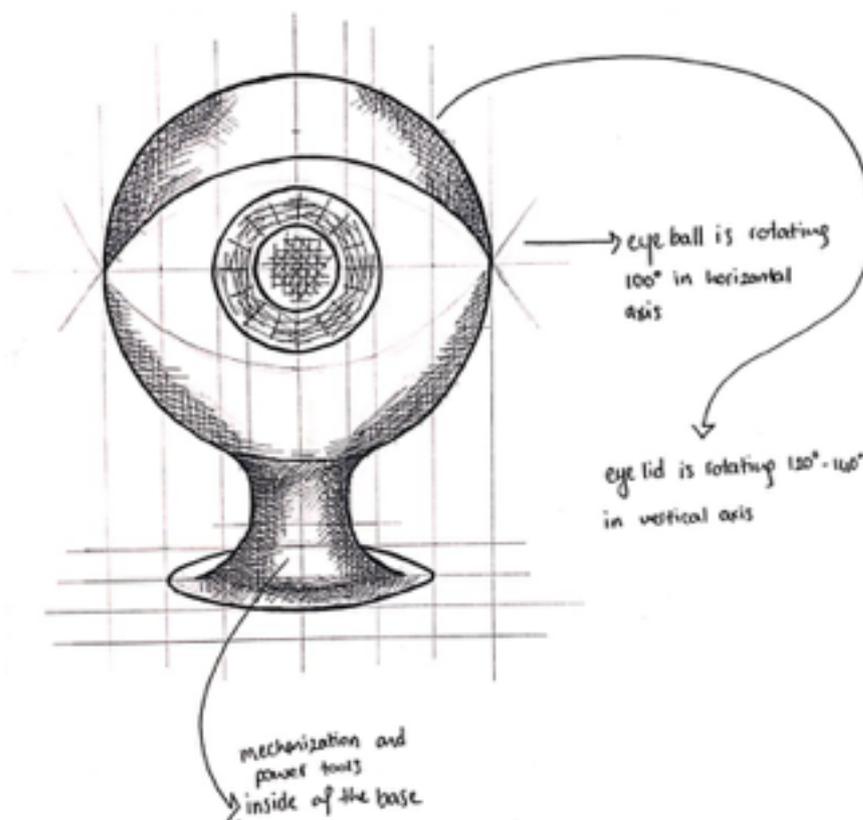


Figure 16, Ideation finalization sketch of 'Eye' See You, 2020.

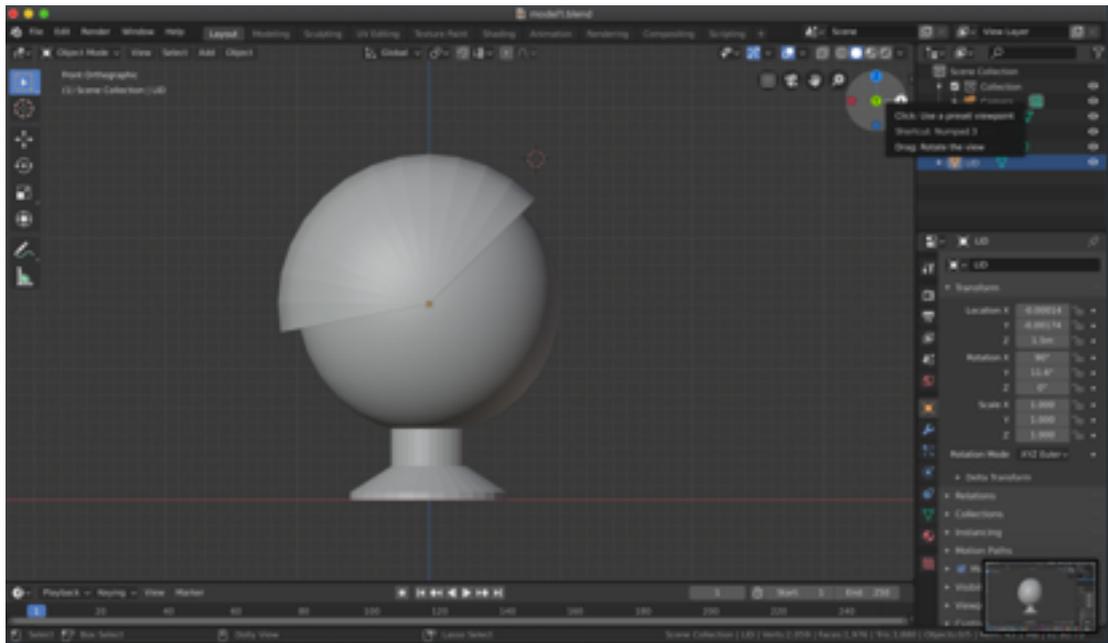


Figure 17, 3D Modelling of 'Eye' See You, Side View, 2020.

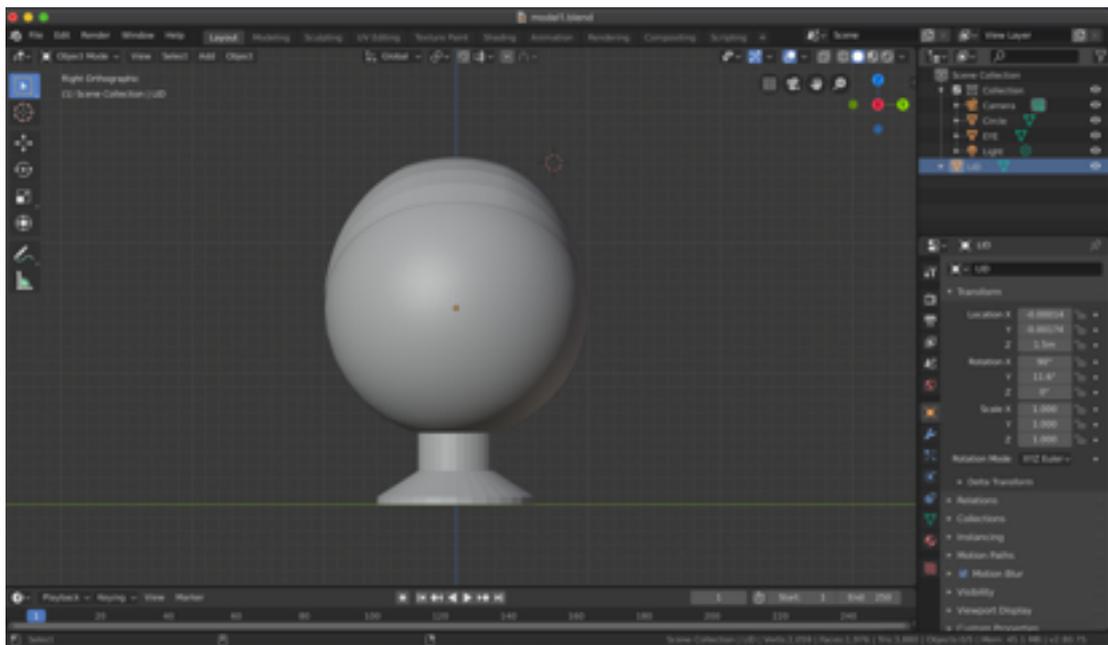


Figure 18, 3D Modelling of 'Eye' See You, Front View, 2020.

5.4 Technical Aspect

'Eye' See You is mechanical mixed media sculpture which explores machine art and posthumanism. This stand-alone sculpture consists of two parts, an outer shell which embodies the form of a human eye and a mechanical part which encodes the second part of the embodiment which is the informational pattern of the human eye movement. The further subchapters are breaking down these two parts of the project.

5.4.1 Form and Material

'Eye' See You is mechanical mixed media sculpture which explores the machine art and posthumanism. The form consists of the form-al embodiment of the human eye and machine art. The outer shell of this sculpture consists of four parts, the base, eyeball, eyelid and iris (fig.19-20-21). These first three parts are constructed with wires which has variable thickness, 0.5 millimeters to 1.5 millimeters.

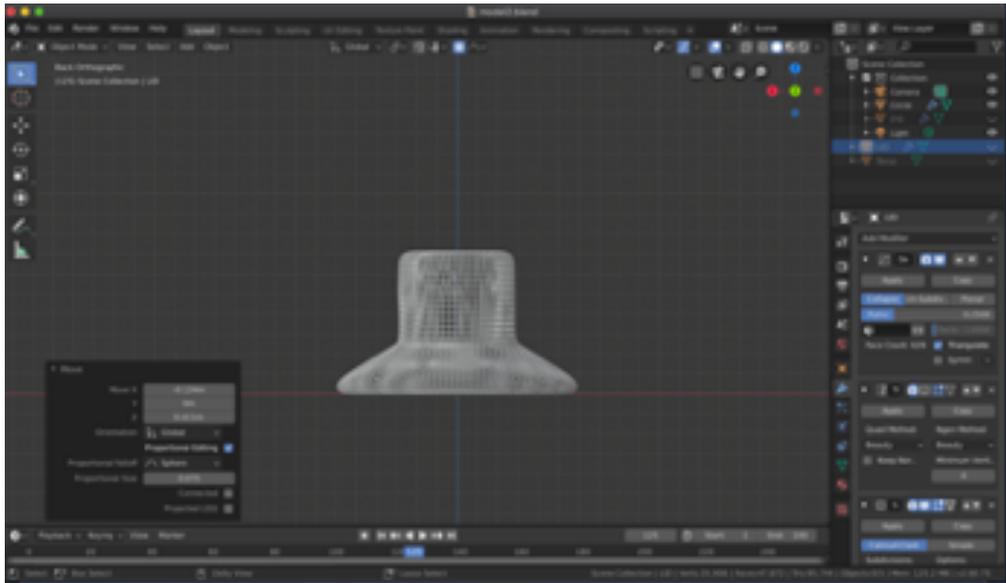


Figure 19, 3D Modelling of 'Eye' See You, Base, 2020.

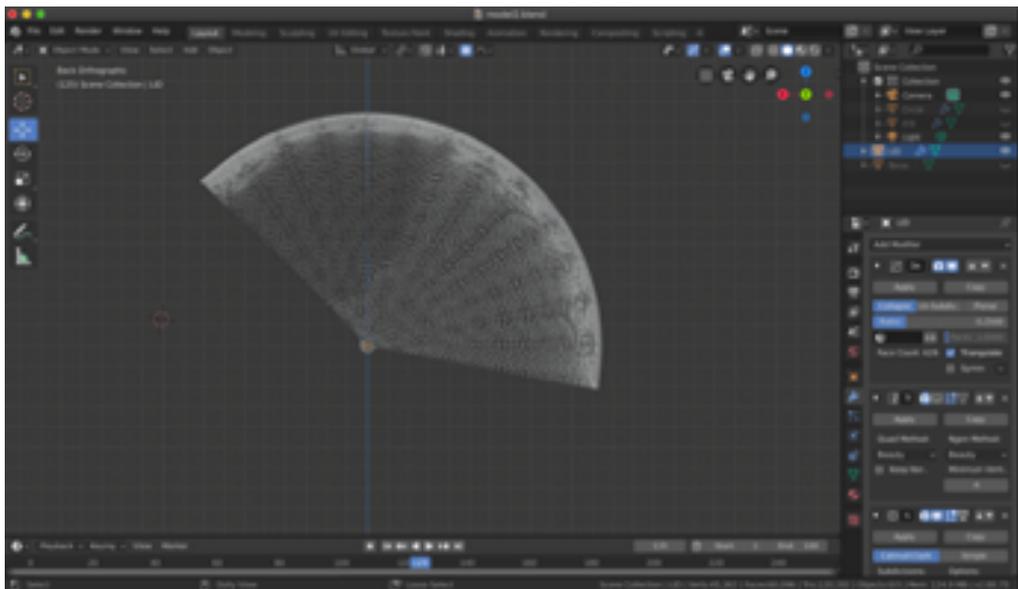


Figure 20, 3D Modelling of 'Eye' See You, Eyelid, 2020.

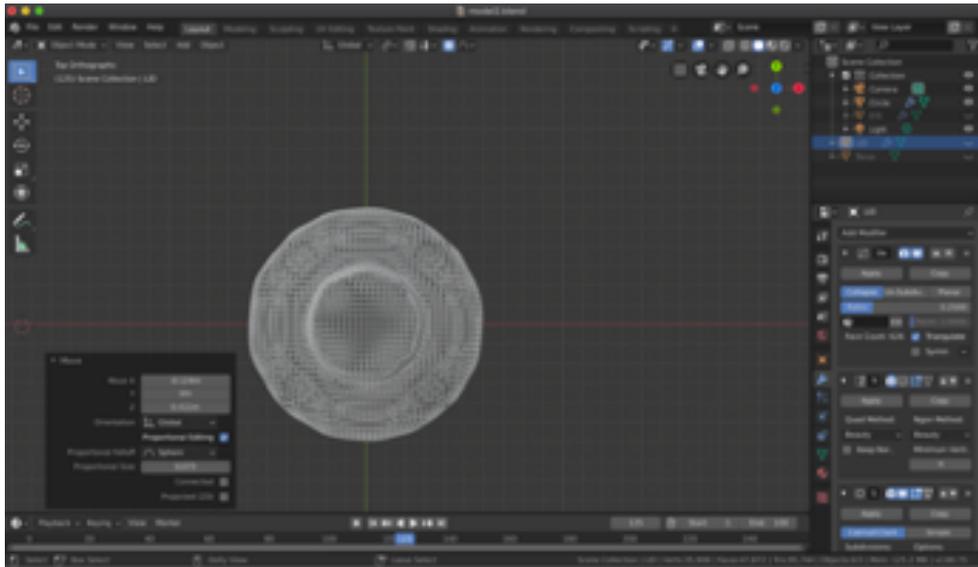


Figure 21, 3D Modelling of 'Eye' See You, Eyeball, 2020.

The web like netted wires will define the form of it and netting styles will differ. In the base thicker wires are used for and the sake of infrastructural properties, and the balancing system. The inside of the base is fairly hollow for the containment of the mechanical parts, however the bottom horizontal part is netted and consist of an armature for balancing and weight. The netting style is mostly a cage like structure. In the eyeball part the netting is fairly organic shaped when compared to the base and the edges of the interlocking (with the base) bottom part is secured and the armature is going through up to the middle of the eyeball. The netting style of the eyeball is more organically shaped and cluttering in some points, implying the veins figurine. In the eyelid wire thickness is thinner and denser as well. While the netting is still organic, it is following pattern-like figurine as a connotation to skin formation.

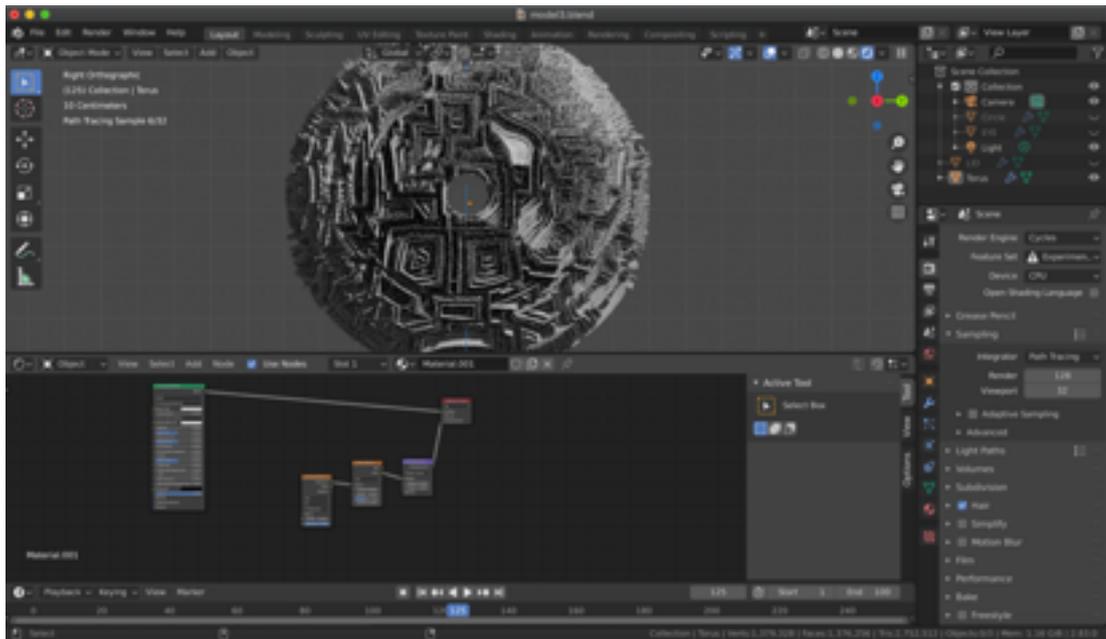


Figure 22, 3D Modelling of 'Eye' See You, Process of Iris, 2020.

The iris is the focal point of this sculpture, it does not consist of wires but computer motherboard parts like the indicator coil, oscillator, capacitor, DIMM and PCI slot. Carefully constructed iris is sharing the complexity of human iris. Every human iris is unique, it contains a unique pattern, ectodermal and mesodermal layering, dilator, sphincter muscles (Daugman & Downing, 2001: 1737). This unique structure is represented by several different parts of the motherboard which originally has different functionality, like every part of the iris.

5.4.2 Technical Process

'Eye' See You uses two movement patterns in two different parts. The eyeball moves horizontally in a 110° radius and the eyelid moves vertically in a 120° radius. The eyeball's movements are triggered by motion and eyelid is connected to a timer,

which ignites the movement in the given increments. The eyeball and eyelid movements are both powered by servo motors and are supported by the armature, also these movements are facilitated by Arduino programming. Each of these parts require its own coding and wiring, thus two Arduino UNOs support the project.



Figure 23, Arduino UNO R3 image.

The eyeball is motion triggered like previously mentioned, it is using several PIR sensors to detect motion and turn in the direction which motion is detected. When PIR sensors detect motion, the servo motor attached to the armature connected to the eyeball will facilitate the movement. The servo motor and Arduinos will be contained inside of the base structure. PIR sensors get the data and send them to the Arduino Uno and encoded data, sends signals to the servo motor. As an example, motion following circuit diagram to display the main working principle of this structure is given below (fig.24).

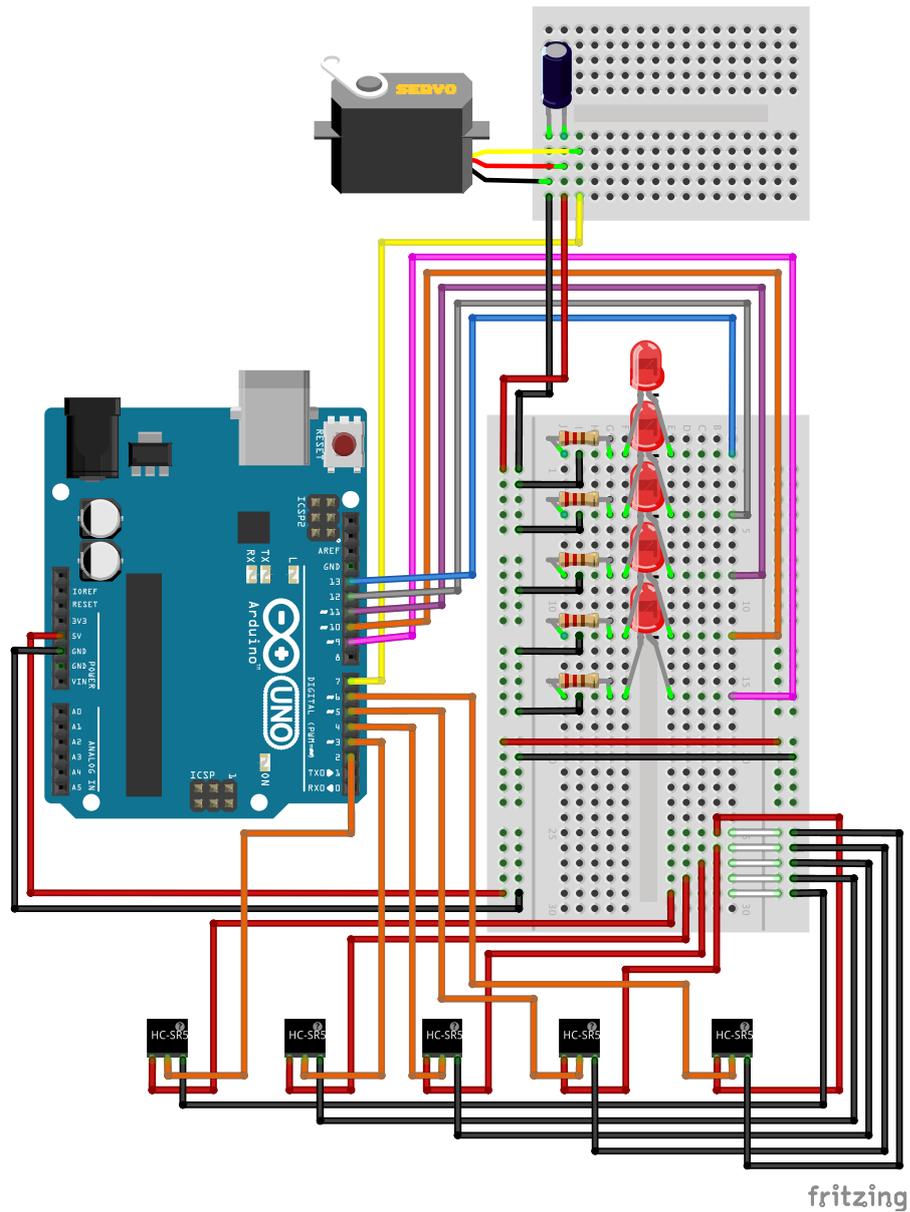


Figure 24, Motion following circuit diagram, Lindsay Fox, 2016.

The structure of Arduinos are connected and depended on the coding aspect of the motion detection and servo ignition. A short code written in the Processing language is sufficiently to operate the whole system. Representative coding example is given down below (fig.25-26).

```

exapillary_code_for_eyee_see_you
6 // Servo motor
7 #include <Servo.h>
8 Servo camServo; // name the servo motor controlling the camera base
9 int currentPIRposition = 0; // set current angle of servo
10
11 // LED status lights
12 int LEDpin[] = {9,10,11,12,13}; // LED pin numbers
13 int currentLEDpin = 9; // the current LED pin; begin with the first in the sequence above
14
15 // PIR sensors
16 int PIRpin[] = {2,3,4,5,6}; // PIR pin numbers
17 int currentPIRpin = 2; // the current PIR pin; begin with the first in the sequence above
18 int PIRprevState[] = {1,1,1,1,1}; // the previous state of the PIR (0 = LOW, 1 = HIGH)
19 int PIRposition[] = {135,117,78,39,21,0}; // assign angles for servo motor (0-135 distributed equally between 5 PIR sensors)
20 boolean PIRstatus; // Set status of PIR sensor as either true or false
21
22
23
24 //==== SETUP =====
25 void setup() {
26
27   Serial.begin(9600);
28   camServo.attach(7); // assign servo pin
29
30   for (int p = 0; p < 5; p++) { // set all PIR sensors as INPUTS
31     pinMode(PIRpin[p], INPUT);
32   } // end 'p' for
33
34   for (int l = 0; l < 5; l++) { // set all LEDs as OUTPUTS
35     pinMode(LEDpin[l], OUTPUT);
36   } // end 'l' for
37
38   //==== CALIBRATE PIR SENSORS =====
39   Serial.println("Calibrating PIR Sensors ");
40   for(int c = 0; c < 15; c++){ // calibrate PIR sensors for 15 seconds (change from 10-60 sec depending on your sensors)
41     Serial.print(".");
42     delay(1000); // wait 1 second
43   } // end calibration for
44   Serial.println("PIR Sensors Ready");

```

Figure 25, Motion Following System, Lindsay Fox, 2016.

```

exapillary_code_for_eyee_see_you
43   } // end calibration for
44   Serial.println("PIR Sensors Ready");
45
46   camServo.write(78.5); // move the servo to the center position to begin
47
48 } // end setup
49
50
51 //==== MAIN LOOP =====
52 void loop() {
53
54   for (int PIR = 0; PIR < 5; PIR++) { // start this loop for each PIR sensor
55     currentPIRpin = PIRpin[PIR]; // set current PIR pin to current number in 'for' loop
56     currentLEDpin=LEDpin[PIR]; // set current LED pin to current number 'h' 'for' loop
57     PIRstatus = digitalRead(currentPIRpin);
58
59     if (PIRstatus == HIGH) { // if motion is detected on current PIR sensor
60       digitalWrite(currentLEDpin, HIGH); // turn corresponding LED on
61       if(PIRprevState[PIR] == 0) { // if PIR sensor's previous state is LOW
62         if (currentPIRposition != currentPIRpin && PIRprevState[PIR] == 0) { // if high PIR is different than current position PIR then move to new position
63           camServo.write(PIRposition[PIR]);
64           Serial.print("Current angle : ");
65           Serial.println(PIRposition[PIR]);
66           delay(50);
67           currentPIRposition = currentPIRpin; // reset current PIR position to active [PIR] pin
68           PIRprevState[PIR] = 1; // set previous PIR state to HIGH
69         }
70         PIRprevState[PIR] = 1; // set previous PIR state to HIGH if the current position is the same as the current PIR pin
71       } // end PIRprevState if
72     } // end PIRstatus if
73
74     else { //
75       digitalWrite(currentLEDpin, LOW); //the led visualizes the sensors output pin state
76       PIRprevState[PIR] = 0; // set previous PIR state to LOW
77     } // end else
78
79   } // end [PIR] for loop
80 } // end main loop
81
Done saving.

```

Figure 26, Motion Following System, Lindsay Fox, 2016.

The movement of the eyelid is following the same principle; however, it is not connected to the motion sensors but an internal timer, which set the closing and opening movement approximately every 30 seconds. The main processing in this part of the project is to be creating an internal timer function with Arduinos. Main principle of the internal timer coding is given down below.

```
internal_timer_logic
1 //
2 This program turns on and off a LED on pin 13 each 1 second using an internal timer
3 */
4
5 int timer=0;
6 bool state=0;
7 void setup() {
8   pinMode(13,OUTPUT);
9
10  TCCR0A=(1<<WGM01); //Set the CTC mode
11  OCR0A=0x0F9; //Value for ORCA for 1ms
12
13  TIMSK0=(1<<OCIE0A); //Set the interrupt request
14  sei(); //Enable interrupt
15
16  TCCR0B=(1<<CS01); //Set the prescale 1/64 clock
17  TCCR0B=(1<<CS00);
18
19
20 }
21
22
23 void loop() {
24   //In this way you can count 1 second because the interrupt request is each 1ms
25   if(timer>=1000){
26     state=!state;
27     timer=0;
28   }
29
30   digitalWrite(13,state);
31
32 }
33
34 ISR(TIMERO_COMP_vect) //This is the interrupt request
35 {
36   timer++;
37 }
```

Figure 27, Arduino internal timer principle, Marcazzan_M, 2018.

'Eye' See You is a stand-alone sculpture which contains mechanical and technical parts inside the sculpture which allows for a variety of presenting options. Also, a simple yet craft oriented sculpture allows the viewer the immersion of sharing the gazing agency with 'Eye' See You.

5.5 Interaction and Presentation

'Eye' See You opens up the possibility of sharing the ultimate action while human beings are experiencing artworks; seeing. Seeing the artwork is a passive interaction in its given nature, however in this artwork the seeing aspect is a starting point of the active interaction. When the viewer first sees the artwork, without knowing it in the initial contact, starting the interaction and while they are moving and observing it, the artwork is responding to the interaction and follows the movement of the viewer and responding their movement with its own movement. It is not mimicking but sharing the experience of seeing. The main focus is on the movement of the human

actor in this equation because if it is focusing on the eye of the viewer and responding to the eyes of them, the agency of gazing will still belong to the human. As a simple example, human gazing is not bound to the others' gaze, but their presence. That is why *'Eye' See You's* movements are reacting to their presence.



Figure 28, *'Eye' See You presentation representation, 2020.*

These interactive properties also affect the displaying structure of the project. In order to be fully able to experience the distributed gaze, the sculpture requires an empty room, an ideally illuminated space for itself, without any distractions. These spatial requirements are enhancing the immersion. Sculpture's height is 1 meter and 35 centimeters by itself, because of the diameter it only requires a 60-65-centimeter-long pedestal to lift the center point of the iris, to the eye level. Also, an explanation and artist statement of the artwork should be outside of the room to create fully immersive and shared experience chamber inside of the room, just for the artwork and its viewer.

5.6 Digital Prototyping

Due to the Covid-19 pandemic *'Eye' See You* could not be physically built and exhibited, as such the artwork is prototyped through a virtual creation process. The virtual prototype is composed in Blender 2.83.0 software, which is open source 2D and 3D suite. The 3D model is created in five steps.

First the main model is formed in Blender using meshes, main model is constructed with four different parts representing, the eyeball, eyelid, base and pupil (fig.29).

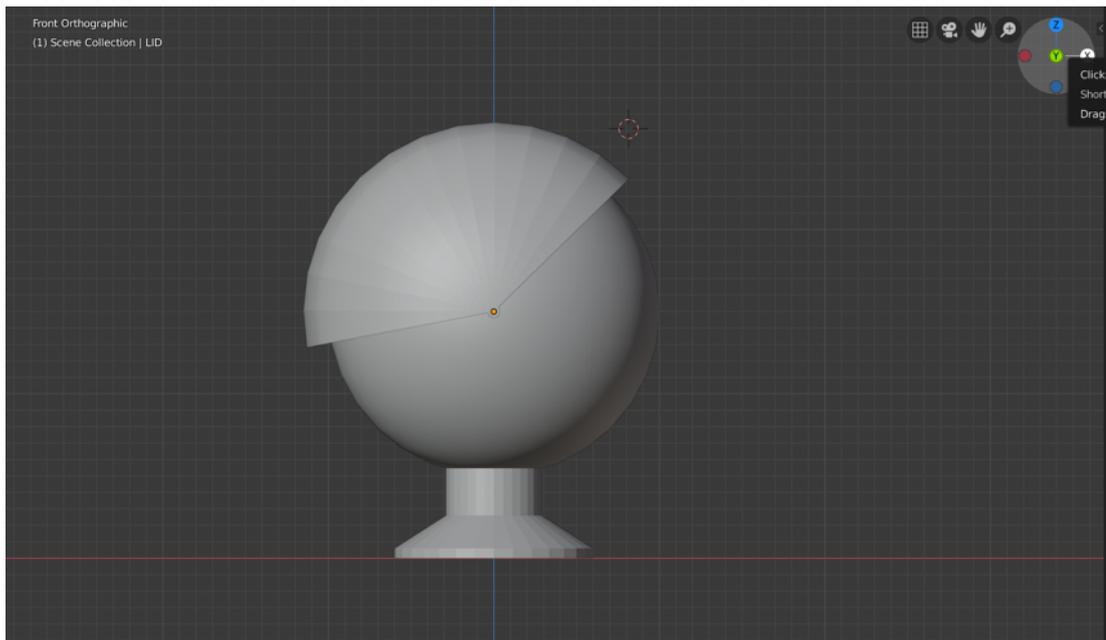


Figure 29, Modelling of the form, *'Eye' See You*, 2020.

Next step is to create wire like textures for the main parts except for the pupil. In order to be able do that modifiers will be used in the process for all the parts in order to reduce the faces and vertices in the meshes. Subdivision modifier are used for adding smaller faces for the next steps. Then the wireframe modifier is added and the

main geometry is subtracted from the equation, which creates a wire like structure. In order to create different wire textures for different parts, added modifiers varied like in the eyeball and eyelid, where the triangulate modifier is used for a more natural structure while the base has more rectangular netting pattern.

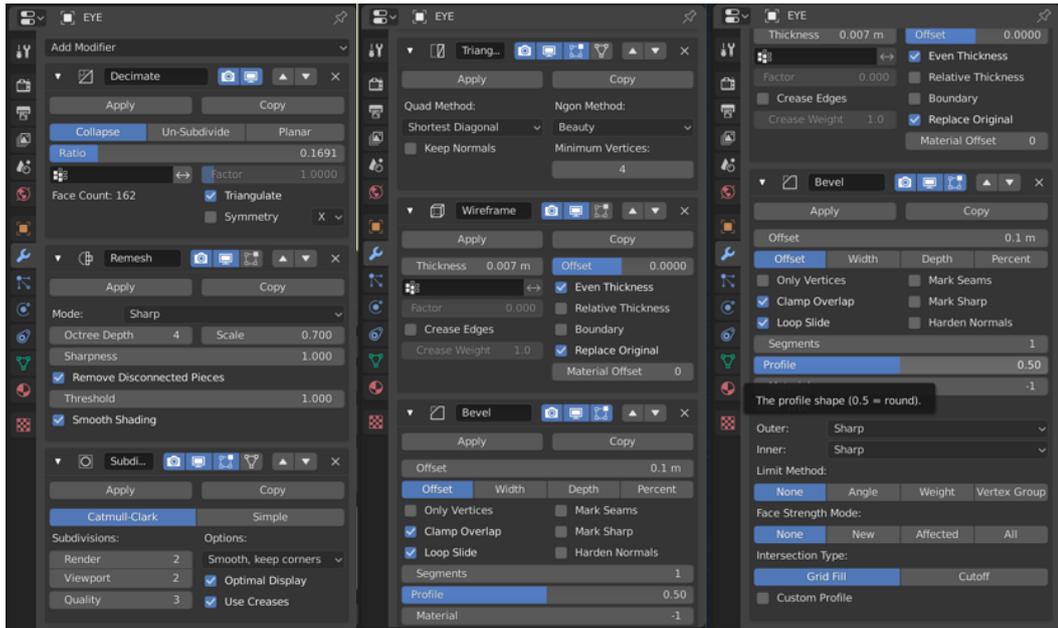


Figure 30, Modifiers for Eyeball-1, 'Eye' See You, 2020.

Figure 31, Modifiers for Eyeball-2, 'Eye' See You, 2020.

Figure 32, Modifiers for Eyeball-3, 'Eye' See You, 2020.

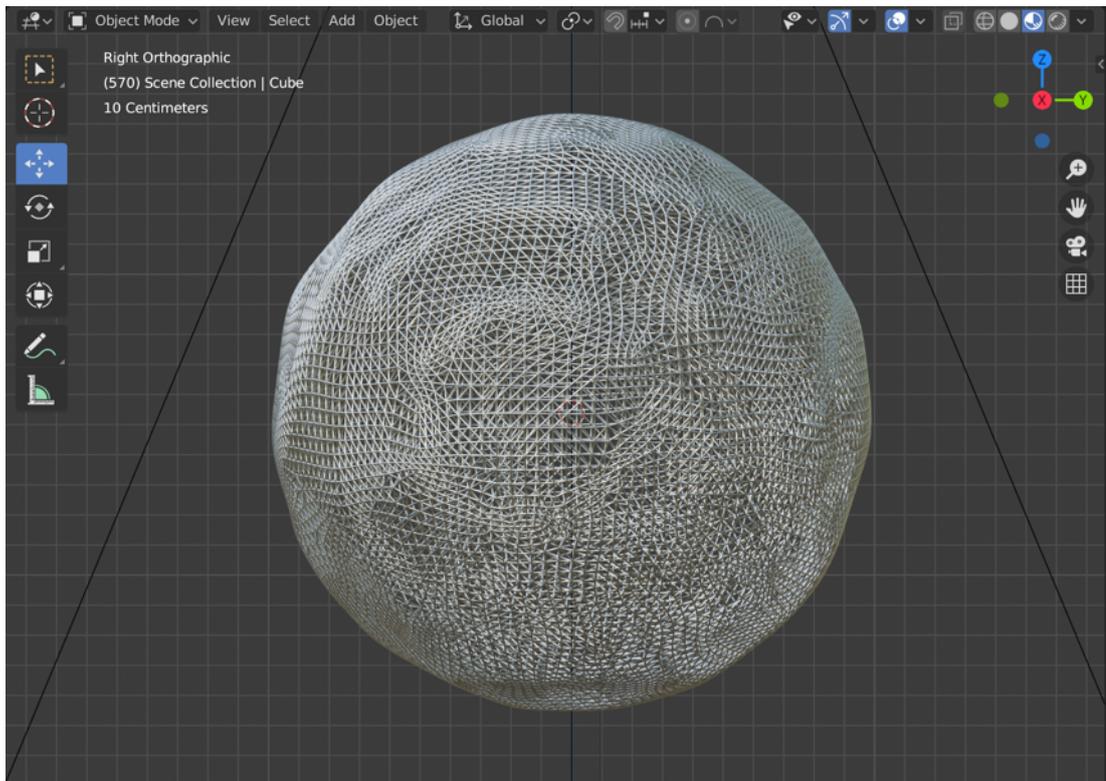


Figure 33, Wire texture of the eyeball, 'Eye' See You, 2020.

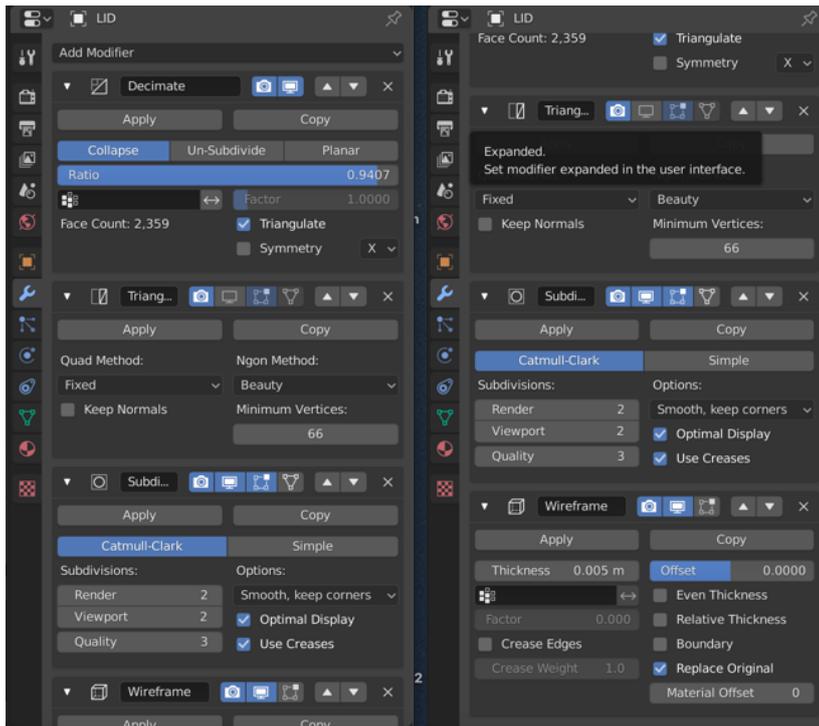


Figure 34, Modifiers for Eyelid-1, 'Eye' See You, 2020.

Figure 35, Modifiers for Eyelid-2, 'Eye' See You, 2020.

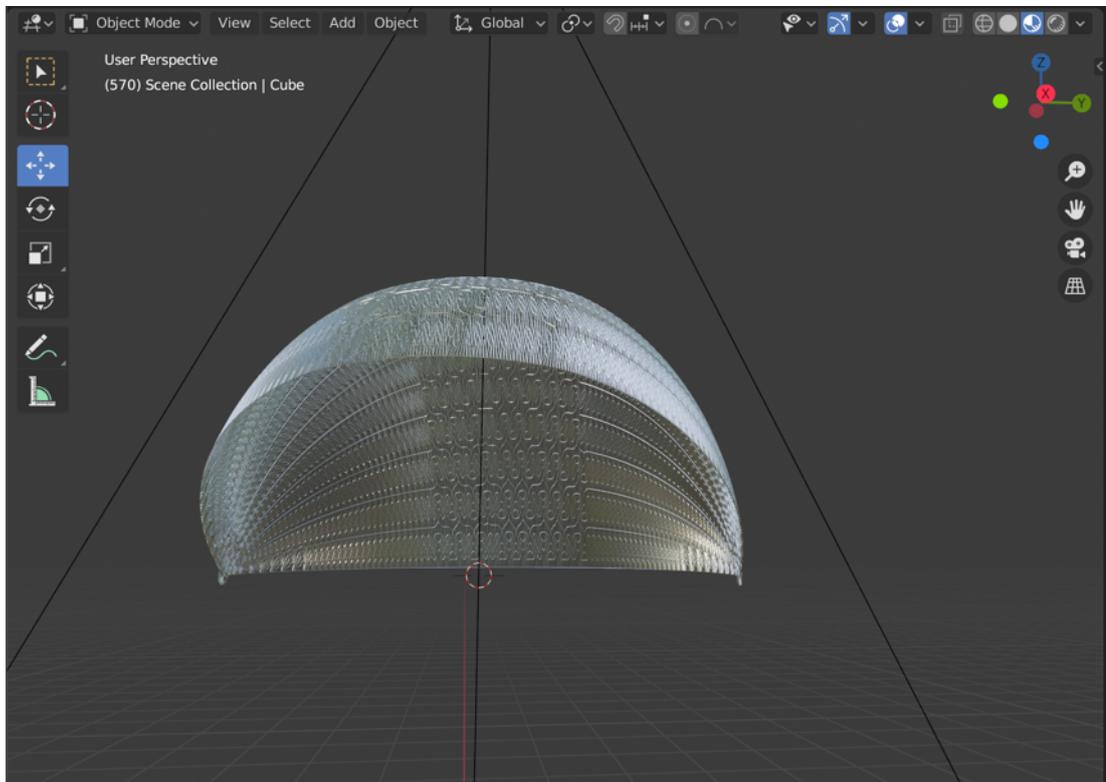


Figure 36, Wire texture of the eyelid, 'Eye' See You, 2020.

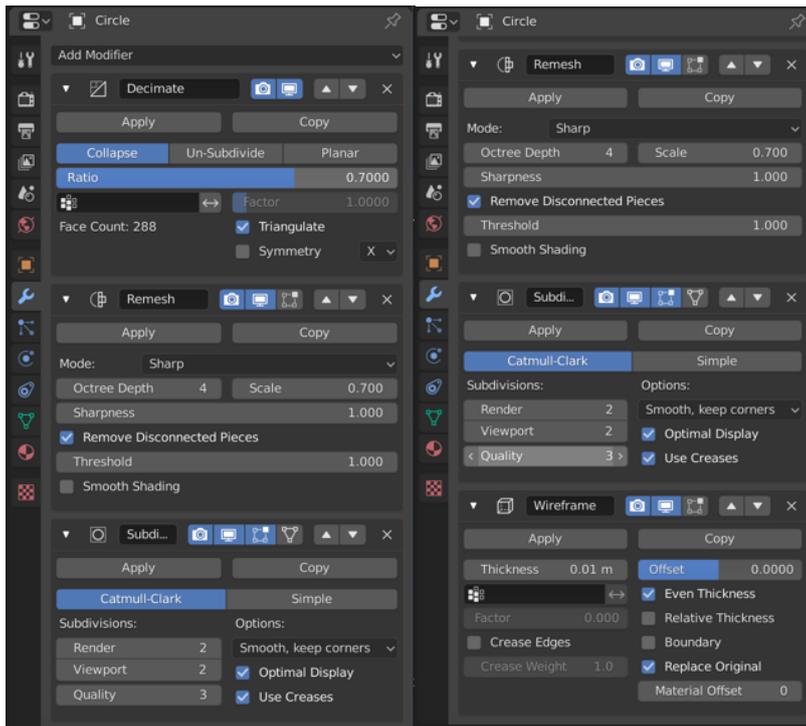


Figure 37, Modifiers for Base-1, 'Eye' See You, 2020.

Figure 38, Modifiers for Base-2, 'Eye' See You, 2020.

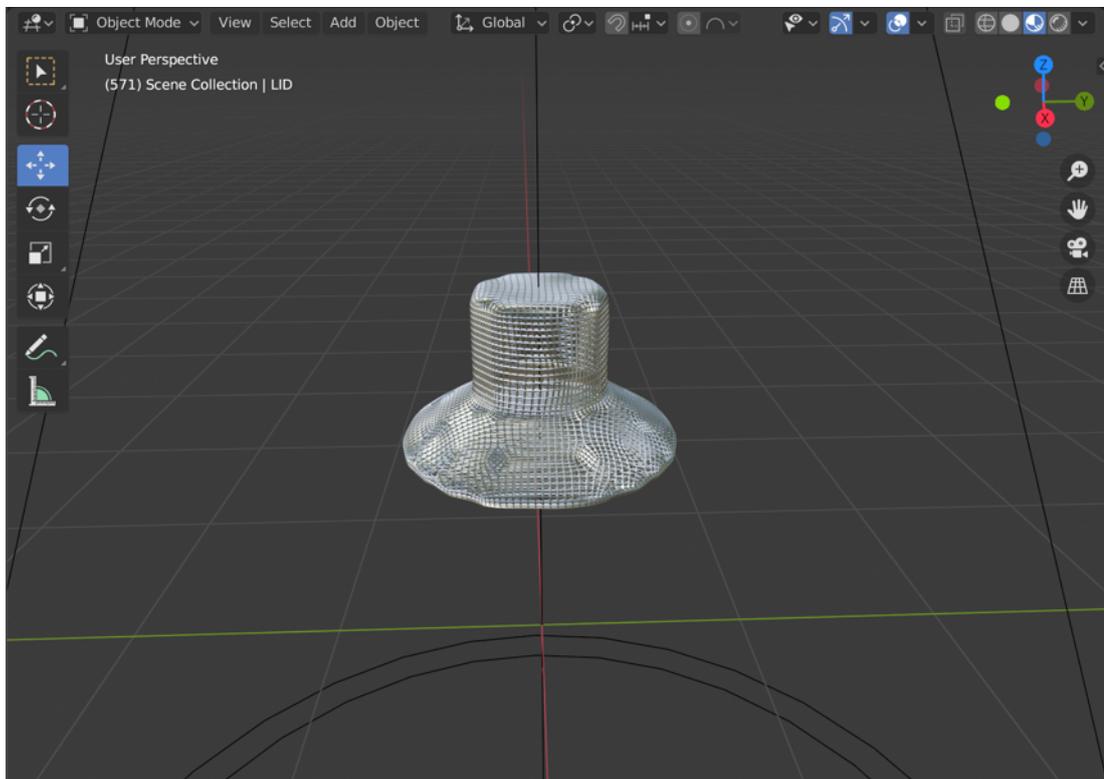


Figure 39, Wire texture of the base, 'Eye' See You, 2020.

The next step of the 3D modelling of *'Eye' See You* is creating a texture for the pupil, which resembles the computer motherboard parts, one of the most appropriate texture for this connotation is a Greeble material in Blender 2.83.0. In order to create Greeble, the first step is to set a render engine which can render Greeble, the capable engine is Cycles for this property. For this material node based system used in the software.

Display of this process will be explained step by step down below in point format and name of the nodes will be written in bold to eliminate confusion.

- Creation of **displacement node** and connecting it to **material output**.
- In **displacement** settings scale down the 'midlevel' for adding to geometry, thus texture.
- Adding of **voronoi texture** connecting it to **displacement node**, adjustment of distance metric to 'chebychev' for blocky shapes in the material.
- Creation of **noise texture** between **voronoi texture** and **displacement** and adjustment of the 'scale' for the density of pipelines in the material.
- =Adding of **texture coordinate** and connecting its UV to **voronoi's** vector input for the conforming texture of the model in the original shape.
- For controlling the texture adding of **map range**.

(See figure 40, for execution of the steps above)

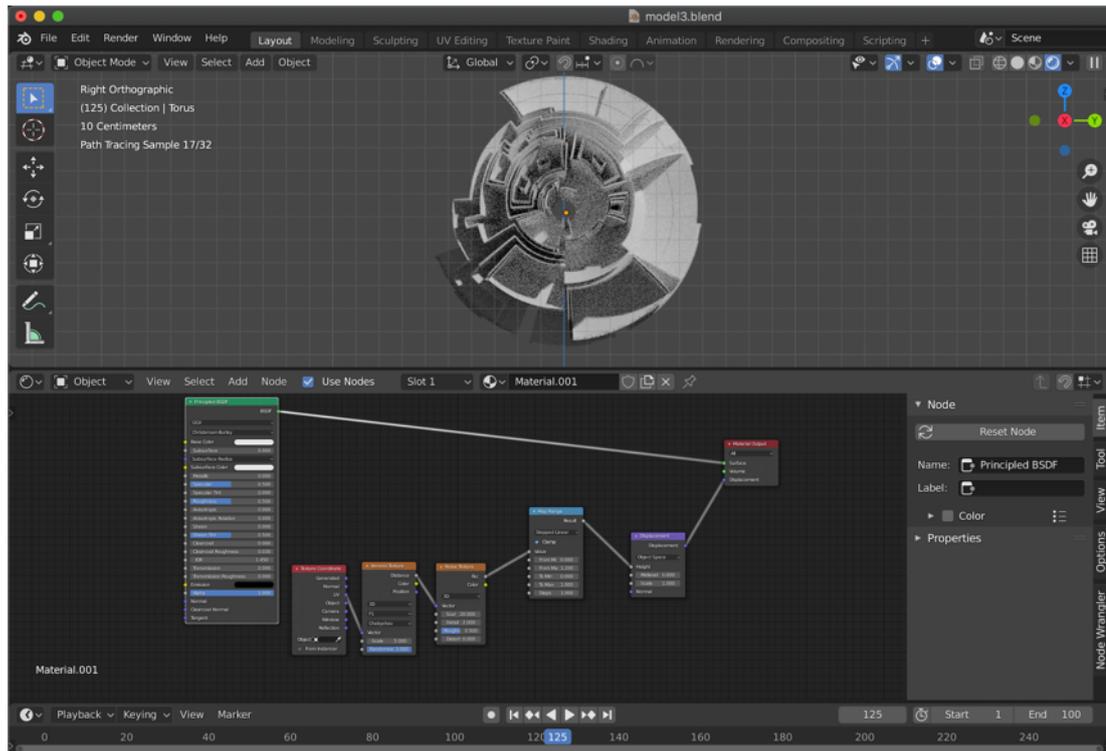


Figure 40, Creation Process of Pupil-1, 2020.

- Grouping the **displacement** for controlling the texture easier.
- Adding node input into a grouped **displacement** for be able to modify it.
- Adding **math node** to control the strength of it and changing of the operation mode to ‘multiply’.
- Adding group input outlet for values outside of the group to multiply with the given value inside of the group.
- In the group adding **map range** and setting two **group input** outlets and connecting them to ‘from max’ and ‘to max’ input in the **map range** for to scale of the **voronoi texture** to adapt to strength of the **displacement node**. Scale of the texture is effected by from these input values.

(See figure 41, for execution of the steps above)

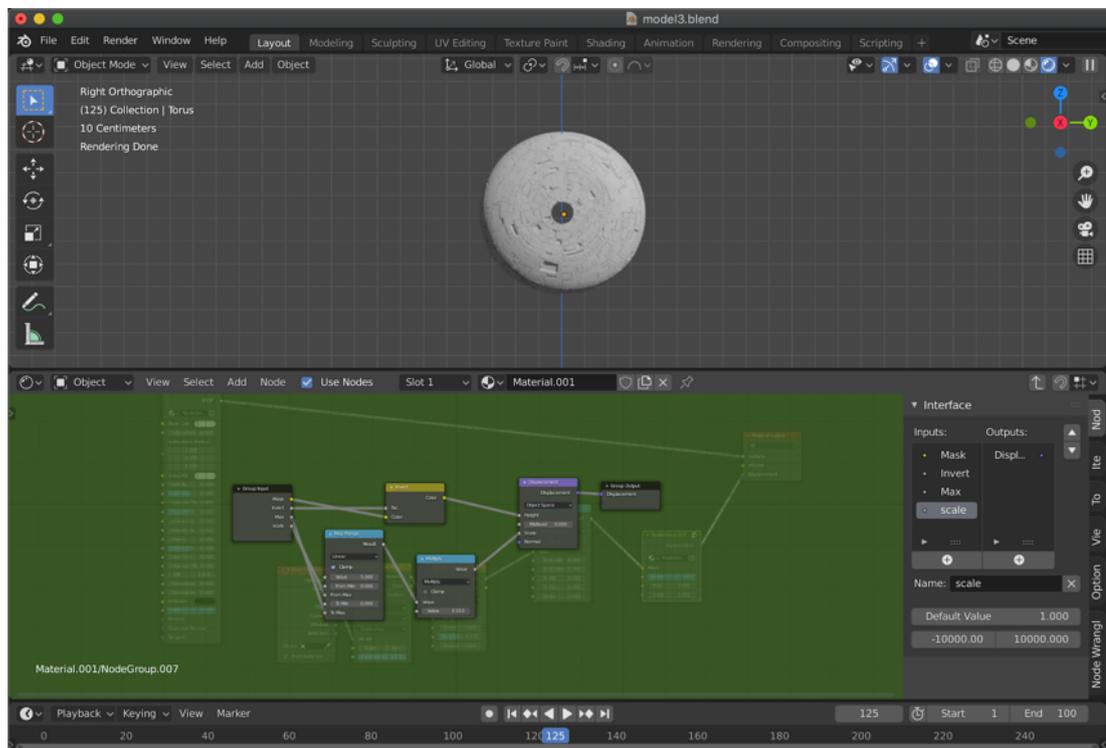


Figure 41, Creation Process of Pupil-2, 2020.

- For adding 'scale' output for **voronoi texture**, adding **math node** and setting the operation to 'multiply' then group it for input socket, after that plugging grouped **math node** to **voronoi texture**'s and **displacement group**'s 'scale' input.
- For offsettings of the pipelines creating **MixRGB**.
- Duplication of **math node group** twice and connection their outputs to 'Color 1' and 'Color 2' input, and setting values to '0' and '1' in the duplicated nodes and gathering them together.

(See figure 42, for execution)

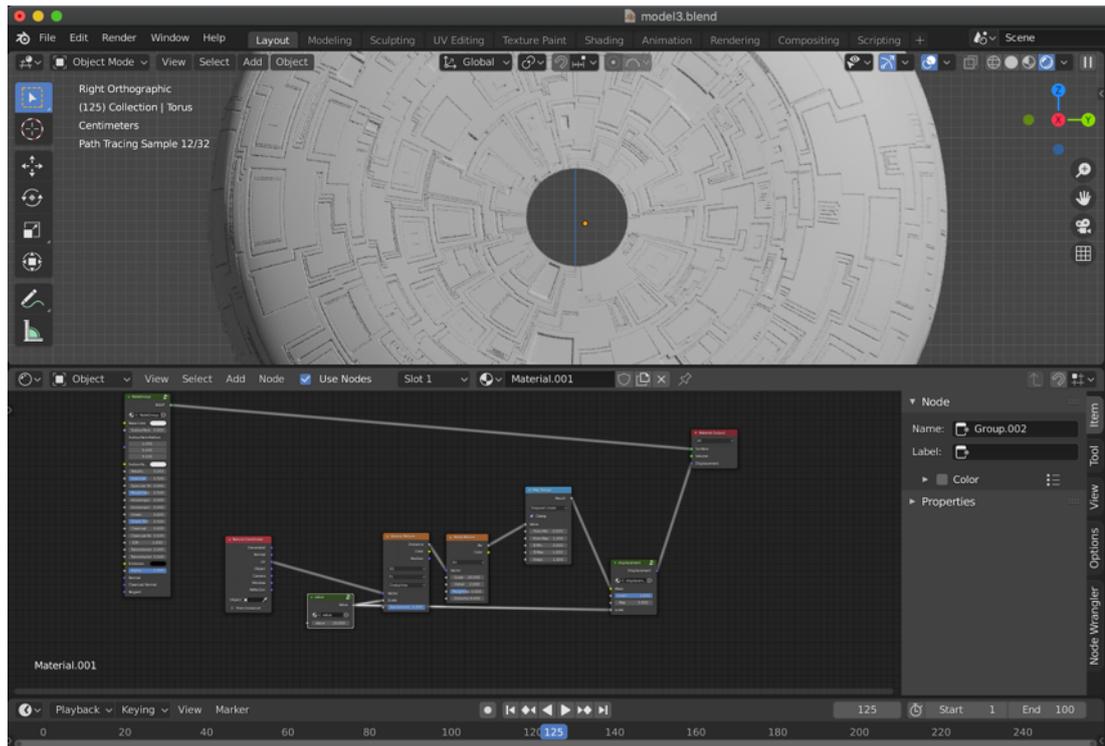


Figure 42, Creation Process of Pupil-3, 2020.

- Inside of it creating two more outlets for group input for ‘minimum’ and ‘maximum’ values. It is controlling the range of the texture.
 - Duplicating this group as well and connecting it to **Map Range** to the ‘From max’ input and setting max range of the group to ‘from max’ input’s value.
- This process makes it easy for controlling the offsetings.

(See figure 43, for execution)

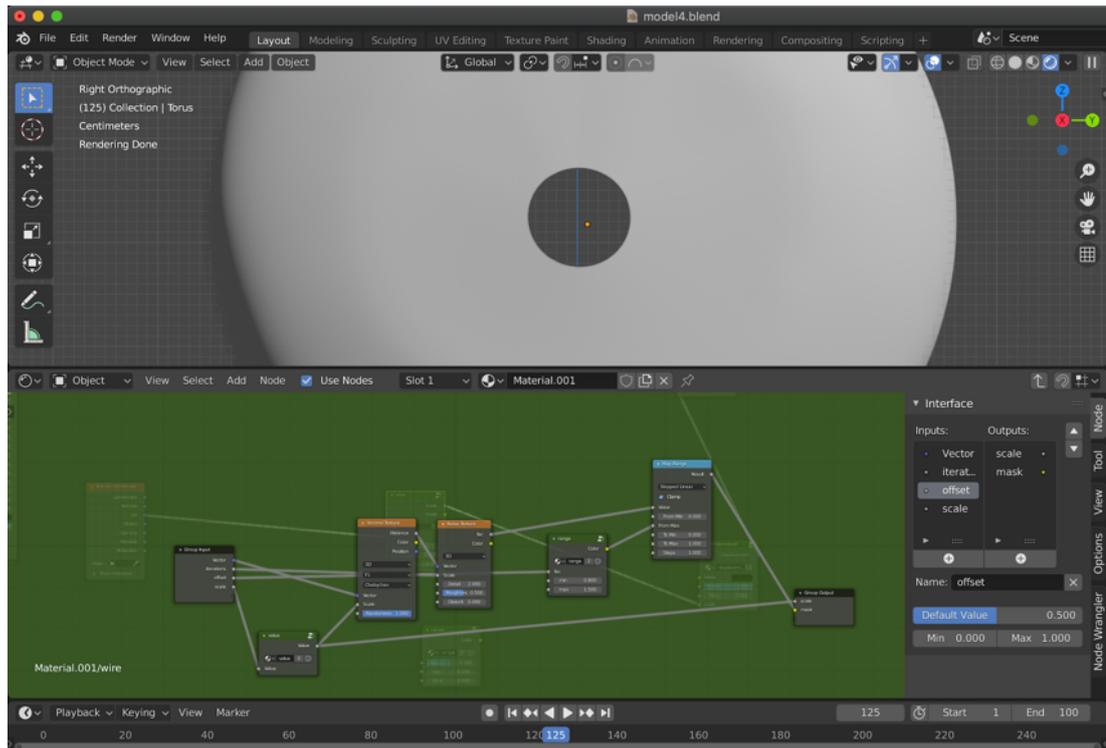


Figure 43, Creation Process of Pupil-4, 2020.

- Grouping every node between **texture coordinate** and **displacement group**. Inside of this last group more outlets in **group input** and connecting the first one to scale value and second one to **noise texture** scale input for the iterations of the pipes.
- In order to add colour to the texture **MixRGB** is created and connected to the group output for colour input node then connecting it to **Map Range**.
- Inside of the group connecting the 4th group output outlet with range for offset settings of the pipes.
- In the main node screen connecting outlet' mask with **displacement node**'s mask.
- In order to create the greeble effect, layering the created setup on top of each other for with duplication and changing its 'scale' and 'iteration' values.

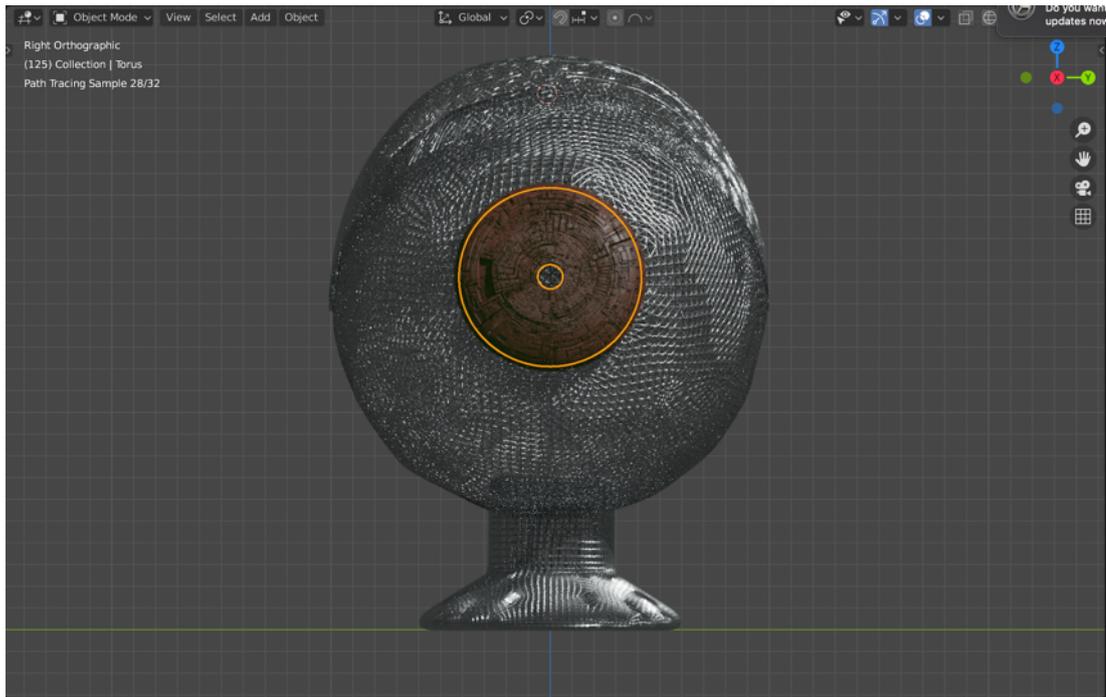


Figure 45, Textured Model of 'Eye' See You, 2020.

In the next stage of the virtual creation pedestal and exhibition space is modelled and textured inside of the Blender 2.83.0, for creating 3D representation as close as to the originally planned setup in virtual world (fig. 45).

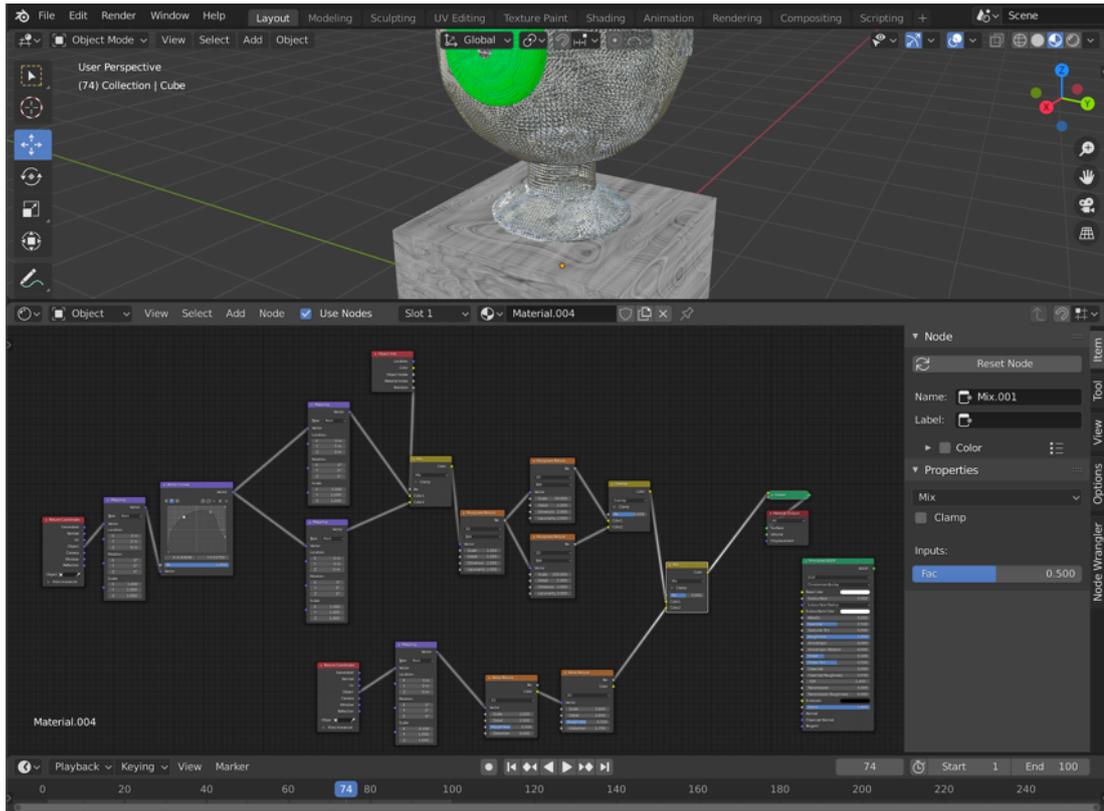


Figure 46, Environmental texturing of the space and display equipment, 'Eye' See You, 2020.

Last step of this virtual creation is the keyframe animation of the 3D model, in order to experiencing the movements of the sculpture and rendering it. The render consists of three different camera angles for creating an illusion of POV experience of the artwork.



Figure 47, 3D model of 'Eye' See You in the space, 2020.

CHAPTER 6

CONCLUSION

The advent of technological innovation in the 20th century is considered as a historical marker for humanity's sake. All the conceptualizations of human actions apart from our basic instincts changed rapidly and dramatically considering the progress humanity has made until the industrial revolution. With the introduction of the notion of the machine through human advancement, societal change became inevitable. Machine and mechanization did not just impact the workforce, it spread to many aspects of daily life and even became embodied in the thought process of beings. 'Machine' is disclosed as a distinct object, however the concept of the machine is currently used as a marker, a signifier to the relationship between new apparatuses humans hold in their hands (Broeckmann, 2016).

From an anthropological standpoint, human-beings dealt with their environments with the help of the tools they created (Pobiner, 2016, para.7). The harsh conditions of their surroundings pushed them to build tools that come from nature itself. The

convenience aspect leads them to innovate further and further. While tools are creating a fruitful relationship between humans and the environment, also it is underlining the fact of detachment in time. Human autonomy created the relationship as well as the detachment from nature, while animals are adapted to their environment, humans started to change their environment for their future goals (Broeckmann, 2016: 18). Operational tools called machines were created -more or less there are several definitions and explanations regarding the *machine-*, the basic structure is machines are operated by humans for humans and the ones who operated were named after the 'tool' itself, the machinist. However, the innovation component never stops, the invented concepts lead to techniques, thus the technology.

Human and machine combination has its own co-dependent relationship dynamics, throughout the years the dynamic between these actors changed and evolved. One factor to qualify and quantify the relationship is the level of interaction, which fluctuates throughout the creation. Once, the decrease in interaction time was considered as an innovation -like self-adjusted machines like thermostat-, then the quantity of interaction defined the value of some machines' -like the television, smart phone, game console- and worth of innovational potential. These changes in demand -once seamless, then active interactivity- affected other areas of use for the machines. In the last few decades machine integration in art increased and new fields formed generative interactive art, which derived from computers, projectors, and many more electronic machines. The effect and integration is not limited with generative computer driven art, also aesthetic properties of machines and theories related with the relationship, dependency, and interaction between human and machine shaped many artworks.

Machine and human connection and its interactivity dynamics is heavily discussed in this thesis through mainly with Hayles' Posthuman, distributed cognition theory and Machine Art. Both subject matters related with the issue considering machine and human relationship and its interactivity dynamics. However, this particular work and thesis is not just analyzing existing theories, points, and aesthetics, *'Eye' See You* is focusing on the potentiality in interactivity level in terms of distributed gaze through Machine Art and its aesthetics. Distributed gaze condition is derived from distributed cognition and this new term can open up new potential artistic research and theorization road.

A concept of distribution cognition is displays humans are experiencing this concept everyday with functional machines they build. This was the starting point of the main argument of this thesis. Why not adapting this shared experience to art?

Human-beings rationalize the outside world through their senses. They hear, touch and see their surroundings. The main focus of the project *'Eye' See You*, is one sense; sight. Human-beings are consuming/observing plastic arts mostly with their eyes and seeing a sculpture considered as passive interaction. However, one of the most important sense in the contextualization of art can be transforms and ignites the active interaction. Sharing the main property and activity of this sense with an artwork is opens up possibilities for future iterations. While humans are already sharing their consciousness with machines, they can also share their gazing agency with art.

Distributed cognition is a proof of theoretical concept for in this argument, adaptation of this theory to distributed cognition also creating a new possibility and outlook for the machine art. The reciprocal gazing agency between the human and the artwork is constructed with regards to Hayles' Posthumanism as well as with Machine Art. Throughout the medium of posthumanism and posthumanizing, Machine Art occupies a colossal place, with regards to that while posthumanizing the eye, machine art is a part of the theory and practice.

The gaze driven interactivity experimentation hold on in this project presents new avenues of research and practices like previously mentioned. The Posthumanized Eye guiding this discussion appropriated the concept on the theoretical level. In further experimentations, the degree of abstraction and higher level of abstraction in the form of the sculptural conception adds more to the identity of the material form and figuration of the posthumanized eye and the aesthetic representation of the creator, thus mine. Creating an artwork driven from theorization is one aspect, further iteration might be the dysmorphication of the posthumanized eye according to the style view I acquired.

'Eye' See You paves the way for the further exploration of the concept of distributed gaze through machine art. This new interactivity experience position between human and machine art opens up new possible artistic research possibilities and practices. Gaze driven interactivity and shared agency with machine art can iterate new discussions about our relationship with the creations human made.

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APHENDIX

- Artist Statement

'Eye' See You is here to share an experience with you. An experience once belonging to some biological species, seeing. Once you get inside of the room, while you are gazing at this artwork, it will gaze back at you, follow you with its sight. Once you enter this room you will share your gazing agency with 'Eye' See You. Once you enter this room it does not matter whether you look at it or not, it will look at you, thus the gazing agency will not belong just to you.

'Eye' See You is a mechanical eye sculpture which is inspired by Katherine Hayles' Posthuman theory, and it adapts her notion of distributed cognition through machines into the framework of art. This Posthumanized Eye is waiting to meet its inspiration, you.

- Artist's Biography

Diba Dilsiz was born on May 03, 1995 into a multicultural family. Even at a young age she had an interest in art and human anatomy. Her interest in art was mostly personal and self-taught in the early stages of her life, however having a family full of doctors fueled her interest in human anatomy.

She studied Communication and Design as her major, and Graphic Design as her minor degree at Bilkent University. During her undergraduate studies while her interest in art grew, she found another passion, film making. After finishing up her undergraduate studies, she started her graduate degree in the Master of Fine Arts program in the same department.

Her artworks are inspired by the formation of human anatomy and try to capture the dysmorphia behind it, behind the rigid structures of the human body. There is a dysmorphic creature behind everybody, full of emotions, a disembodied creature, who tries to find themselves.

Her other artistic passion is inspired by the formations of machines, not the functionalities but their possibilities.

She hybridized some parts of her artistic inspirations and created her last work, '*Eye*'
See You.

