# *New Relations in "Post" Era*

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# Abstract

In three chapters, the understanding of relationship between human and machine is discussed, based on various theoretical background and artistic practices. The first chapter contains two art projects of the writer, and deals with the new perspective of machine and human subjectivity. In addition, chapter 2 of this thesis investigates how this new relationship affect the audiences and digital artworks in museum. It focuses on relocated audiences who are positioned through media art. In the last chapter, by referencing protagonists from pop culture that deals with futuristic world, it explores the expecting problems and people's reactions to high-technologies that we could experience from the fourh industrial revolution.

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# Introduction

“AlphaGo resigns. The result ‘W+Resign’ was added to the game information.”[1] This message appeared on AlphaGo’s monitor and then the human avatar put two stones on the board. This act is literally called as “throw the stone” in Go that means giving up the game after admitting the lost. It was the moment when the Korean Go master Lee Sedol (* 1983) who is ranked 9 dan which is the highest in the Go game, won a game against the program AlphaGo that run on a supercomputer. Right after, applause and acclamations filled the press room. Among them, there might be a relief because it was the first victory of human after three straight defeats. This “Google DeepMind Challenge Match” was a five-game series played in Seoul, South Korea from 9th March in 2016 between Lee Sedol and AlphaGo, the Go program developed by Google DeepMind. All games were won by resignation, and AlphaGo won four matches. It has received a lot of attention from the beginning, since it was a challenge of a human against artificial intelligence (AI). Unlike chess, Go is one of the most complex board games in human history that requires strategic and creative thinking. Therefore, it was a challenge for Google as well, developing an artificial intelligence to solve the game in an intuitional way. And it successfully proved its high ability so that Korea Baduk Association[2] awarded it the highest rank, “honorary 9 dan.” This match made a deep impression on Korean people’s mind, altered their notions of the so called fourth industrial revolution and AI that used to be considered as ” something just heard of.” Since then, discussions about this subject have been raised in other fields.

AlphaGo match might have brought the fear on the fourth industrial revolution, on the other hand, there is an expectation of Tesla’s autonomous vehicles, at the same time. Between the tension of “already” and “yet,” the fourth industrial revolution has been described as Utopia or Dystopia. Those who affirm the new technology expect that it will solve the

[1] Sangpil Lee, “이세돌, '알파고'와 '세기의 대결'…'신의 한 수'를 찾다,” http://stoo.asiae.co.kr/article.php?aid=34036129182 (accessed May 8, 2019).
[2] Baduk is the Korean word for Go

problems of Capitalism by creating new jobs and freeing people from labour, and they expect hope for a new positive life style. Whereas, there is also a concern that high technology might cause human alienation. And they make cinematic imagination that robots with AI become superior than human kind and become an enemy. Besides, there are serious levels of opinions that a few giant companies possessing essential technologies will control and manipulate every part of our lives.

Like it or not, this era is very near and the commercialisation of new technology seems only a matter of time. And human are interacting very close to machines and technology more than anytime. Humans used to look up the sun and stars in the sky to navigate. But now we can pinpoint our location based on the GPS data from satellites in space. It even provides the shortest way to the destination even by considering traffic jam as well. In addition, the internet that we are using is not an abstract digital space, but it is a very practical space that significantly affects the physical world around us. In the internet, we are deconstructed as data such as, financial credit, consumption patterns and so on. Humans are not a major group in there anymore, we exists as a small part of the whole database. This new paradigm causes significant changes in our society in general.

> Search engines, ad servers and collection algorithms for our “personal data” are now the dominant population of a network in which each human user is reduced essentially to the “data” that constitute the major part of their presence in the economic system, like a hunted animal.
>
> -Nicolas Bourriaud (* 1965) Translated by Brent Heinrich,
> "Notes for “The Great Acceleration” (Taipei Biennial, 2014)"

In digital culture, human became diverse forms and contexts, and this change demands new definition of human being. This means that the modern understanding of humanism is criticised in various ways. Describing a new relationship between human and machine is one example that suggests not to set human as “subject” and non-human as “object or the others.” This theme is explained by the notion, “extension of body” (McLuhan, 1911 - 1980), or “Actor Network” (Latour, * 1947). It is not only philosophers, but artists also sharply react to this changed situation, and artists are using technology as a tool and as a subject through their artworks like, visual art, film, novel, animation etc. For example, some

media artists adopt AI for generating images. Unlike traditional paintings, artists in these days do not have to use brush and oil colour. AI can learn the style of painting and it represents it with any forms. It definitely uses technology as a tool, but it also shows how technology can make differences in painting field, and opens discussions on it. Cyberpunk is another example of it that is considered as a genre that focuses on high technology and human life. William Gibson's (* 1948) *Neuromancer* (1984) could be a good example of cyberpunk. The film *Blade Runner* (Ridley Scott, 1982), *The Matrix trilogy* (The Wachowskis, 1999-2003) are other works of this genre. 1995's animation *Ghost in the Shell* is a prominent Japanese film directed by Mamoru Oshii (* 1951) which is quoted frequently regarding this theme. In those works, vague boundaries of human and non-humans, ethical rules and related problems are creatively discussed based on the background of the influential technology of the fourth industrial revolution, net, telecommunication, bio technology and AI. Furthermore, new technology and its impact on humans as well as its redefinition of non-human and machines alters also the relationship between the audience and artwork in a museum.

The first chapter of this thesis focuses on the new relationship between human and machine. I develop this subject through my art projects, *The Clock* and *Warm Letters*. The former is the work that uses a clock as a symbol of a modern machine. The work is computer-based and operated by sensing the touch and the heartbeat of the audiences. The latter, on the other hand, visualises letters that are not seen through human eyes. It covers the digital culture where people perceive the world through digital devices. Based on Lewis Mumford's (1895 - 1990) theory and Maurizio Lazzarato's (* 1955) and Marshall McLuhan's media theory as a theoretical background, the Chapter discusses the changed subjectivity.

Chapter 2 demonstrates the new relationship between audience and artworks in media art. Nicolas Bourriaud's "Relational Aesthetics" is mentioned and the chapter consists of three sub themes, "Bilateral Gaze," "Media-Induced Tempor(e)alities & Techno-traumatic Irritations of 'the Contemporary'" and "Please Touch." Chapter 3 begins with the question how humanism is affected when there is a big technological change. Since humanism cannot overcome certain social or political problems the prefix "post" is used for new concepts that analyse current social and technological developments. Chapter 1 and 2 partially share what posthumanism criticises, meanwhile the third chapter describes it through the voices of posthuman protagonists in popular art like, novel, film etc. They tackle "anthropocentrism"

and the existing arrangement of human and non-human. The ambiguous discrimination of human and nature, species are revealed by the diverse figures from those works. In general, they break the modern humanism that is established by Western male perspective. Moreover, they suggest to form a new type of "subject" in this era.

When I first invited audiences to touch my work *The Clock*, I could find various reactions from them. There was a joy, worrying, curiosity and sometimes, indifference. There were many unexpected reactions as well, especially when I pretended that I am not the creator of the work. The audiences investigated my work and they asked, suggested in surprising ways. This made me to consider how people create relationships with art projects, especially when their presence is needed to the work, providing their biological data, for example. And I realised that this types of relationship apply to not only between work and audience, but also apply to human and the world we live in. Through numbers of philosophers and artists, I could also investigate how they inhabit in the world. Just like I could discover new relationships that I was not aware of through my projects, both of theories and artistic practices also broaden my perspective on myself and other beings that are existing around me.

# Chapter 1. Human and Machine

## 1-1 The Clock

*The Clock* is an installation of two working clocks on the wall. But only the frames are real physical clocks, the movements of the hands are programmed and projected. A pulse sensor is also installed on a table. Although the clocks look identical, one goes in real time, the other one's speed is changed by the user's heart beat in BPM (beats per minute) that is detected by the sensor. When the BPM is above a certain threshold level, the clock movement goes faster. When the heartbeat slows down, the second hand goes backwards. In other words, if the pulse rate of the user is above 85 BPM, the hands of the clock moves 2 times faster. In contrast, when it is below 65 BPM, the hands moves backwards. It is similar with manipulating time by personal biological rhythm. One of the most important ways of thinking that affects the understanding of time is Einstein's (1879 - 1955) "special relativity."[3] And the theory explains that there is no absolute time nor absolute space. This discovery that was found in early 20 century brought the revolutionary reform of concept of time in human history.

The concept of *The Clock* is based on time relativity. The audience can experience this by comparing two working clocks where one of them controlled by the audience. I mentioned Einstein's theory regarding the theme, but this project does not represent scientific fact. Rather, *The Clock* borrowed the concept of "biological clock" chronobiology and visualises this in a playful way. Moreover, another important attempt of this work is breaking away from the perspective of a clock as a technological "tool." By touching the sensor that is connected to the clock, the movement is changed. In other words, this work operates through

[3] Nola Taylor Redd, "Einstein's Theory of General Relativity," https://www.space.com/17661-theory-general-relativity.html (accessed May 8, 2019).

the contact and the connection between audiences and the work. Therefore, it suggests a new relationship of human and machine that is articulated and closely related, instead of existing separately.


Fig. 1. Jeongmin Han, *The Clock*, 2018,
Arduino, pulse sensor, projectors, technical advice by Paul Modler.

Working Process:

The pulse sensor is connected to a microcontroller. I used the open source platform Arduino and the Software Max/MSP to process the data. Both clocks look identical and go normally by the time. Then, when the user puts his/her finger on the sensor, it collects the pulse data and digitises it. The program Processing visualises the BPM, while Max/MSP uses the serial data to detect the BPM value for controlling the hands of the clock. Depending on the parameter the speed of one clock goes faster than the real time or it goes backwards. But if the threshold value is too high or too low, it takes the value as noise, so the it goes back to

the normal speed. That is the reason why both clocks move identical, when audience does not engage in the work.

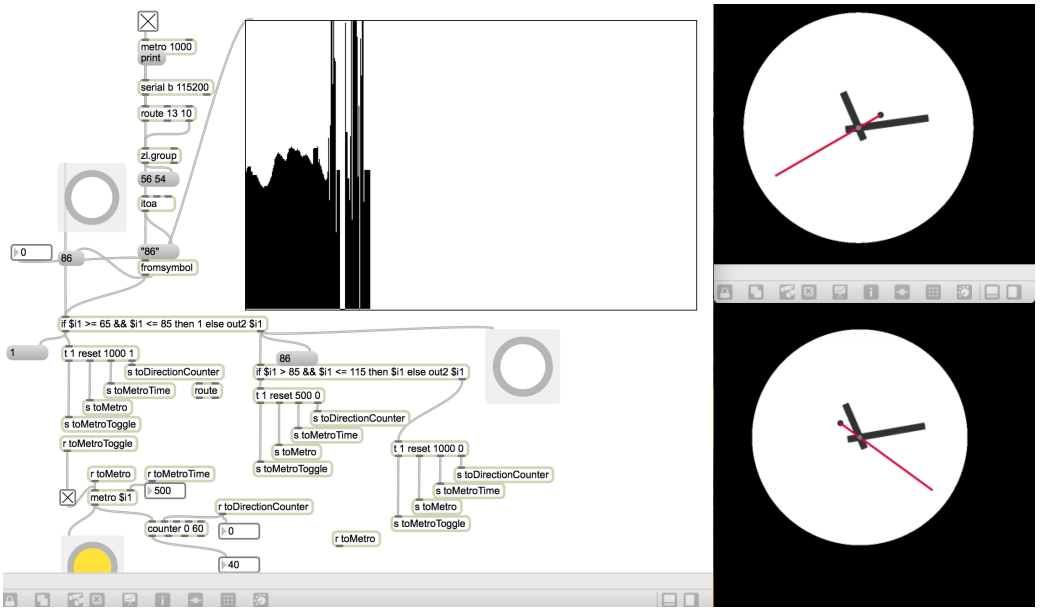


Fig. 2. Jeongmin H, 2018, woring process: pulse sensor and Max/MSP

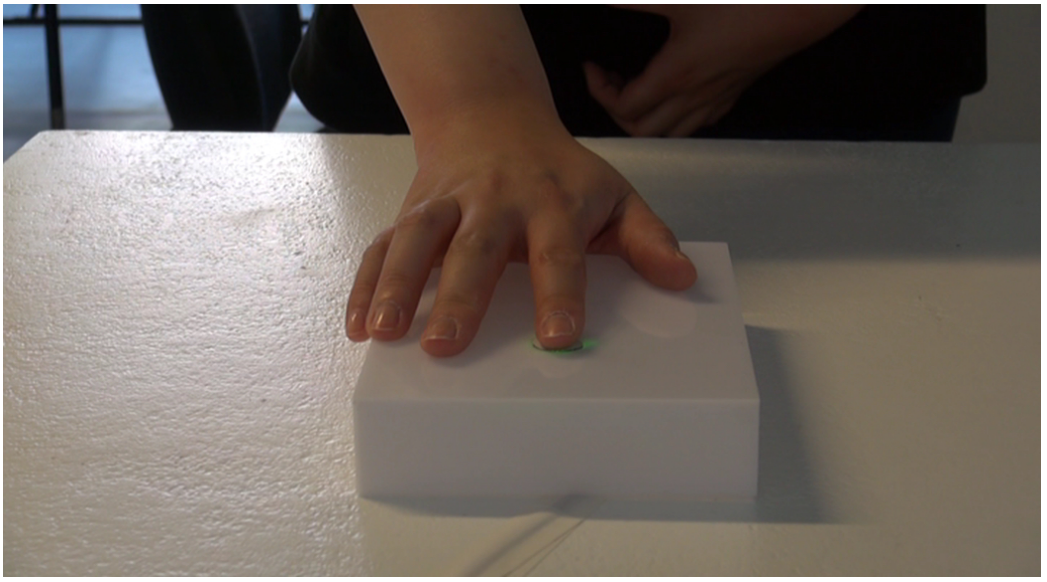

Fig. 3. Jeongmin H, 2018, woring process: installed pulse sensor

The mechanical clock is one of the symbols of a machine that represents Western rationality. “Rationality is the possibility of recognising cause and effect and representing it

repeatedly, and mechanism is the possibility of realising rationality through external object."[4] For the Western society, the mechanical clock was something astonishing. After the invention, time that could be recognised by looking up the Sun and stars from the sky became the "object" that moves visually with systemic clockwork, and quickly became the part of daily life. And this means that time that was considered as the creation of God became manufactured machine, the mechanical clock. Produced clock machine is separated from human in this ways. Human own their creation and control it. This makes human as subject and machine as object.

Lewis Mumford focuses on an interactive relationship between human and machine. For him, the origin of clock is not from the mechanical representation of clock, rather the internal principle of time. At the point when mankind could established the concept of day, week, and year, Mumford sees that clock was already invented. Whether it was for predicting the seasons for seeding and harvesting or for religious ceremonies, that concept is prior to the sophisticated mechanical clock. Landon Winner explains this in the foreword of *Technics and Civilization*, "Perhaps the most memorable of the moments Mumford describes is the story of the monastery and the clock. In Benedictine monasteries of medieval Europe, spiritual and working life was divided into precise units of time, the canonical hours, as a way to magnify the strength of the monks' religious devotion. This regimen gave rise to a need for devices that could measure time: hence the development of the first simple, reliable clocks. The monasteries, in Mumford's view, "helped give human enterprise the regular collective beat and rhythm of the machine; for the clock is not merely a means of keeping track of hours, but of synchronising the actions of men."[5] Therefore, "Clock is not just a mechanical supplement that exists apart from human, but it is the representation of critical human characters of perceiving time."[6] Needless to say, humankind did not "own" time after the creation of clock. Instead, time that already exists in our lives is just measured and visualised through the physical clock. And clock is not only produced in factory, but also it produces human characteristic mechanically. The clock is a good example of the interaction of humans and tools. With the division of labour, the clock became one of the icons of industrialization. It

[4] Jinseok Choi, The text is originally written in Korean, and I translated it in English. This is "chapter 1" of the book *Fragmented Body and Text: Stage of Posthuman 2, (*Acanet, 2017a). 21.

[5] Landon Winner, "foreword" of *Technics and Civilization.* (University of Chicago Press; Reprint edition, 2010 (1934)), 5.
[6] (Choi 2017b, 24)

became an ubiquitous tool and a whole market produces time measuring equipments for daily life and high technology. Human and machine are not apart, they influence closely each other. The machines also affects our ways of living. I'd like to give one example of this interwound relationship. Most countries are adopting their standard time based on the geographical location, but sometimes military or economic reasons like, stock exchange and trade come first. South and North Korea have relatively complex history regarding setting standard time, and I also considered this for the project *The Clock*.

The meridian of Republic of Korea is 127.5 degrees East and based on this, it is 8 and a half hours ahead of UTC (Coordinated Universal Time). But currently Korea Standard Time which is abbreviated KST is 9 hours ahead that follows Japan Standard Time (UTC+09:00). Actually, in 1908, Korean Empire adopted a standard time that was 8 and a half hours ahead of UTC. But during the Japanese occupation of Korea, the time was changed to UTC+09:00 to align with Japan Standard Time.[7] During the Japanese colonial period, Japanese government had to control the Korean Empire effectively, so they changed the official language of Korea to Japanese, forcing people to change their name to Japanese style. Additionally, time was one of the factors that the occupying force used as a matter of control during that period. But after the liberation Japan Standard Time remained, since US army was stationed both in Korea and Japan. There was a short time when Republic of Korea reverted to UTC+08:30 based on 127.5 degrees East, but eventually since 1961 it has changed back to UTC+09:00.[8] It is for military operation that concerns about a potential war between South Korea and North Korea. In case of war, US army that is stationed in Japan should participate the war, but if the standard time is different, carrying out operation could be problematic. On the other hand, North Korean government decided to use Pyongyang Time (UTC+08:30) on 15 August 2015 as a break from "imperialism." When there was a time difference, government officials concerned about further inconvenience and cooperation that could even lead to differences of lifestyle. But on 29 April 2018, North Korea returned to UTC+09:00[9] to realign its clock with South Korea. It was regarded as one step forward in unifying and

[7] Wikipedia, "Time in South Korea," https://en.wikipedia.org/wiki/Time_in_South_Korea (accessed May 8, 2019).
[8] Taehyung Lee, "우리나라는 왜 일본과 똑같은 표준시 쓸까," https://news.joins.com/article/15943757 (accessed May 8, 2019).
[9] Wikipedia, "Time in North Korea" https://en.wikipedia.org/wiki/Time_in_North_Korea (accessed May 8, 2019).

eliminating differences of both countries. It is only a 30-minute difference, but this can be a political gesture, remnants of imperialism by each situation.

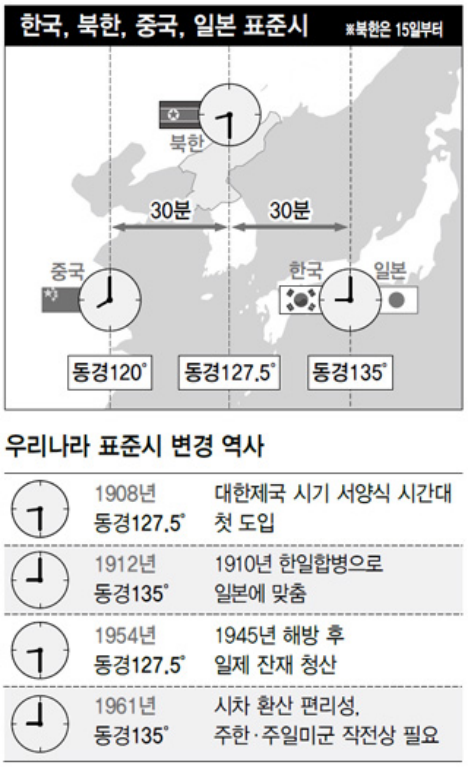


Fig. 4. Jihoon Kim, "북한 표준시, 남쪽보다 30분 늦춘다," *Hankyoreh*, August 7, 2015. http://www.hani.co.kr/arti/politics/defense/703619.html#csidx37fdd606b016435bbca4a72fb597be8

When there was an attempt to define what humanism is, people tended to list antonyms like robot or computer and divide human and machine into separate things. But machine play more roles than just a tool. And humans and machines are forming a symbiotic relationship rather than existing in hierarchical structure. They operate organically together, but not in a dichotomous way. This non-hierarchical way of interaction can also be found in the relation of language, perception and personality. For example, I become a bit different person depending on the language I use. When I speak English, I have different ways of thinking on the same issue than when I speak Korean. Because it's not that my thoughts are independent from the language I am using, to be specific, they are not in a hierarchical relationship that I pick languages as a tool of my thoughts and concepts. Instead, sometimes my thoughts are formed by the languages I have. This can be adjusted to the relationship of human and machine. They are in an equal position and play a certain role together.

Therefore, the modern concept of "subjectivity" that the human mind shapes and structures experience has been criticised. "Subjectivity is not ideological superstructure"[10] says Maurizio Lazzarato, one of the sociologists who argues about developing new "subjectivity" according to the society, based on the assumption that mankind is not always the main group that manages society.. In his book *Signs and Machines*, he points out the errors of human centric perspective of understanding the structure of the world. He focuses on Félix Guattari's (1930 - 1992) concept, "machine," "a-signifying" that was developed in the 1970s. "Guattari distinguishes among different types of semiotics situated beyond the measures and hierarchizations of human language: "natural" a-semiotic encodings (crystalline systems and DNA, for example), *signifying semiologies* including symbolic (or pre-signifying, gestural, ritual, productive, corporeal, musical, etc.) semiologies and semiologies of signification, and, finally, *asignifying* (or post-signifying) *semiotics*."[11]

Outside of human centric perspective, Lazzarato particularly focuses on labour systems, he states that "machinic enslavement" that human and inhuman "objects," machines, protocols, diagrams, and software are assigned to the same layer, and controlled and function together. He argues that there is no cognitive worker in the labour market, but worker's bodies are moving together by being a part of computer as a system. In manufacturing factory, their bodies are deconstructed into certain components of machines and operates. Driving a car can be another example of this. People do not drive it as an "individuated subject." Rather, they "activate subjectivity and a multiplicity of partial consciousness connected to the car's technological mechanisms. […] We are guided by the car's machinic assemblage. Our actions and subjective components (memory, attention, perception, etc.) are 'automatized,' a part of the machinic, hydraulic, electronic, etc., apparatuses, constituting, like mechanical (non-human) components, parts of the assemblage."[12] What Lazzarato criticises is that only remaining in modern "logocentric" world that in the way of understanding language was considered as a valid method, whereas we already entered into a "machine-centric" world where human and non-human are forming new types of relationship, getting closely connected each other. But he does not affirm the "machine-centric," but claims the needs of developing new type of subjectivity that applies to the current world.

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[10] Maurizio Lazzarato, *Signs and Machines: Capitalism and the Production of subjectivity,* trans. Joshua David Jordan, (MIT Press, 2014a), 7.
[11] Ibid, 67.
[12] Ibid, 89.

## 1-2 Machine Eyes

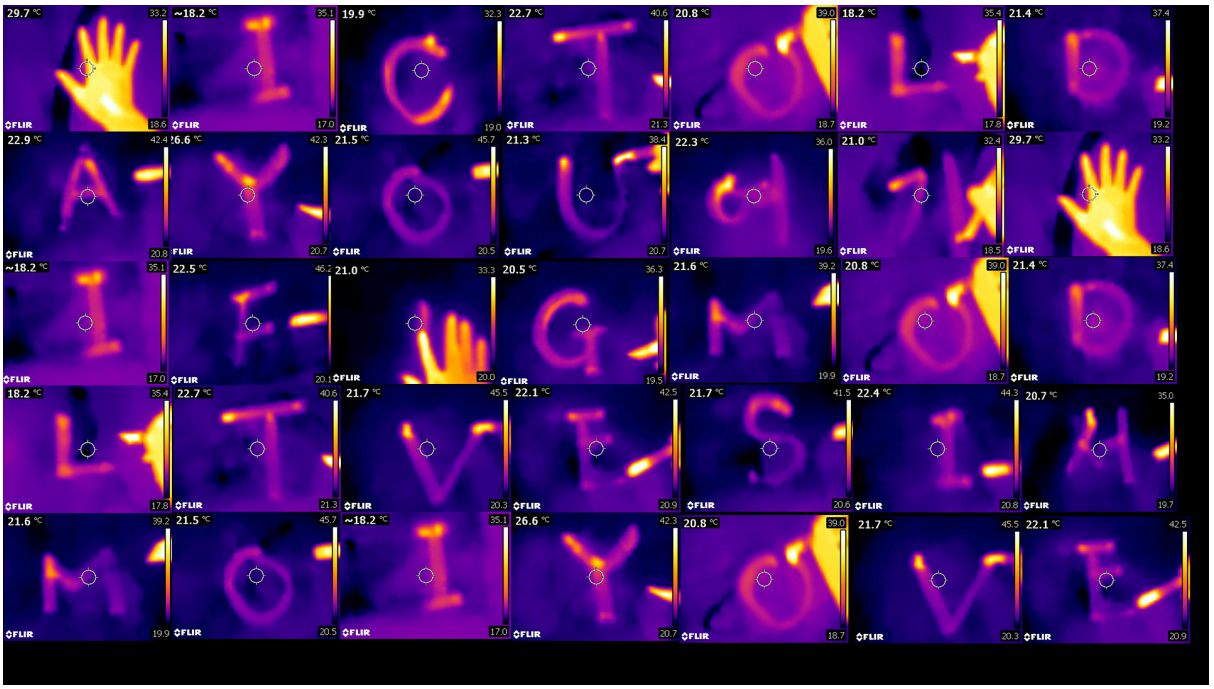

Fig. 5. Jeongmin H, *Warm Letters*, 2018, video with sound. Sound by Lorenz Schwarz.

*Warm Letters* is the video project filmed by thermographic camera. Letters are written by warm water so human eyes can not recognise what is written. But it is possible to visualise it through the lens of thermographic camera. We can figure out the heat conduction after the machine interprets it and adds variations of colours on the screen. There were several reactions of it the work expresses people's secretive message and privacy because it captures unseeing things through our eyes. But what I intended was that human don't the world only by the tissue of the eyes but also by using tools and machines, like glasses, camera lens, screen etc. To express that camera is taking the role of my eyes, I emphasise the character of the machine in this work. In other words, the work includes nonmaterial material "heat" and exposes the limitation of human eyes and it highlights the machine that is used for overcoming the limitations of human body. But above this case, we perceive the world through our senses using tools and machines. For example, I wear glasses every time of my

daily life except sleeping, otherwise I can not see very well. That is, I can say that my glasses fulfil the role of my body.

Canadian philosopher Marshall McLuhan postulates the concept "extension of human body" regarding the relationship between human and machine. For McLuhan, media is not confined to conventional printing media like, newspaper or broadcasting media that store and deliver information or data. McLuhan rather uses the words media and technology interchangeably. For McLuhan medium is "any extension of ourselves," or more broadly, "any new technology."[13] Media extends the function of the human body. Clothes are the extension of skin, glasses are the extension of eyes, computers are the extension of brain. The light bulb is the famous example that McLuhan addresses. A light bulb itself does not deliver any messages in the same way as an article or a television does, but it is a medium that has a an effect on the social practices. This means that a light bulb enables people to facilitate a range of behaviour. If we are in a dark room without a bulb, there is just a darkness, but when the light is on, it creates a space. McLuhan states that "a light bulb creates an environment by its mere presence."[14] Media has a tendency to shape and scale human experience into new forms. Roger Luckhurst (* 1967) describes it in his book *Science Fiction*, that "'The telephone changes the structure of the brain,' Gerald Stanley Lee (1862 - 1944) claimed, because it forced men 'to live in wider distances, and think in larger figures.'"[15] It leads us to think about the frequently quoted phrase that "The medium is the message." This idea indicates that the characteristic of media is prior to its content. One of the examples that McLuhan gives is the TV debate between John F. Kennedy against Richard Nixon on Sep. 26, 1960 which was the first televised presidential debate in U.S. history. McLuhan claims that listeners on the radio generally thought Nixon did better debate, in contrary, people who "watched" the debate on TV felt that Kennedy was better.[16]

Back to the media that it extends the body, this can be adjusted to current sports game. Most of the sports games adopt video cameras to support the referee and it is usually called as a "video challenge." Actually, it has been a long history of using high speed cameras for the recording sports such as, race and swimming. But in case of ball game, the authority of the

[13] Marshall McLuhan, *Understanding Media: The Extensions of Man,* (MIT Press edition,1994 (1964)), 7.
[14] Ibid, 8.
[15] Roger Luckhurst, *Science Fiction,* (Polity, 2005a), 26.
[16] Alan Bisbort, *Media Scandals*, (Greenwood Press, 2008), 38-39.

referee has been relatively strong, since there are more complex rules in these games. Korean Baseball League has applied this since 2014, after they experienced serious wrong refereeing decisions.[17] The minor rules have been changed but requesting maximum 2 times in one game and possibility of additional compromise have remained the same. In spite of the limited usage, it takes the role of the referee and this action is protected by the rule of the game. Video recording is definitely helpful to overcome the limitations of the referee's sight and there has been a lot of decisions that were reversed by it.

Fig. 6. Richard Mosse, *Incoming*, 2017, still frame from Incoming,
three screen video installation, 52:10, with 7.1 surround sound.
http://www.richardmosse.com/projects/incoming

This complex relationship is well reflected through many visual art works. One of the examples that I bring also uses camera eye. Richard Mosse's (* 1980) video project *Incoming (2017)* filmed travel routes of refugees with a military-grade camera. The artist explains, "I used a military-grade camera designed for battlefield situational awareness and long-range border surveillance in an attempt to confront the viewer with the ways in which our governments represent – and therefore regard – the refugee. We wanted to use the technology

[17] Sungno Lee, "`오심 논란` KBO, 심판 합의 판정 제도 시행,"
https://www.mk.co.kr/news/sports/view/2014/07/1007212/ (accessed May 8, 2019).

against its intended purpose to create an immersive, humanist art form, allowing the viewer to meditate on the profoundly difficult and frequently tragic journeys of refugees."[18] To certain group of people who need to control and monitor, refugees mostly exists within the camera monitor instead of meeting them in person. By using this filming method, the work exposes the challenging situation of refugees effectively. "Our human perspective and experience is interdependent on technological devices and aesthetics, and technology is imbued with human desires and politics."[19] In many times, a group of people could be situated in the mechanical views followed by certain intentions. MD Miso Kim, a radiologist says, "My work is analysing images from MRI or CT scans. I barely meet patients in person." She plays an important part of diagnosis of patients by gazing them but only through scanning machines and based on her medical knowledge. In this sense, humans are not always or already a "subject," according to the given status that one could be a subject or not. Within an institution, like a hospital, the doctors and their diagnostic methods gain authority while the patients do not have much sovereignty.

Let's see one scene from the film *Ghost in the Shell (1995)*. This scene describes a moment where a cyborg referred as "Puppet Master" confronts people, claiming itself as a lifeform. The view of the cyborg and the view of the humans are intentionally juxtaposed in this scene. And it is revealed that both of the human's and the machine's ways of seeing are not different from each other. First picture shows how the "Puppet Master" sees or monitors human through its cyborg's eyes. The visual sensors can very accurately capture the environment in front of it. Second picture shows how people observe the "Puppet Master" through external visual devices. The image that is reflected in their retina is already layered by a machine. People can not even access to the "Puppet Master" who is born from the Net[20] and inhabiting a mechanical cyborg, because they need a mechanical device, a loudspeaker, to 'hear/transfer' the machine's digital signal. Just like a text that we type into a computer can not be seen without a monitor. Our sensations depend on mechanical devices, internal or external. Humans and machines are not opposite or separated. Machines do not exist only as a replacement of human labour. Rather, they are firmly intertwined with and not even divided.

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[18] Richard Mosse, "Incoming," http://www.richardmosse.com/projects/incoming (accessed May 8, 2019).

[19] Bolette, B. Blaagaard, "The Aesthetics of Posthuman Experience: The Presence of Journalistic, Citizen-generated and Drone Imagery," (*Westminster Papers in Communication and Culture*, 10(1) 2015a), 51–65.

[20] It is a specific term used in Ghost in the Shell, referring internet.

# Chapter 2. New Relationship in Museum

> Society is not made up just of men, for everywhere microbes intervene and act. We are in the presence not just of an Eskimo and an anthropologist, a father and his child, a midwife and her client, a prostitute and her client, a pilgrim and his God, not forgetting Mohammed his prophet. In all these relations, these one-on-one confrontations, these duels, these contracts, other agents are present, acting, exchanging their contracts, imposing their aims, and redefining the social bond in a different way.
>
> -Bruno Latour, The Pasteurization of France[21]

In Western painting from the 17th and 18th century, the invention of the camera and the camera obscura was used as a tool that expanded the range of realistic representation and this led to new ways of formative experiment. But in the context of media art, technology including camera is not only treated as a tool for self expression or aesthetics. But it becomes a subject of the work. The events (évènement)[22] that occurred from the endless connection between human and media are expressed through media art projects. Richard Mosse uses military-grade camera to film his work *Incoming* (2017). When one sees the grey scenes, audiences are positioned just like people who control refugees. By using this specific media, he could emphasise how refugees are controlled and monitored. At the same time, artists attempt to predict current and future issues that happens from combination of art and technologies in various artistic ways.

In chapter 1, I described new relationships between humans and machines based on several theories and my projects and other artistic works. In chapter 2, the connection

[21] Bruno Latour, *The Pasteurization of France, trans. Alan Sheridan*, John Law, (Harvard University Press, 1993), 35.
[22] Raymond Bellour and François Ewald, "Signes et événements," (Magazine Littéraire, #257, 1988), 16-25.

between humans, technology and art was analysed. In a museum, for example, artwork/audience, audience/audience, museum/public space and other elements are interacting and being related in various ways, creating new contexts. If "human and machines" are forming new types of relationships, this will change the same in between "audiences and artworks." Donna. J. Haraway (* 1944) made a chart of transitions from comfortable old hierarchical dominations to the new networks that she has called the informatics of domination. For example, I already used the term "audience" as "user" that does not appear in traditional art scene. Therefore, the chart also applies to the changed status of audiences within the system of network-based artworks. In the chart, the term "representation" becomes "simulation." And "organism" becomes "biotic component." "Heat" is changes as "noise" and "small group" is transformed as "subsystem."[23] In other words, the sentence, "The heat from the small group of audiences affects the work as a parameter, and it represents changed organism." can be restructured as "The noise from subsystem of parameter affects to system, and it simulates the changed biotic component."

Nicolas Bourriaud is one of the people who states about the relationship of art and audience by using the term "relational aesthetics." In his book that has the same title he states that "Artistic activity is a game, whose forms, patterns and functions develop and evolve according to periods and social contexts; it is not an immutable essence. It is the critic's task to study this activity in the present."[24] and he defines relational aesthetics as "an art taking as its theoretical horizon the realm of human interactions and its social context."[25] This theory is not about stating the origin and utmost purpose of art, but it is about a certain form. The conventional concept of human, tool and machine are changing now and commercialisation of high technology will change the form of human life completely. As a result, these changes will inflect the form of art as well. How can art be formed with objects, nature and various non-human beings together?

Among different art fields, media art uses technology of the fourth industrial revolution as a material and a subject of work. And the audiences who is confronted with these works plays an active or passive role. There was a word "extension of human" in chapter 1 followed by the explanation of McLuhan's concept. This is still a valid, but when

[23] Donna J. Haraway. "A Cyborg Manifesto," (Socialist Review, 1985a), 28-30.
[24] Nicolas Bourriaud, *Relational Aesthetics,* (Les Presses du réel, 2002), 11.
[25] Ibid., 14.

there are high technologies involved like, telecommunication, AI, Virtual or Augmented Reality, robots, net, biotechnology etc., it goes beyond the extension of the body. “These changes in aesthetics and concepts of time/space and presence simultaneously change our perceptions of the world and our relations to the world, thus encompassing an ethical-political charge.”[26] And it forms a new relationship of audiences and media artworks.

Following works in chapter 2 are dealing with positioning the audiences within art works. Referring to Bruno Latour’s Actor-Network Theory (ANT), I will treat this issue under the three themes, “bilateral gaze", “media-induced tempor(e)alities & techno-traumatic irritations of ‘the contemporary’”[27], “Please Touch.” For the second theme, I refer to *The Delayed Present : Media-Induced Tempor(e)alities & Techno-traumatic Irritations of “the contemporary”* written by Wolfgang Ernst (* 1959) in 2017.

## 2-1 Bilateral Gaze

> Put differently, this essay attempts to think an object for-itself that isn’t an object for the gaze of a subject, representation, or a cultural discourse. […] The claim that all objects equally exist is the claim that no object can be treated as constructed by another object. […] In short, no object such as the subject or culture is the ground of all others.
>
> -Levi R. Bryant, *The Democracy of Objects*

Now the definition of “the others” has been changed that it is not divided dichotomously. In numbers of theory, human and non-human are not separated in dialectical nor in hierarchical ways. The multiplicity like human, animal, plants, objects is “transformed by the line of

[26] (Blaagaard 2015b)
[27] Wolfgang Ernst, *The Delayed Present : Media-Induced Tempor(e)alities & Techno-traumatic Irritations oF “the contemporary,”* (Sternberg Press, 2017a), 18.

flight; the possibility and necessity of flattening all of the multiplicities on a single plane of consistency or exteriority, regardless of their number of dimensions."[28] Bruno Latour is closely associated with the idea known as "Actor-Network Theory (ANT)," Levi Bryant postulates "Democracy of Objects." ANT is based on science and technology studies and has been used in multiple variations. It can be described as a methodology that scrutinising the connections between both human and non-human entities. ANT points out that "it does not limit itself to human individual actors but extend the word actor -or actant- to non-human, non individual entities."[29] And those factors exist in constantly changing networks and it argues that everything exists within those relationships. "Rather than saying Newton "founded" the theory of gravitation seemingly as though he were alone in a vacuum, Actor-Network Theory emphasises and considers all surrounding factors — no one acts alone."[30] Meanwhile, Levi R. Bryant has a similar approach with these types of relationship. In his book Democracy of Objects, he stresses that "The democracy of objects is not a *political* thesis to the effect that all objects ought to be treated equally or that all objects ought to participate in human affairs. The democracy of objects is the *ontological* thesis that all objects, as Ian Bogost (* 1982) has so nicely put it, equally exist while they do not exist equally. […] As such, *The Democracy of Objects* attempts to think the being of objects unshackled from the gaze of humans in their being for-themselves."[31]

If we adopt these theories for examining artworks and audiences, it overcomes the gaze in a museum. That is to say, traditionally, audiences used to watch artworks with their frontal gaze. Or perceiving the work by hearing with ears, smelling with nose or by touching. In conventional museum, audiences were viewer/gazer, works were the object that were being watched. But in media art, this relationship is mostly obsolete. Here, terms like interactivity were used to describe a new constellation between the audience and the artwork. Viewer's frontal gaze is not one-way, but they are in bilateral gazes.

Bernd Lintermann's (* 1967) interactive installation *YOU:R:CODE (2017)* shows this reversed relationship. This is exhibited in ZKM's (Zentrum für Kunst und Medien) show

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[28] Brian Massumi, "Notes on the Translation and Acknowledgments,"
*A Thousand Plateaus: Capitalism and Schizophrenia (Mille plateaux)* by Deleuze and Guattari, (University of Minnesota Press, 1987a (1980)), 15-19.
[29] Bruno Latour, "*On actor-network theory. A few clarifications plus more than a few complications,"* (Philosophical Literary Journal Logos. 27, 2017), 173-197.
[30] David L, "Actor-Network Theory (ANT),"
https://www.learning-theories.com/actor-network-theory-ant.html (accessed May 8, 2019).
[31] Levi R. Bryant, *Democracy of Objects,* (Open Humanities Press, 2011), 19.

*Open Codes*. It consists of 7 screens that are 2 meters high. Among 7 channels, the first screen is a mirror. “Whereas on entering, a visitor still sees their familiar reflection in a mirror – the most real virtual depiction that we can imagine – the mirror image gradually transforms into a digital data-body until finally, the visitor is reduced to an industrially readable code.”[32] And the other screens show the audience’s age, gender and height that are detected by a hidden camera. It is entertaining to compare the real biological information, thus many audiences spend time in front of this screen. Also the title *YOU:R:CODE* is originated from the fact, that the presence of the audience is used as a parameter to generate certain visual effects. “In the end he/she breaks free from the virtual depiction, and is materialized in a flip-dot display. The second way of reading the piece’s title, »you are code«, emphasises that we ourselves consist of code, which amongst other things is manifested in the genetic code.”[33]

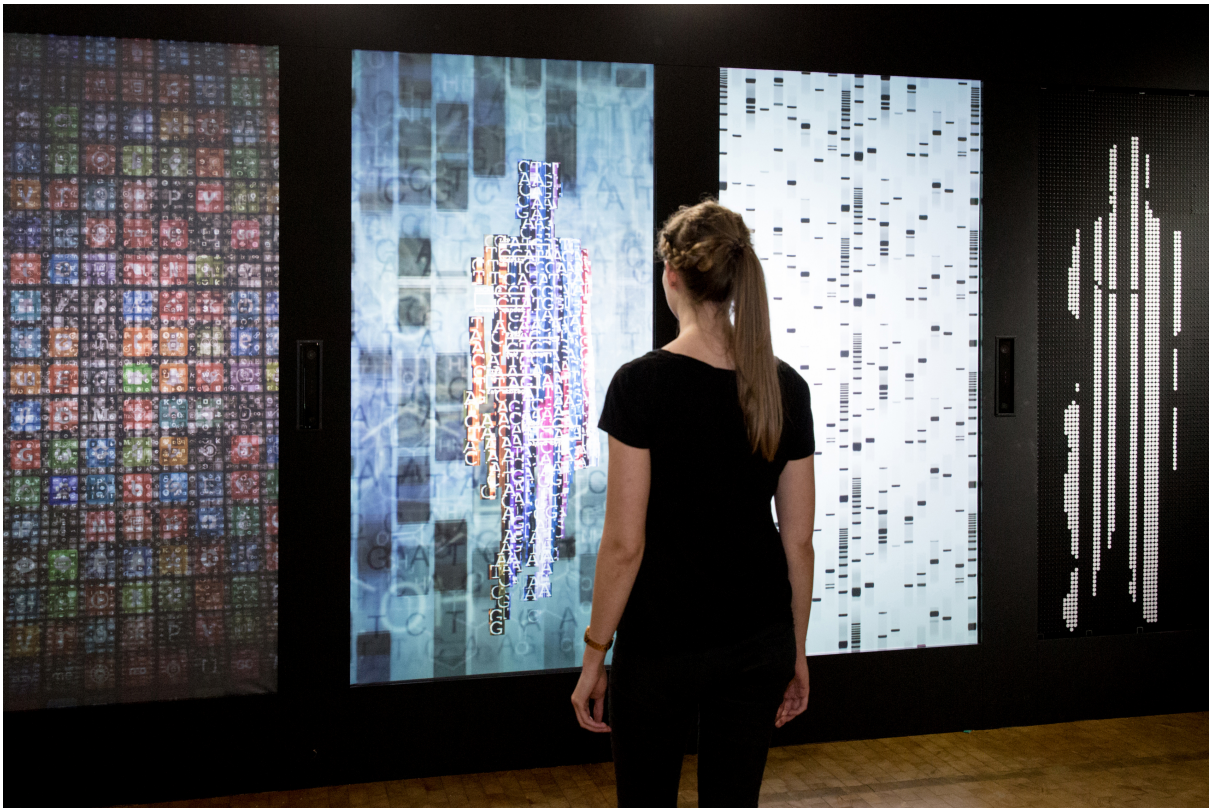

Fig. 7. Bernd Lintermann, *YOU:R:CODE*, 2017, multi-channel projection, Center for Art and Media Karlsruhe, photo by Felix Grünschloss

[32] Bernd Lintermann, “YOU:R:CODE,” https://zkm.de/en/yourcode (accessed May 8, 2019).
[33] Ibid.

Besides, the work reveals that audiences who used to "watch" the work are now "being watched/monitored." The appearance of the audience is converted to data, and it affects the work. This brings out the changed relationship between human and artwork. That is why, it is interesting that the artist choose mirror as a first screen among 7. Like I already mentioned one scene from the Japanese film *Ghost in the Shell* in chapter 1, this work *YOU:R:CODE* also reveals two kind of views: the human eye and the off-screen computer aided camera sensor. We can find similarities and differences from the result how machines are detecting us. This work is interactive in this sense, but I would say that it has more layers than this, because of the screen that shows the viewer's data. After the entertaining moment, people realise that the camera could secretly collect other personal data such as, heat and weight. Actually, this is not a rare experience in the internet. Nevertheless, most of the users already experienced their browsing history was used for pop-up advertisement, but watching their personal data in public museum gives another tension. It becomes the metaphor of powerful agencies monitoring every movement of any individual they wish to track.

My collaborative project *Room of Requirements (2017)* deals with similar issues and the data that we provide voluntarily in the internet by agreeing with "terms of use." This work uses 2 rooms, one is surrounded by 3 walls with projected visual effects. At a glance, it looks like typical interactive walls that are generated by the movement of the viewer, but it is operated by the viewer's "surrender pose." This pose is actually for initiating the hidden kinetic camera, that needs this motion to detect the human form or shape to initiate the program. We used this pose as their agreement of "terms of use," and secretly collected audience's biological data, age and gender by the hidden kinetic camera. In the internet, we become a part of data used as parameter or for the part of economy within.

## 2-2 Media-Induced Tempor(e)alities & Techno-traumatic Irritations of “the Contemporary”[34]

Timelines and chronologies are mixed up in museums. This is not a rare curating method that juxtaposing Greek polychromy with Jeff Koons’ installation or Egyptian funerary monument with William Kentridge’s film. Two exhibitions were held in Liebieghaus in Frankfurt, under the title *The Painter & The Sculptor* in 2012 and *O Sentimental Machine* in 2018. Installations that have thousands of years meet each other in the same time line, and this event brings out new contexts and relationships. When we see time as something linear, objects including audiences have enormous in-depth differences, whereas human beings can only stay in present, therefore, it is impossible to experience “the past” as it is. Accordingly, we perceive the mixed time flat. We can access to almost every image via the internet, thus we can reach to almost every timeline and space. The current technology enables a new presence of things.

Wolfgang Ernst wrote, “Whereas the aura, as defined by Walter Benjamin, of a material work of art depends on its being uniquely “here and now,” operative technology is tempaural; specifically its sonic articulations culminate in the archetype of a displaced present.”[35] Contemporary digital culture changed the concept of the “present”. Technical expressions, such as “delay line” or “real time” are derived from computer language but now those are mentioned in humanities and cultural discourse. When I learned programming language, the instructor explained about the “string” and its function which is for sequence of characters, either as a literal constant or as some kind of variable. To put it simply, “string” is similar to a sentence, or the line in the play script. He added, sometimes programmers are using the word “string” instead of “sentence” and he warned us not to, since it makes the person very nerdy. In this sense, graphic designers see the images as “layered” things, derived from Photoshop tool, and video editors have different timeline than normal people. Their

[34] (Ernst 2017b, 18)
[35] Ibid., 19.

“timeline” is a working desk in editing program Premiere, where you put fragments of moments. These are put on the same time line and then mixed, edited by certain intention. For the video editors, there are only differential temporalities, rather than the concept of present. For sound artists, there is no “present moment.” Because “there is no punctual acoustic signal but always successive oscillations and therefore already a delayed present.”[36]

> The symbolic ordering of time into past, present and future is ever more compressed into one dense time window of the extended present. In that sense, the current condition is literally con-temporary, an interlacing of temporalizing gestures: on the one hand, there is an instant archiving the present in digital data processing, while on the other hand the past is immediately coupled with the actual present in online communication: re-presencing the archive. […] The future is not simply what is to come, but can be preemptively anticipated, a “future-in-the-past (futurum exactum)"
>
> -Wolfgang Ernst, *The Delayed Present : Media-Induced Tempor(e)alities & Techno-traumatic Irritations oF “the contemporary”*

The “Puppet Master” mentioned in chapter 1 says that he is born in the “Net,” in an ocean of information. “I am a living, thinking entity who was created in the sea of information.”[37] It indicates internet a place where he can float around without body and navigate without any limitation. This place is infinite, free from time and space, so that it is possible to be anytime and anywhere. Not only the Puppet Master can do this, but also artwork uses web-technology to detect collect and process the audiences in the work. These captured audiences lost their bodies, whiles saved as data. In other words, not only human audiences understand and interpret artworks, but those works can also analyse audiences and absorb. Humans that are captured by artificial intelligence and stored in the cloud can be brought up in anytime from anywhere without their knowledge. Furthermore, the work can overcome limitations of time and space physically. This means that an event that is happening outside of a museum can be physically represented in front of the audience in real-time. Stock

[36] Ibid., 13.
[37] *Ghost in the Shell*. DVD. Directed by Mamoru Oshii (守 押井). Japan: Shochiku, 1995a.

exchange, GPS, even the movement of the ocean are transmitted inside of the museum or transferred from museum.

Fig. 8. David Bowen, ***Tele-present wind,*** 2018, accelerometer, Minnesota, Visualization and Digital Imaging Lab at the University of Minnesota. http://www.dwbowen.com/telepresent-wind/

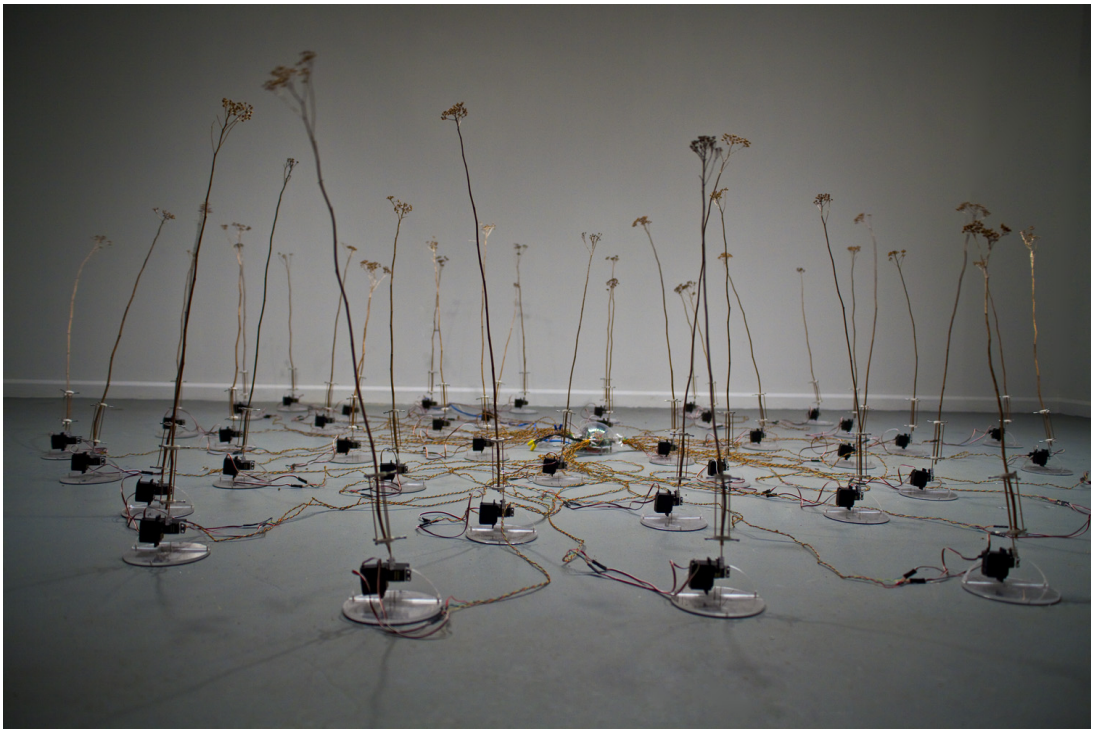

Fig. 9. David Bowen, ***Tele-present wind,*** 2018, 126 x/y tilting mechanical devices connected to thin dried plant stalks, Bilbao, Azkuna Zentroa. http://www.dwbowen.com/telepresent-wind/

David Bowen's (* 1975) *tele-present* series collects the movement of waves and wind outside of the museum. *Tele-present wind* is an installation described by the artist that "consists of a series of 126 x/y tilting mechanical devices connected to thin dried plant stalks installed in a gallery and a dried plant stalk connected to an accelerometer installed outdoors. When the wind blows, it causes the stalk outside to sway. The accelerometer detects this movement transmitting the motion to the grouping of devices in the gallery. Therefore the stalks in the gallery space move in real-time and in unison based on the movement of the wind outside."[38] From Minnesota to Bilbao, the movement of the wind is delivered thus, audiences can see it as a form of the same moving flower inside of the museum. The other series *tele-present water* works similar. This work represents the intensity and movement of the water in a remote location as a kinetic work. "This work physically replicates a remote experience and makes observation of the activity of an isolated object, otherwise lost at sea, possible through direct communication." The machine that collects the data is called "National Oceanic and Atmospheric Administration data buoy station 51003,"[39] and the last report of its moored location was detected around 25. April. 2011. In spite of the indistinct location, it is still sending data until now.

Peter Weibel's (* 1944) work *The World as a Field of Data* shows that we receive numerical data from GPS, time of departure or delay almost every time in our daily life. Especially, based on the fact that time and location used to be recognised through the observation of the Sun and stars in the sky, the work is hanging on the ceiling of the museum, just like the current source of the location that comes from the orbiting satellites in space. "The installation The World as a Field of Data confronts us with this field of data that accompanies us around the clock in a deliberately exaggerated way. Data fields are omnipresent. All the information that is generated as a result of our interaction on the Net and

[38] David Bowen, "tele-present wind," http://www.dwbowen.com/telepresent-wind/ (accessed May 8, 2019).
[39] David Bowen, "tele-present water" http://www.dwbowen.com/telepresentwater (accessed May 8, 2019).

in the real world are assembled on around 40 screens, which hang in the air as a data cloud at ZKM's Atrium 8."[40]

## 2-3 Please Touch: Consciousness to Sense

> Our interactions with technology in visual, tactile and audible ways allow us to perceive the world differently
>
> -Hayles, N. K, *How We Think: Digital Media and Contemporary Technogenesis*

The development of digital media plays a key role in our life, and the forms of human beings get various. Thus, humankind gradually transforms into a new species. It is already mentioned in this text that Western "cogito" centric human that causes discrimination between human and non-human does not apply anymore. What I want to stress in this chapter is that devices from the digital culture are more an more operated through tactile interaction, the "touch," a synaesthetic connection between human and machine is more active than ever. Besides, digital devices provide enormously high-resolution images, video and clean sound. And the current young generation who are "naturals" to use those "machines" have been experiencing an expansion of experience. It indicated that senses such as, sight, hearing, touch that used to hover around "rationality" are now actively used synaesthetic, rather than as logocentric subject. It is media artists who include these phenomena into their works. They

[40] Peter Weibel, Christian Lölkes, "Die Welt als Datenfeld," https://zkm.de/en/die-welt-als-datenfeld (accessed May 8, 2019).

lead audiences to touch works and be a part of a work that generates sensations, not just expresses synthetic sensation.

It is common to see the signage "Do Not Touch" in museums. As the works are older and fragile, this signage is necessary for preservation and the audience seem to respect this rule without problems. I personally see this as a denial of human nature that wanting to touch something beautiful and interesting, whereas contemporary artists are playing with fragile materials like sparkling powder, melting ice. Therefore, I also agree with that rule to see the work with a good condition. Even though Francis Bacon expressed synthetic sensations in his paintings through the texture of meat and iron, movement of bird and shouting of popes, it is hard to imagine to touch the matière of the paintings. We can only experience it through our sight.

But in case of adopting digital technology to artworks, visual art, sound art and music that are generated via programs that become part of the work itself. And it operates not as a fixed form but it works when the other elements become a trigger which is called "parameter." David Bowen uses the movement of nature as a parameter, the other artists use audiences' presence as their parameters. It is common to see the works bringing out the changes to the works by the direct "touch" of "viewers." The exhibition of ZKM, *Open Codes* is a big scale show that presents around 200 artistic and scientific works. In the editorial, the director wrote "Unlike with the conventional reception of analogue painting, sculptures, and installations, the horizon of meaning in *Open Codes* is only revealed in the process of observers physical interacting with the works."[41] Due to this characteristic that moves and changes by touching and interacting, those works often are considered as entertaining and educational things. One of the artists who accepts this characteristic is a Japanese media art group called, "teamLab." Their works are often designed for children's education as well by using new technologies.

The teamLab's work *Born From the Darkness a Loving, and Beautiful World* (2018) is a huge scaled projected installation where images and Chinese characters are floating on the walls. The work is described by the artist that "When a person stands close to a character, the world that character embodies will appear, and a new world will be created. The objects

[41] Peter Weibel, "Editorial of *Open Codes*: To understand the world we inhabit. To understand the world we live in. To understand the world that sustains us," 2017.

that are released from the characters go on to influence one another in the new world."[42] In other words, when people touch the characters that are falling from the top, they are changed into images of their meaning and its floating movement is disturbed by people's presence. Actually it reflects the characteristic of Chinese characters that they are formed by the images of meanings. Besides, touching the characters and seeing the images are similar with children's learning process. Whereas it is relatively easier to learn Japanese letters, Hiragana (ひらがな) and Katakana (かたかな, カタカナ), Japanese children need to learn Chinese characters with repetitive process by using images as well. teamLab also said that they are expecting an educational effect from their works for young audiences.

Actually this is similar with the Frankenstein's Creature learning language. Many Western modern philosophers claimed that consciousness and sensation, mind and body are divided. Descartes' (1596 - 1650) "Cogito ergo Sum (I think, therefore I am)" is the famous phrase that represents this understanding. It is considered as an argument that human can perceive the world relying on their mind mostly. But rationality is not something that depends on senses. Even the sensations like "Sun is bright" is rather perceived through minds. But what the Creature did after the birth was feeling just the overwhelming sensations, not thinking of the world. He described it as "A strange multiplicity of sensations seized me, and I saw, felt, heard, and smelt at the same time."[43] Then he flees to the shadow of the tree, since the sunlight was too bright and hot for him. The way how he perceive things are not only done by his mindful thinking, but also by sensations. They are interconnected and work together. This will be stated in detail in Chapter 3. Back to the work *Born From the Darkness a Loving, and Beautiful World,* children can learn the meanings of characters not only by memorising, but by touching, listening the sound of it, and by the movement around them.

Another work of teamLab *Universe of Water Particles on Au-delà des limites* also uses audience's presence as a major parameter that controls the movement of digital images. Enormous size of waterfall and flower petals are falling from the ceiling and they are flowing in the ground as well. The force that affects the movement is gravity and wind, like natural phenomena. But when people sit on the floor or touch the waterfall, their touches obstruct the flow of water like avoiding rock, so the flow of water changes. "The flow of water continues

[42] teamLab, "Born From the Darkness a Loving, and Beautiful World," https://www.teamlab.art/ko/w/whatloving-dark/ (accessed May 8, 2019).
[43] Mary Shelley, *Frankenstein; or, The Modern Prometheus,* (Wordsworth Editions, 1993(1818)), 79.

to transform due to the interaction of people. Previous visual states can never be replicated, and will never reoccur. The flow of the waterfall influences other artworks."[44] Even if it is not a physical water flow, but a digital simulation, the realistic and beautiful image brings the spectacle into the space. The founder of teamLab said that the beginning of teamLab was his desire to represent the cherry blossoms from his hometown in somewhere else. Currently, he is representing the creatures from Japanese mythologies and bring them back to life in his works.

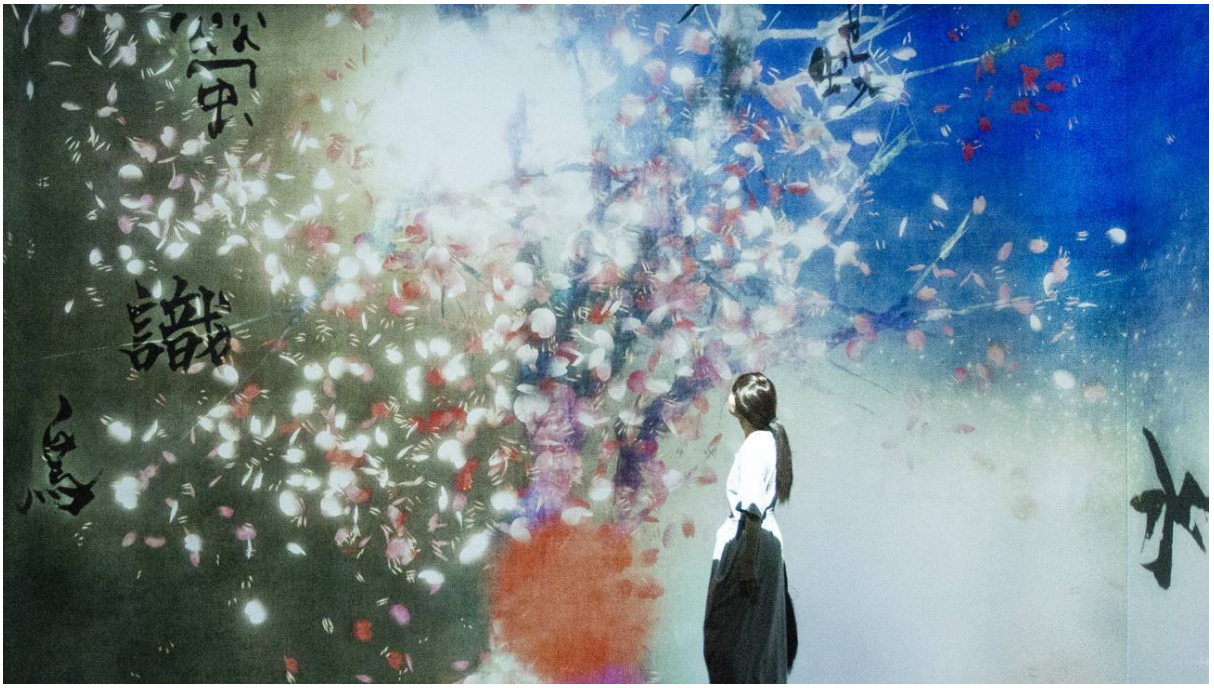

Fig. 10. Sisyu, teamLab, *Born From the Darkness a Loving, and Beautiful World,* 2018, Interactive Digital Installation, Endless, Calligraphy: Sisyu, Sound: Hideaki Takahashi. https://www.teamlab.art/ko/w/whatloving-dark/

[44] teamLab, "Universe of Water Particles on Au-delà des limites," https://www.teamlab.art/ko/w/large-waterparticles/ (accessed May 8, 2019).

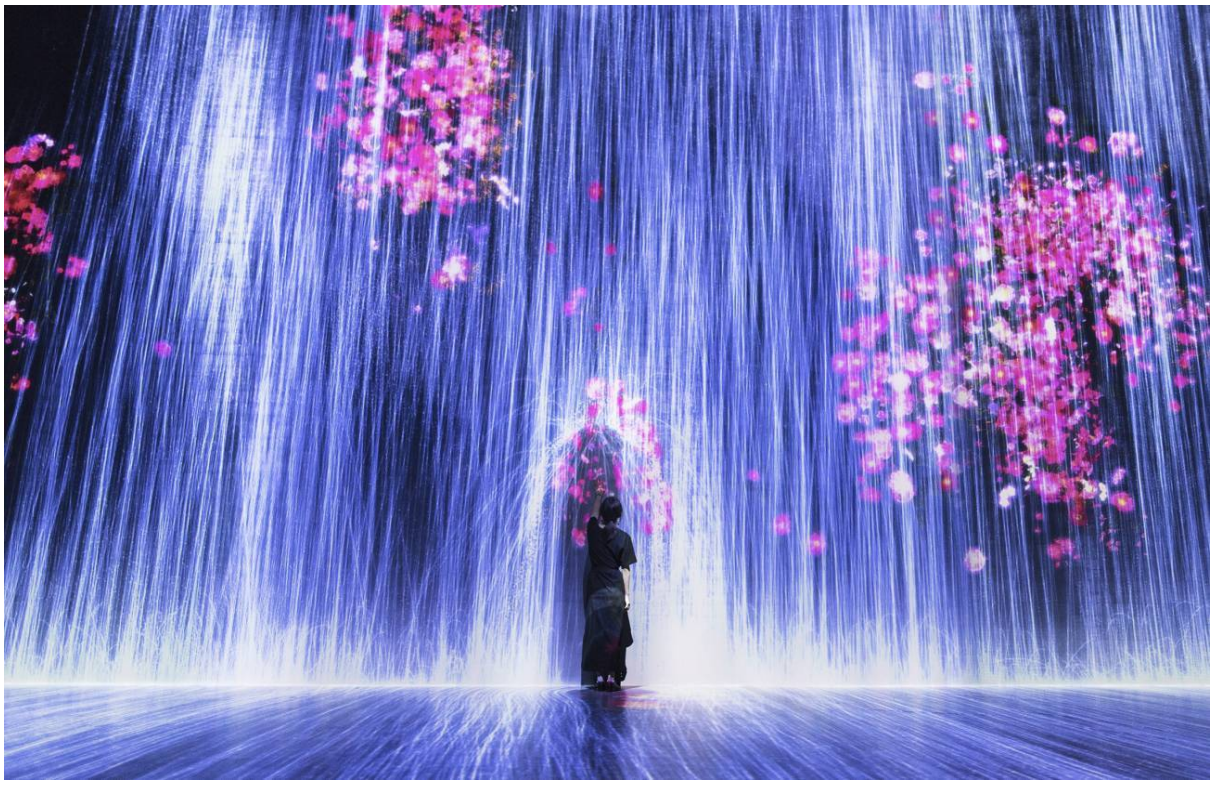

Fig. 11. teamLab, *Universe of Water Particles on Au-delà des limites*, 2018, Interactive Digital Installation, Sound: Hideaki Takahashi. https://www.teamlab.art/ko/w/large-waterparticles/

# Chapter 3. Posthuman Protagonists from Artworks

> If you took away my computer, my colleagues, my office, my books, my desk, my telephone I wouldn't be a sociologist writing papers, delivering lectures, and producing "knowledge". I'd be something quite other - and the same is true for all of us. So the analytical question is this. Is an agent an agent primarily because he or she inhabits a body that carries knowledges, skills, values, and all the rest? Or is an agent an agent because he or she inhabits a set of elements (including, of course, a body) that stretches out into the network of materials, somatic and otherwise, that surrounds each body?
>
> -John Law, *Notes on the Theory of the Actor Network : Ordering, Strategy and Heterogeneity*

As things can be defined by their opposites, not only since Renaissance time the counterexample of the non-human, the machine and the animalism are used to shape the concept of humanism. When people discussed humanism, they tended to do it through defining non-human beings. Ironically to find the humanity, it was necessary to depend on something that are not human. But Western humanism has been challenged because of this attitude. Because it causes the discrimination of human and non-human. On the other hand, the media artist collective Art Orienté Objet (Marion Laval-Jeantet, born 1964, and Benoît Mangin) attempts one of the aims of posthumanism by interacting with a horse. They try "Becoming-Human" and "Becoming-Animal" very directly through scientific research and artistic practice. Like this duo, numbers of artists, directors and authors cover the theme of the future of technology and human through their works. Their reaction looks like the future that we will confront soon enough. Posthuman beings in those works such as cyborgs,

transhumans, and AI points out the notion of what we call “humane,” and criticise that it does not correspond anymore with the political, technological and social environment and raising in-depth questions regarding the needs of redefining humanism. The works that are mentioned in this chapter are more or less from popular culture. Slavoj Žižek (* 1949) often explains his thoughts through pop references such as, film of Alfred Hitchcock and David Lynch. It is not difficult to find that current philosophers are also quoting works from pop culture often. And the figures from those works are experiencing discrepancy, oppression, unstable identity that happens from “Becoming-Human” and they expose it by raising their own voices therefore, I chose them to develop the theme.

Frankenstein’s Creature[45] is the first protagonist of chapter 3. From the story of the Creature - also called as a “Monster” - we can find a standard of “acceptable human being” in that era. The Creature attempts to “Becoming-human” with various trials, and we can see how Mary Shelley (1797 - 1851), the writer, reveals her understanding of cogito through the Creature’s narrative, and how different it is compared to modern Europe. This could lead us to predict how people would react to cyborgs and creatures with biomechatronic bodies with a mind of artificial intelligence and thus senses and sensations. Various figures in *Fullmetal Alchemist (2009 TV series version)* are also aiming to become human. Human beings and non-human creatures are aiming almost the same but the difference is that non-humans like, homunculi already think that they are human, whereas a human protagonist thinks that he is not a human after he lost his body. There are other differences between *Frankenstein* and *Fullmetal Alchemist* as well. While Mary Shelley writes about scientific way of creating a human, Arakawa who is a creator of *Fullmetal Alchemist* does not emphasise scientific principle, rather she focuses more on humane elements.

A Half human and half machine cyborg Motoko Kusanagi is a figure from the film *Ghost in the Shell*. Along with this heroine, media art project *Que Le Cheval Vive En Moi (May The Horse Live In Me, 2011)* throws the question of “definition of life,” “discrimination of species.” Lastly, I cover the album released by Korean pop singer G-Dragon (* 1988), and how he transforms himself as a cyborg through his album. In addition, the artist group BCL’s project *Common Flowers / Flower Commons* shows the artistic attempt of manipulating

[45] It is mostly known as Frankenstein's Monster, but I will use “Creature” to refer to it, since this text assumes that it crosses the line of human, creature and monster.

genetics and reveals the blind spot of laws regarding it. Consequently, we can see how artists deal with post- and transhumanism with their artistic practices in various ways.

## 3-1 Becoming-Human: Creatures in *Frankenstein* and *Fullmetal Alchemist*

Mary Shelley's *Frankenstein* (1818) tells the story of Victor Frankenstein, a scientist who creates a human-like "creature" in his laboratory. This creature has no name, and is referred as "Monster" or "Creature" or sometimes Victor Frankenstein calls him a "Demon." "After days and nights of incredible labour and fatigue, I succeeded in discovering the cause of generation and life; nay, more, I became myself capable of bestowing animation upon lifeless matter."[46] For two years, he immerses himself in his research on creating a human. To create it, the scientist collects parts of the bodies from corpses, but collects the most beautiful features of each part. But ironically, despite of his attempt, the result has a terrifying appearance. The Creature has wrinkled skin which barely hid the blood vessels, black lips, black hair, and yellow eyes. Dr. Frankenstein was so horrified by his own creation that he fled from it. "[…] but now that I had finished, the beauty of the dream vanished, and breathless horror and disgust filled my heart."[47] By the Frankenstein's reaction, we can easily assume that the Creature is not a success. What exactly makes it un-human?

First of all, the Creature has frightening appearance that makes people refuse to accept. Even his own creator could not stay with him right after his creation. His body looks really uncanny that beyonds the characteristic of human's. It is not rare, that most people are afraid of someone who has a foreign appearance and they separate this different looking person from themselves, instantly. And this "exclusion" leads to "monstrosity." Despite of his many attempts for acceptance, he is abandoned by his creator and he is excluded from

[46] (Shelley 1993b, 41)
[47] Ibid., 43.

everyone, not able to make friendship with anyone. The stereotype image of Creature that we commonly think of is portrayed by Boris Karloff in the 1931 film *Frankenstein*. The uncanny appearance is magnified by the bolts and sewing trace from the skin, since it reveals that this creature is not "born" but "made."

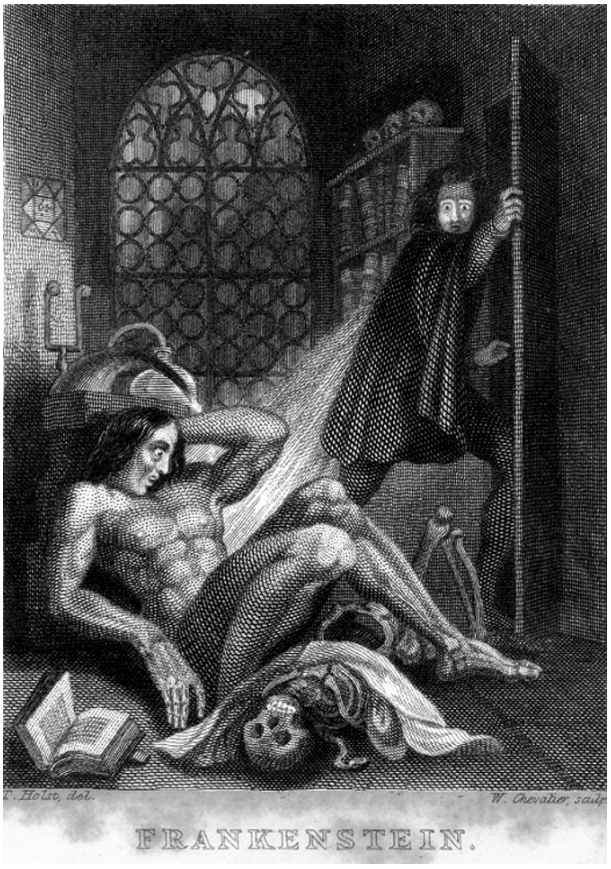


Fig. 12. Illustration by Theodor von Holst, Mary Shelley, with Percy Shelley, *The Original Frankenstein*, 2008, Oxford: Bodleian Library.

Fig. 13. Boris Karloff, *Bride of Frankenstein*, Directed by James Whale, US: Universal Pictures, 1935.

The physical ability of the Creature that is described in the novel is superior to normal grown up men, he is very fast and has enormous strength. But these abilities can not overcome his horrifying look that ranks him as a non-human. This frustrating situation eventually makes him a brutal being that kills people. Apart from this behaviour, a similar figure can be found in Victor Hugo's novel *Notre-Dame de Paris.* The main character Quasimodo is also neglected by the society because of his looks. He is born with a hunchback and feared by the people as a monster. He is also abandoned by his mother, who left him in

front of the cathedral. The background of the novel is based in Renaissance time when marking the transition from the Middle Ages to modern era. Although the intellectual basis of the Renaissance was derived from Humanism, he is not respected as proper human being, rather, he is considered as a demonic being that is cursed by God regardless of his kind heart. He stays his whole life alone in the bell tower of the cathedral, and is even rejected by the woman he saves several times.

Secondly, Creature's vague morality leads it to behave unpredictably that makes the readers terrified. "It was on a dreary night of November, that I beheld the accomplishment of my toils. With an anxiety that almost amounted to agony, I collected the instruments of life around me, that I might infuse a spark of being into the lifeless thing that lay at my feet. It was already one in the morning; the rain pattered dismally against the panes, and my candle was nearly burnt out, when, by the glimmer of the half-extinguished light, I saw the dull yellow eye of the creature open; it breathed hard, and a convulsive motion agitated its limbs." [48] The Creature is brought to life in Victor Frankenstein's laboratory. According to the scientific research and experiment, the Creature becomes sort of a cyborg with the help of at that time up to date technology scientific knowledge. In the phrase, it is described "a spark of being into the lifeless thing" which indicates that the scientist uses electricity into the parts of corpses.[49] Since he is born in a laboratory where a man clarifies objective orders, the Creature has to correspond to modern human. He has to inherit socially acceptable reasons and ethical subjectivity from the scientist. But instead, he commits murders without moral standard and sets fire to the house. Actually the conflict between creator and creature that drives the whole story is the problem of "who is more humane." Victor Frankenstein is a representative of a European citizen who is a highly educated male, thus he is the "way of being human." In contrast, the Creature shows an uncanny body, unacceptable behaviour, vague cogito that does not satisfy the standard of appropriate citizen class. Donna Haraway states that writing, power, and technology are old partners in Western stories of the origin of civilisation.[50] Even outside of the novel, European white male was the standard of common human, therefore other people like, foreigners, coloured people, gypsies, and even females, had been

[48] (Shelley 1993c, 45)
[49] Sunjoo Lee, "Frankenstein: From a Post-human Perspective," The original text is written in Korean, and I translated it in English. It is published in the book *Fragmented Body and Text: Stage of Posthuman 2, (*Acanet, 2017a), 221.
[50] (Haraway 1985b, 13)

discriminated as "the others." Félix Guattari asserts, "Mass production and the mass exportation of the white, conscious, adult, male subject always have as their correlate the reining in of intensive multiplicities, which elude types of centralisation, every signifying arborescence."[51]

"The eighteenth century resonates with the Enlightenment celebration of reason and science, yet a century later literature expresses doubt about scientific and rational notions of progress. As mentioned earlier, the discovery of electricity and its gradual integration into everyday life raised many doubts and fears at its early stages."[52] This novel also reflects Mary Shelley's perspective of science in that area. Roger Luckhurst wrote, "Indeed, the extension of these technologies into the domestic sphere produced an updated, electrified version of the uncanny. The phonograph preserved the living voice beyond death; the telephone crackled with spooky echoes and unearthly noises that some interpreted as spiritual or interstellar messages; telegraphy, hailed in Britain as the Empire's nervous system, was commonly used by Spiritualists as an analogy for contacting the dead."[53] The great achievement of Frankenstein is eventually written as a horror story by Shelley's, showing the "collective anxieties about the dangers of science and technology."[54]

Frankenstein sees the Creature as a non-human being that does not have consciousness thus, he is not able to learn language. Because the ways of understanding language has been defined as functioning of mind. But in the Arctic, Creature explains his two years of life in fluent language with logical narratives. Most of modern philosophers regarded sensations can be grasped with consciousness and considered that body and mind are divided. But in terms of the Creature's experience and learning process of language it is different from this dualistic concept. He picks up the language from other people by secretly listening their conversations, rather than directly learning from them. And he uses his sensations and experiences from the wilderness to form abstract concepts and he can put them together with words. We can find that intelligence ability of learning language requires the mixed usage of consciousness and multiple senses. From the point of view of posthumanism, it is known that human is not independent being and our cogitation is not something

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[51] (Lazzarato 2014b, 55)
[52] Georgia Panteli, *From Puppet to Cyborg: Posthuman and Postmodern Retellings of the Pinocchio Myth,* Doctoral thesis (PhD), (University College London, 2016), 53.
[53] (Luckhurst 2005b, 26)
[54] R. M. P. and Peter Fitting, "*Futurecop: The Neutralization of Revolt in "Blade Runner", (*Science Fiction Studies, Nov, 1987), 340-354.

separated from body. Besides, the division or the orders of things are flexible, not absolute.[55] It is necessary to develop language skills to get knowledges and enlarge perception. Consequently, his endeavour of learning his language brings him into a new level of consciousness.

At the end, Creature eventually gives up on being accepted by humans. He instead pressures Victor Frankenstein into creating a female creature so that he can have a mate, telling he promises that if he could get her, he will disappear and never return. Victor agrees, so he creates another she-creature for him. But he is already frightened and overwhelmed by his first creation that has superior physical abilities and power, moreover he even has fluent language skills with persuasive logic. Frankenstein decides not to go through with it, and destroys the creature. Because he is afraid of this posthuman breeding his offspring with new bride. He puts the safety of human race before his scientific achievement. But his decision caused the death of his beloved ones. At the end of the novel, Victor Frankenstein tries "Becoming-monster"[56] to kill the Creature as a revenge, in contrast to Creature's attempts of "Becoming-human."

Frankenstein's reaction is not only the exclusion of the others, but also exclusion of the powerful Posthuman. And it is comparable to many artworks that reflect dystopia future of existing high technology and cyborg that has powerful body and artificial intelligence. The full title of this novel is *Frankenstein; or, The Modern Prometheus*. It includes Prometheus who brought "fire" to mankind and delivered technology and who is considered as a symbol of human rationality. Starting from the very first light, Sun and the Moon, it moves to fire and the light finally becomes electricity. This "spark of being" has been changing human lives. Mary Shelley's Frankenstein might have been already explored our future in advance.

Following is another work that debates humanity. What I chose to compare to *Frankenstein* is the Japanese TV series 鋼の錬金術師 *(Fullmetal Alchemist)*. This work shares a number of similarities to that of the literature written in the 19th century in Europe. Created by Japanese manga artist 弘 荒川 (Hiromu Arakawa) which is the male pen name of 弘美 荒川 (Hiromi Arakawa, * 1973), her work *Fullmetal Alchemist* was published as comic book first, then it was later adapted into two versions of TV series. First version of *Fullmetal Alchemist* was aired in 2003 with a different ending from the original comic book series, the later

[55] (Lee 2017b, 229)
[56] Ibid., 237.

version was aired by the title *Fullmetal Alchemist: Brotherhood* in 2009, following the original story line. The work is set in a fictional universe that alchemy is a core skill that affects the world crucially. Although its fictional characteristic, it is regarded as in-depth work that contains significant philosophical questions and provokes meaningful debates on "what is 'human being' and what is 'being human.'"

The story follows the adventure of two alchemist brothers named Edward and Alphonse Elric, who are searching for the philosopher's stone to restore their bodies. They lost their bodies after a failed attempt to bring their dead mother back to life by performing the absolutely prohibited alchemy. Edward lost an arm and a leg, Alphonse lost his whole body, only his soul is bound to a suit of armor. During the adventure, the brothers confront numbers of non-humans, homunculi and chimeras. Also they access to the hidden secret of the philosopher's stone and become involved in the ugly truth of their country.

The story takes place in the country called "Amestris" where alchemy is used as the most powerful scientific technology, and it is the utmost knowledge that is the closest thing to reach to truth. The background of the story is similar to the European culture after the Industrial Revolution. Beside the characters appearance, language and their names, it is all based in Europe People in this animation including the brothers do highly value science and they understand the world only with scientific logic. And alchemists deconstruct the elements and reconstruct them to something else, but only followed by the natural order, "Law of Equivalent Exchange." Meanwhile this pursue of science causes many problems as well, attempting to transmutation of base metals into gold or modifying humans. Therefore, there are various experiments on creating non-humans such as homunculi and half human/half animal chimera that are attacking human. Those creatures are also born in the laboratory like Victor Frankenstein's monster. The reaction of the brothers on the transmutation of their mother is similar with the Victor Frankenstein's, because their result was terrifying. Instead, the brothers use chemical components of flesh and blood, add their own blood as "information of life" to bring back their mother's soul. "Water: 35 liters, Carbon: 20 kg, Ammonia: 4 liters, Lime:1.5 kg, Phosphorus: 800 g, salt: 250g, saltpeter:100g, Sulfur: 80g, Fluorine: 7.5 g, iron: 5.6 g, Silicon: 3g, and 15 other elements in small quantities.. That is the total chemical makeup of the average adult body. [..] For that matter, the elements found in a human being is all junk that you can buy in any market with a child's allowance. Humans are

pretty cheaply made."[57] The creature that they transmuted barely has a shape of human body and it just screamed and finally died shortly after. It is not a human nor an animal, just a wriggling life. It is described by the boys' neighbour who is totally disgusted by it, "That 'thing' was not a human." She added, "Is it alchemy that can create something horrifying?" But unlike *Frankenstein*, this creature is not the main protagonist of the series. Most of the creatures in this work born in laboratory are mingle with people very well and pursue their own purposes.

Another side effect is that the knowledge of alchemists is used for killing in war. Alchemists are supported, at the same time, strictly controlled by the military government. They have to cooperate with what the authority demands without questioning. Their country Amestris has been developing weapons with alchemy technology and using them for conquering other territories. This is highly criticised within the work through the traumatised protagonists. Actually, the setting of the time is after the "Ishbalan Civil War." And most of the figures experience the war directly and indirectly. They lost their families, friends and even themselves due to the war, and keep living in agony. Through this, Arakawa reflects a dark side of technology, when it is used in a wrong way. While Amestris represents modern Europe, Ishbal reminds of people from the Middle East living with very strict religious rules. Some of them consider alchemy as devil's study that disturbs their God's providence, and others are indifferent to that knowledge. One country believes in science and the other believes in God and there is no space for understanding each other. Eventually, The *Fullmetal Alchemist* warns that these extreme attitudes can only bring people to define "the others" as something different with a negative connotation and, hence, causes severe discrimination.

The Creature is the only one non-human in *Frankenstein*, but there are many homunculi in this work who claim that they are humans, even superior than them. Created by the "Father" who is the series' central antagonist, homunculi have superhuman abilities like the Creature. But these non-human beings are arrogant, degrading human as physically and mentally vulnerable and weak, which is a significant difference with Frankenstein's Creature. Rather, the main protagonist Alphonse who is born as a human doubts himself as a non-human, after losing his body. Along with a superhuman body, homunculi claim that they have proper personalities such as love for the father, friendship, consciousness and memory. Thus, most of homunculi are obeying to "Father," the creator of them, with love and respect.

[57] Hiromu Arakawa (弘 荒川), *Fullmetal Alchemist,* Volume 1, (VIZ Media LLC, 2005 (2002)).

At first, human protagonists are afraid of them but not because of the appearances but of the different purposes and behaviors, since the order from the Father is killing people. But later, humans do not find big differences from them and they accept each other.

Fig. 14. "The Father" from Hiromu Arakawa. *Fullmetal Alchemist:The Brotherhood,* "Otousama," 28, 2009. Directed by Irie Yasuhiro. JNN, 18 October, 2009.

But the "Father" is different being that never could along with anything. It can be compared to Dr. Frankenstein, because both of them create life. It is the first homunculus from an ancient country. In that time, it exists as a shadow of sphere and trapped in a flask just like its literal meaning, "little person." Inside of the flask, it talks to people, spreads knowledge. But it desires to possess a body and wants to be a God, ultimately. After it is freed from the flask and got a body, Arakawa Hiromu transforms it as a "Father." And the Father implies a figure of "modern scientist" who thinks that his origin is rooted from ancient Greek.[58] The basement where it stays has toothed wheels on the whole wall, and there are flasks and pipes all around, just like a scientist's laboratory. In there, to fulfil its ultimate purpose of being God, it purges its humane weakness of it that are known as "seven deadly

[58] The Guardian, "And Greece created Europe: the cultural legacy of a nation in crisis," https://www.theguardian.com/artanddesign/jonathanjonesblog/2011/nov/03/greece-europe-cultural-eurozone-crisis (accessed May 8, 2019).

sins," pride, envy, wrath, sloth, greed, gluttony, lust and put each into the homunculus he created and name them after the words of sins. But its purpose to reach to truth[59] does not corresponds to "Law of Equivalent Exchange." It requires enormous energy against physics, so that he tries to turn all the people in Amestris into philosopher's stone. But "Truth" does not allow it. Actually the conversations between Truth and Father, Truth and Edward shows the theme of the work, Arakawa's perspective of human, nonhuman and technology.

When Edward performs the Human Transmutation, the Truth appears. Since Human Transmutation is an unfair exchange that against the law of equivalent and prohibited to perform, Truth brings the alchemist into the Gate that contains every knowledge and the source of alchemy. And the Truth takes what an alchemist value the most to satisfy the law. The Truth here is similar with the thought of Lao Tzu's. When asked by Edward who this is, it answers "Who am I? One name you might have for me is The World, or you might call me The Universe, or perhaps God, or perhaps the Truth. I am All and I am One. And, I am You." [60] It talks, smiles and mocks, but it does not interferes in human problems unlike Buddha or Jesus. It is outside salvation history, and being just there as it is, like a nature. But it gives despair to those who breaks the rule. An alchemist who wants to bring her baby back to life lost her organs so that she can never have baby again. Alphonse Erlic wants to feel his mother's warmth again, but the Truth takes his body so that he will never be able to feel anyone's warmth. Edward wants his family back, but he lost his one left brother. And when the Father meets the Truth, the Truth mocks it. The Father, the first homunculus argues that craving knowledge is nothing wrong so that he can not be punished. But the Truth answers, "It is because you did not believe in yourself."[61] It is because that he uses the other people's life for his desire, not by his own strength. And purging of the flaws of humanity can not make it as a God. And finally it is absorbed to the Gate and lost its freedom forever.

At glance, it looks like this work discourages human to overcome their limitations, and just follow nature's order. But it encourages human to grow up by embracing their weakness, unlike Homunculus that wants to eliminate its weakness. It encourages people to

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[59] The term "truth" here means absolute knowledge in this work. But when I refer to the "Truth," it is personified being that appears when alchemists confront it.

[60] *Fullmetal Alchemist:The Brotherhood*. "The First Day." 2. Directed by Irie Yasuhiro. written by Hiromu Arakawa. JNN, 12 April, 2009.

[61] *Fullmetal Alchemist:The Brotherhood*. "The Other Side of the Gateway." 63. Directed by Irie Yasuhiro. written by Hiromu Arakawa. JNN, 27 June, 2010.

be with others who are also weak and vulnerable, and overcome even the Law of Equivalent Exchange. Because human and their world do not correspond to that law. The work affirms that there are more than many variations, complexity within human beings. There is one scene that hints this concept, a conversation between one major and the man under her command. “Winter here is nice, there are only white and black. I like its clarity.” “Is it? If you look up the sky, there is blue, too. Like human’s heart.”[62] What the Law eventually means is that if you want to develop yourself, you should pay the price for it by challenging and putting efforts. Human are described here as humble beings. They are humble to each other and even humble to knowledges.

At the End, Edward Elric also meets the Truth last time. He says that he used to think that the knowledge is the truth of the world and he could solve every problem with it. But unlike his alchemist nickname “Fullmetal,” he accepts that he is “just a vulnerable human.” So he gives up his Gate of the truth and lost his knowledge and ability of performing alchemy, because he already has his people. This is what he pays for his brother’s body and Truth accepts it. “That is the answer, alchemist! You beat me. Take it with you, everything!”[63] The Japanese animator reflects her perception that human is weak and flawed who are even pitied from non-humans. Therefore, the draw line that human made for categorising the world and their understanding can not be always true. Science and technology might be developed faster than people, so that people can be lost sometimes and misuse them. The message is that we should defend humanity even if it looks weak. And we should not be arrogant, should not try to understand everything by our own standards.

[62] *Fullmetal Alchemist:The Brotherhood*. “Conflict at Baschool.” 38. Directed by Irie Yasuhiro. written by Hiromu Arakawa. JNN, 27 December, 2009.
[63] *Fullmetal Alchemist:The Brotherhood*. “The Other Side of the Gateway.” 63. Directed by Irie Yasuhiro. written by Hiromu Arakawa. JNN, 27 June, 2010.

## 3-2 Becoming-Transhuman: *Ghost in the Shell*, *May The Horse Live in Me*

There are other types of transhumans those who do not want to "be a human," rather they seek for "Becoming something else." Kusanagi from Japanese film *Ghost in the Shell (1995)* is a half cyborg who wants to define herself who she is. Besides, the genre of the film is also helpful regarding the issue. Science fiction is a good genre that opens a discussion about posthumanism, because it pushes the theme to the edge with bold storylines and complex characters instead of pure philosophical analysis. Since animation itself has relatively more freedom than other traditional genres, it can be free from main ethics and science. Therefore, it can anticipate future developments in high technology and its impact on society with various narratives and characters almost without limitation. Japanese animation film *Ghost in the Shell* challenges the concept of discrimination of species and transhuman. It is an ongoing discussion that happens currently, ready for the fourth industrial revolution. Media artist group Art Orienté Objet (Marion Laval-Jeantet and Benoît Mangin) also tackles the category of species but in different way. They attempt to "Becoming-animal" through their performance *Que Le Cheval Vive En Moi (May The Horse Live In Me)*. Through film and performance, those figures try their own ways of "Becoming," tackle the traditional notion of species, and claim the need of new one.

"In the near future, electrons and light flow freely and corporate computer networks eclips the earth. Despite great advances in computerization, countries and races are not yet obsolete-."[64] The first scene of the film *Ghost in the Shell* (1995) explains its background story. It is based in 2029 when the world is technically developed and human brain and computer are interconnected. The opening scene is significant. It shows the process of modelling a cyborg, and it is also modelling the universe of the film. It indicates that Kusanagi's real human brain is implemented to a cyborg. Therefore, she is not completely robotic and her cyborg body actually looks like human's. There is a moment, that you can not really recognise whether it is a human body or a robot. This is where questions were raised

[64] (Oshii 1995b)

about the replaceability of artificial humans and “real” humans. Another point is, the “ghost” from the title refers to mental existence like, soul and mind, on the other hand, the “shell” refers to physical existence. There might be a ghost, but the film does not confirm whether there is a ghost or not. In addition, there is one more protagonist, Puppet Master, who also drives the huge narratives in it. This Puppet Master is an AI program developed for hacking the governments or companies to disturb the world. But it escapes, and finds Kusanagi to merge with her. Through her, it wants to reproduce itself, but not in a way of having a family or longing for a heterosexual partner. After it recognises its huge defect that it could be annihilated by a single virus, it wants to overcome this flaw of the program. At the end, Kusanagi’s dilemma and its motif reach to a compromise. Through these cyborg protagonists, the film threw the fundamental question about human, machine, definition of life and memories. In addition, it has been influencing other cyberpunk works, and has been considered as a masterpiece of science fiction animation.

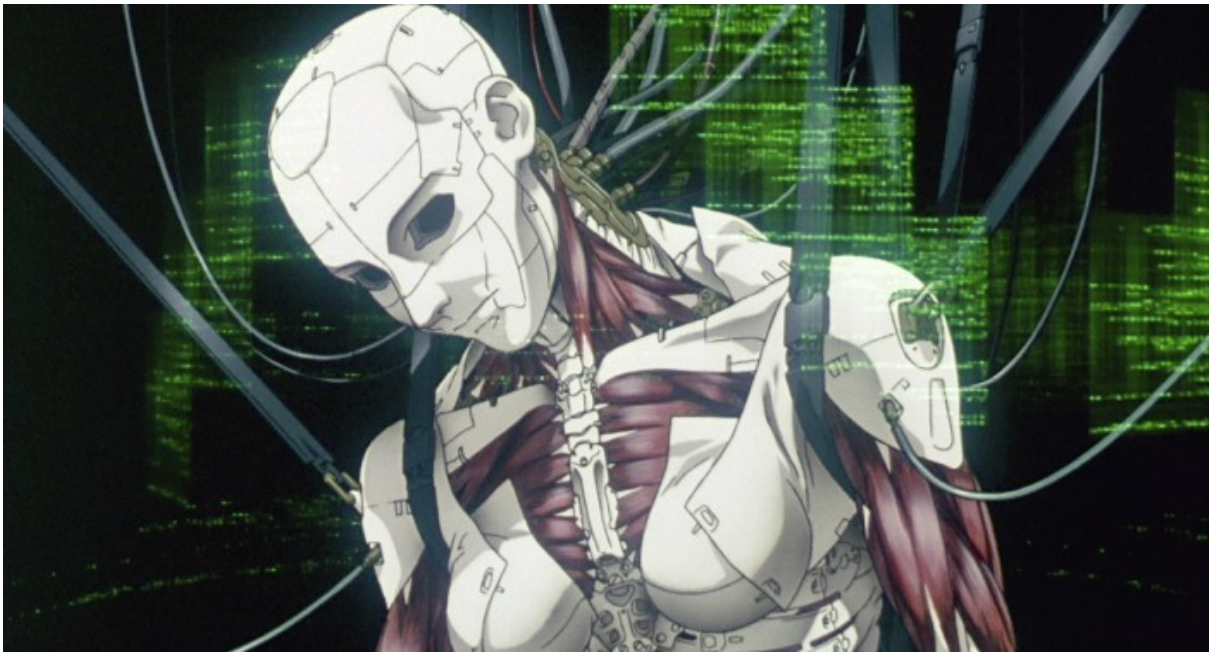

Fig. 15. Building up cyborg body, still from
Mamoru Oshii. *Ghost in the Shell*. Directed by Mamoru Oshii. Japan: Shochiku, 1995.

As mentioned, Kusanagi is a half human/half cyborg whose brain is human while her body is a machine. And she hears voices inside of her and even makes conversation with it. She names that voices as “whisper,” implying that she is not aware of the origin of it. “Just a

whisper. I hear it in my ghost." This can be considered as mind or thoughts but it is not explained in the film. She is confused about her identity, whether she is "human or robot." But she does not long for being human, nor being obsessed with the high technology of her body. She rather wants to find her own identity as she is, the co-existing human and machine. McLuhan states, the cybernetic posthuman is a material-semiotic symbiosis that argues for technology as the extension of the human,[65] whereas for the people in this work, it is "natural" to have the brain connected to a computer network so that they can access to anywhere and anytime. Therefore, their bodies are more or less the extension of technology.

While experiencing an inner conflict, Kusanagi witnesses the conversation between humans and "Puppet Master." Puppet Master calls itself as Project 2501 that is secretly developed by Section 6 to hack other's ghost. This means, it invades to other's brains and manipulates their memories which is one of the biggest felonies. Through this, it fundamentally manipulates politics, economy and alters databases that enormously affect international diplomacy. It is a bodiless artificial intelligence, born from the Net. But it claims political asylum "as a living life". Following is the lines of the scene, discussing whether the Puppet Master is a life or not.

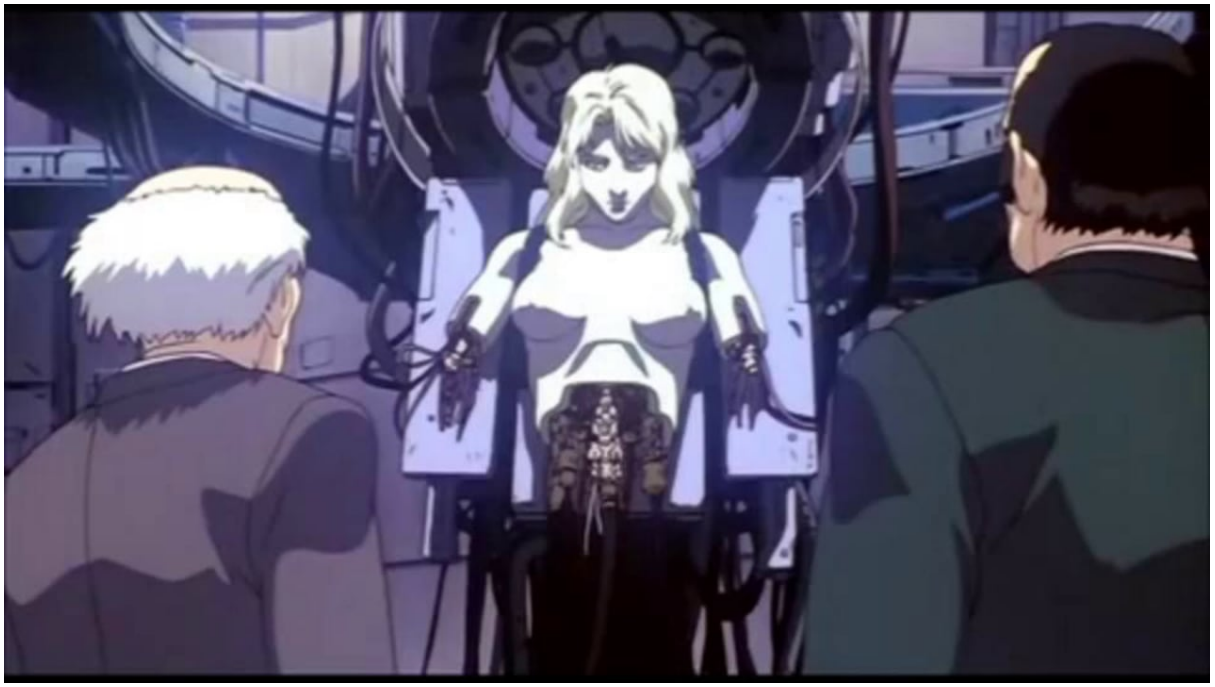

Fig. 16. Puppet Master, still from Mamoru Oshii. *Ghost in the Shell*. Directed by Mamoru Oshii. Japan: Shochiku, 1995. still cut.

[65] (Blaagaard 2015c)

Puppet Master:

robotic voice: *"You will not find a corpse. Because I've never possessed a body. (...)*
*I entered this body because I was unable to overcome Section 6's reactive barriers.*
*However, what you are now witnessing is act of my own freewill. As a sentient life form, I hereby demand political asylum."*

Opponents:

*"A sentient life form?" "Ridiculous! It's just a program for self-preservation."*

Puppet Master (robotic voice):

*"It can also be argued that your DNA is nothing more than a program designed to preserve itself. Life is like a nodal point born in an overwhelming sea of information. And life, when organised into species relies upon genes to be its memory system.*
*So, man is an individual memory system only because of his intangible memory. And a memory cannot be defined, but it defines mankind. When the advent of computers made the externalisation of memories possible, you should have taken its meaning more seriously."*

Opponents:

*"Nonsense!" "Your babbling offers no proof at all that you're a living, thinking life form."*

Puppet Master *(robotic voice)*:

*"Proving it is impossible. Because modern science cannot explain what life is."*

Opponent:

*"Who the hell are you?"*
*"Even if you do have a ghost, we don't offer freedom to criminals.*
*You chose the wrong place to defeat."*

Puppet Master *(robotic voice)*:

*"Time is always on my side. I've now acquired the possibility of death, but there is no death sentence in this country."*

Opponent:

*"Half immortal. An artificial intelligence?"*

Puppet Master *(robotic voice)*:

*"I am not an AI. My code name is Project 2501."*
*(real voice) "I am a living, thinking entity who was created in the sea of information."*

-Mamoru Oshii, *Ghost in the Shell*[66]

[66] (Oshii 1995c).

Puppet Master argues its status as a life form based on two things, one is that preserving program is same as DNA, and the other is that memory which defines mankind can be structured by computer program as well. Also the “Net” is the ocean where life is born and acts. To handle with offline incidents, the agents including Kusanagi connect to the infinite Net and investigate, move, and contact. The Net is, therefore, the existing space where people also act along with machines. The network that we access also exists as practical space where we can manage our down to earth lives. Not only Kusanagi, but we also connect to network and interact with it on our daily basis. We are online, and we inhabit in that space.

Fig. 17. Kusanagi, still from Mamoru Oshii. *Ghost in the Shell*. Directed by Mamoru Oshii. Japan: Shochiku, 1995.

And it describes the Net as “sea” of information in its word. And this sea metaphor works differently to Kusanagi. A water or fluid is shown very often in this work, as a metaphor of origin of life. And it implies how Kusanagi finds her own answers about her identity. Most of the opening scene represents the building of Kusanagi’s cyborg body under a sticky fluid. The body is sinked in and raised to the top of the liquid. And it moves to the more water-like liquid same as amniotic fluid of the cyborg. From that amniotic fluid Kusanagi is born. And when she is possessed with her identity problem, she dives deep into the water and looks her reflection on the water. In it, she approaches to her reflection and merges with it, which implies that she eventually finds her own answer instead of being frustrated by confronting a wall.

As mentioned above, it also argues about “memory”, which constitutes consciousness, that is considered as one of the main characteristics of human being. It stresses that when computers could manipulate human memory, human should have taken its meaning more seriously. When it becomes possible to generate and reproduce memory the contrast of human and machine becomes blurry. With these reasons, Puppet Master demands its right of a sentient life, since current science can not define what life is, especially in the world where human and machines are interconnected very closely. Kusanagi listens every word from Puppet Master and she is much inspired by it.


Fig. 18. Destroyed Tree of Life,
still from Mamoru Oshii. *Ghost in the Shell*. Directed by Mamoru Oshii. Japan: Shochiku, 1995.

After this conversation, it escapes from the building and Kusanagi is assigned to arrest it. She heads to a Natural History Museum, and fights alone recklessly until her body is catastrophically destroyed. It is because she is desperate to get the hint from the Puppet Master, who she really is. Meanwhile, there is a significant moment that delivers the message that is underlying the film. On a wall of the Natural History Museum, “Tree of life” is carved, with humankind at the top of the tree. And by following Kusanagi’s movement, it is destroyed by the bullets from the bottom to top. It seems like that this scene asks questions and also answers question. Where can we positioning a “cyborg that is between human and

machine" among the conventional categories of species? The background music of this scene is named "Reincarnation." It means the new needs of drawing new lines between species, by destroying the existing categories. Perhaps it requests to draw "net form" orders, rather than vertical hierarchy orders, that is without centre, just layered and interconnected.

Eventually, Kusanagi is succeed to access to Puppet Master and they have a conversation. Puppet Master reveals its ultimate purpose that it desires to merge with her. It does not want to copy itself, because copies can be destroyed by one virus. It wants reproduction, not replication. "A copy is merely a copy. There is the possibility a single virus could utterly destroy me. A mere copy does not offer variety or individuality. To exist, to reach equilibrium, life seeks to multiply and vary constantly, at times giving up its life."[67] It claims that diversity is the only way to survive from annihilation which is one of the reasons for choosing her. It only follows its motif as a program logic, unlike Frankenstein's Creature that wants to be loved. Donna J. Haraway describes this characteristic as, "the cyborg does not expect its father to save it through a restoration of the garden—that is, through the fabrication of a heterosexual mate, through its completion in a finished whole, a city and cosmos. The cyborg does not dream of community on the model of the organic family, this time without the oedipal project."[68] Kusanagi still has a human brain which contains DNA that works as self-preserving program, compared to the artificial intelligence that Puppet Master has. It sees the possibility of merging with DNA. DNA consists of four nitrogenous: cytosine, guanine, adenine and thymine[69], on the other hand, Puppet Master's AI consists of a binary system, 0 and 1. Actually, it is not explained how they can be merged together in the film.

There is also a very interesting question that Kusanagi asks, before she decides whether to merge with AI or not, that she worries about losing herself after. Then the Puppet Master tells its definition of human identity. It adds, "But to be human is to continually change. Your desire to remain as you are is what ultimately limits you."[70] And I see this as a request to the audience to reflect about existing notions. Finally, Kusanagi accepts the suggestion and they merge together. After 20 hours, she wakes up with a merged mind in a

[67] (Oshii 1995d).
[68] (Haraway 1985c, 9)
[69] Wikipedia, "Nitrogenous base," https://en.wikipedia.org/wiki/Nitrogenous_base (accessed May 8, 2019).
[70] (Oshii 1995e)

new shell. The last scene is similar with the first scene of Kusanagi. When she appeared first time, she was standing on the top of the building, and she jumps into the city. On the contrary, in the last scene, new Kusanagi stands up outside of the city and looks down onto the city with a broaden perspective. She says, "So where does the Newborn go from here? The Net is vast and infinite."[71] The film is contrasting the existing notion of species and suggests a new understanding of human and machine in a relatively extreme way. At this point, it is hard to predict what would really happen with AI and cyborgs, but this work asks meaningful questions regarding this issue.

On the other hand, there have been several exhibitions that posthumanism as a central theme, to be specific, the theme of "transformation of body." *Becoming Animal: Art in the Animal Kingdom* at MASS MoCA (Massachusetts Museum of Contemporary Art) in 2005 and *Transformation* at Museum of Contemporary Art Tokyo in 2011 are well known examples. In addition, *Project Genesis, Synthetic Biology-life from the Lab* is an another exhibition in Linz, Austria in 2013. In this exhibition, a work by Art Orienté Objet (Marion Laval-Jeantet and Benoît Mangin) performed the project *Que Le Cheval Vive En Moi (May The Horse Live In Me).* It's a bio-and body art project - a medical experiment as an artistic performance. The artist Marion Laval-Jeantet allowed herself to be injected with horse blood plasma. To make this possible, she prepared her body by allowing to be injected with horse immunoglobulins, the glycoproteins that circulate in the blood serum, and which, for example, can function as antibodies in immune response for several months.[72] After the transfusion, the artist performed a communication ritual with a horse while wearing prosthetic horse-like stilts. "I had a feeling of being superhuman. I was not normal in my body. I had all of the emotions of a herbivore. I couldn't sleep and I felt a little bit like a horse,"[73] said, Marion Laval-Jeantet when asked about the experience. Through this performance, she transgressed the boundaries of species and became a new type of "lifeform" that can not be categorised. Her "Becoming-Animal" is a direct biological attempt, unlike "performing like animals." Ars Electronica 2011 commented, this staged blood-sisterhood raises the question

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[71] Ibid.
[72] Regine,"Que le cheval vive en moi (May the horse live in me)," http://we-make-money-not-art.com/que_le_cheval_vive_en_moi_may/ (accessed May 8, 2019).
[73] The Artist Bestiary, "Art Oriente Objet: Performances about Transformation," https://artistbestiary.wordpress.com/2013/08/09/art-oriente-objet-performances-about-transformation/ (accessed May 8, 2019).

of the boundaries separating different species, and human beings' purported superiority to animals.[74]

The horse has a symbolism as well. Her blood can be literarily considered as "the blood of centaur." There was a mythical hybrid "centaur" in ancient Greek that has the legs of a horse and a human torso. As a centaur can not be positioned as human nor animal, her blood after the transfusion can not be categorised, because it is mixed with animal. She explained her motif of the work as "Having just decorative art is becoming less and less important in the digital information age. As society moves faster, we are increasingly informed by all this data but I think people have less time to really digest it, emotionally. I feel our art tries to reconcile the facts with people's ability to understand them."[75] Therefore, this project is an attempt to experience another being, outside of a human centric understanding. The performance showed that "the other" can become a part of ourselves and the meaning of "animal" or "monster" as the intelligible counterpart of our human-being is obsolete.

*Ghost in the Shell* exposes the limitation of human-centric arrangement and conventional definition of human and life through the cyborg protagonists. And the performance *Que Le Cheval Vive En Moi (May The Horse Live In Me)* shows the biological trial of overcoming the classifications of of species. Both works suggest to draw new lines, outside of human-oriented notions. In philosophy, Gilles Deleuze brings the concept "line of flight."[76] It is about finding new values or methodology out of predominant values. This is connected to "Nomadism," a cultural anthropological phenomenon that describes a social group coming from the "outside", (from a sedentary perspective) and keeps moving to another territory.

[74] Ars Electronica, "Prix Ars Elektronica 2011," 2011.
[75] Tshepo Mokoena, "May the horse live in me," http://dontpaniconline.de/p/posts/art/horse-power (accessed May 8, 2019).
[76] (Massumi 1987b, 16).

## 3-3 Becoming-Transhuman 2: *권지용, Common Flowers / Flower Commons*

G-Dragon is a leading artist in Korean Pop scene. In 2017, he released his album 권지용 *(Kwon Jiyong)* which is his real name. Just like every time, his album became a hot topic but this time not only because of his degree of popularity. It was the experimental attempt of its physical form and its way of distribution. His album is a USB memory stick, not a CD. User can execute the USB and access to a website provided through a link on the USB stick. To download the mp3 files and pictures from the website, users have to fill in a serial number from the case of the album. It costs 30,000 Korean won that is around 23 euro. Unlike other albums, it does not provide any physical photo books and other printing material, therefore, the price is considered relatively high. Shortly after, it got controversial about the issue, whether this USB memory stick is an album or not. And if it is worth to pay the high price. Around the same time, Netflix's original movie *Okja* was rejected by 93% of South Korean major movie theatres because it does not guarantee exclusive screening period.[77] Eventually the movie was screened in very limited numbers of independent theatres. Both examples show new distributing methods of the entertainment industry through digital media. And it raises the question about the value of digital information that can be reproduced infinitely without a manual or mechanical process. Traditionally the latter gives us feeling for the value of a product. But what I focus on this album is not about "album or not album" controversy, rather on the concept of the album and its message. Why did he deliver a USB memory stick to the sensitive market and consumers who already got used to use streaming service and cloud drive?

First, just like the title of the album, the USB memory stick is a symbol of himself that functions sexually, as a part of his body. On the red surface of the stick, his name and biological information, "권지용 A형/1988년 8월 18일 (name, blood type, date of birth)" are written by the artist's mother. To initiate the album, users have to insert the memory stick into

[77] Zack Sharf, "'Okja' Rejected By 93% of South Korean Movie Theaters Over Netflix Controversy," https://www.indiewire.com/2017/06/okja-south-korea-rejected-netflix-bong-joon-ho-1201838682/ (accessed May 8, 2019).

a computer. An editor Heeyun Lim describes it as “due to the sticky red ink on the surface, it becomes a life form over the cold metal.”[78] Accroding to the concept of the album, his music, pictures and videos can be understood as his offspring and they are spreading through the network. This action that is a necessary process to access his music resembles of regenerating his identity in a cybernetic way. Along with his album 권지용, the title of his World tour was “M.O.T.T.E” which stands for “Moment of Truth The End.” And the word MOTTE has the same sounds with word 모태 (母胎) that has the meaning of “womb.” This concept implies that he is the data on the USB stick and the stick can be considered as his host body, like Puppet Master from *Ghost in the shell*. His (biological)identity, written on the USB Stick, travels in the network anywhere and anytime though the actions of the users. In other words, G-Dragon transforms himself as a cyborg-like being that spreads its offsprings in users devices and networks.

Fig. 19. G-DRAGON, 권지용, 2017, USB memory stick, YG PLUS.
https://www.mk.co.kr/news/culture/view/2017/06/410201/

[78] Heeyun Lim, “USB음반 '권지용'의 또 다른 메세지 (another message of USB album, '권지용'),” http://news.donga.com/Issue/List/70070000000952/3/70070000000952/20170621/84981902/1 (accessed May 8, 2019).

I see this album as meaningful artistic practice, no matter how "artistic" it is. But it is also true, that he still belongs to Pop culture that makes him to produce consumed products. To deliver his concept, the USB stick had to be painted manually and this raised the price a lot. Besides, to the listeners who do not want to tolerate its inconvenience, this album would not be an easy option to choose. And it disturbed the music industry by its way of distribution system. As a result, the album is still in controversy. But nowadays, artificial intelligence analyses your taste and selects the songs for us. Perhaps it is welcoming to see the coexistence of outdated USB memory stick that makes listeners to undertake inconvenience and AI's playlists at the same time.

The following art project crosses the legal boundaries of genetically modified (GM) plants and normal plants on biotechnological basis. The BCL is an artist collective founded by Georg Tremmel (* 1977), Shiho Fukuhara (* 1976). Their research explores relations and differences of biological and cultural codecs. Through artistic practices and bio science, they focus on the social implications that the widespread adoption and application of biotechnology will create. One of the series works *Common Flowers / Flower Commons* exposes the discrepancy between the legal allowance to grow GM plants. Also, it confuses the biological characteristic of the *Common Flowers*. The project begins with the first commercially available genetically modified flower, the blue carnation called "Moondust." Originally, a Japanese company developed and marketed this flower, but it chooses not to nevertheless the company applied for and was awarded the permission to grow this GM flowers in its key markets. In the statement the artist explains their attempt, "With *Common Flowers* we reverse the plant growing process, by growing, multiplying - technically 'cloning' - new plants from purchased cut-flowers using Plant Tissue Culture methods."[79] In other words, since it was prohibited to "harvest" the blue carnation, artists chose to buy cut-flowers and eliminate genetic element which was used for adopting blue colour into the petals. Then, the flowers could be brought back to life with other common flowers without any illegal situation. Consequently, this process challenges the biological identity of this life and its legal range. The flower that was used for this project supposed to be illegal to plant on the ground. But if the plant's colour is genetically modified, and then its colour goes back go

[79] BCL, "Common Flowers / Flower Commons," https://bcl.io/project/comflow/ (accessed May 8, 2019).; compare also Wikipedia, "Dianthus Caryophyllus," https://en.wikipedia.org/wiki/Dianthus_caryophyllus (accessed May 8, 2019).

the original through another genetic modification, can we say that it is legal to plant to the ground again, like common?

# Conclusion

> Any technological advance can be dangerous. Fire was dangerous from the start, and so (even more so) was speech - and both are still dangerous to this day - but human beings would not be human without them.
>
> - Isaac Asimov

A critic Ryu Chulha states, art in posthuman time perceives numbers of boundaries that limit the meaning of our lives and moreover, we live by violating or overcoming the boundaries and live on them.[80] The strategy that artist takes is bringing out the dispute and overlapping cultural and biological borders, and visualise those. Therefore, the advent of non-human beings does not mean of annihilation but a new condition of post-modern and share and challenge.

I would like to go back to the Go match of AlphaGo and Lee Sedol. Was it truly Go that AlphaGo played? I think AlphaGo's game has several implications about technology. Go is not the game about calculating game nor winning. The beauty of the game is having a kind of a conversation by receiving and sending player's personality, style and emotion. There are historical records that generals played Go before the battle to figure out each other's battle strategy. Although the game is played by following certain rules and making a result of win or lose, the process is very intuitive and psychological that reflects player's personality directly. Therefore, the record of the game also adopts this characteristic so it is often written like literature. Following is one of the famous Go recording phrases.

> A remote move like sunset on vast plains appeared once again. Mysterious perplexity which doesn't expose the sharp blade is surrounding 40. The

[80] Chulha Ryu, "Becoming-Animal: Aspect of Posthuman Art," 2018.

move is wildly rated “extraordinary.” Suddenly, under the soft pressure Cho cannot find where to move. The opponent is asking quietly: War or peace?

- Chimoon Park, *The Match*

It is indeed stimulating that AlphaGo could realise quality Go games against world’s best masters. But there is also an opinion that AlphaGo was just calculating the best move based of the database of around 30 million moves from 160,000 games. In the strict sense, it can be said that this high technology interrupted the true meaning of Go and there was no consideration about what Go values in game. In another “Google DeepMind Challenge Match” in China, Ke Jie who had world No. 1 ranking at that time shed tears during the game. In the interview he stated, what Go does is so perfect that it was very painful to play with it.[81] And he added that it is more pleasant to play with human. For this young master Go is definitely more pleasant game when interacting with “someone” who has emotional ups and downs. I do not know how the Google’s DeepMind researchers understood Go, but if there was no respect of the game from the perspective of the laboratory, they might gain victory, but they did not protect the true meaning of Go game.

On the other hand, there are people including Lee Sedol and Ke Je who think that AlphaGo contributed to the future of Go. Ke Je described the match as “AlphaGo vision reaches into the universe, while what we can see is just a small pond not far away from our home. So let it take care of the universe and I will be satisfied just fishing in my small pond.” [82] Lee left interesting comment, he thinks that AlphaGo prefers white stone than black. That is, this Korean master put sort of a personality to his AI opponent. And he also added the comment to the public who seemed shocked about the defeat that “It is not a defeat of mankind, but a defeat of Lee Sedol.” When reviewed the games in 2019 via Youtube video, he said that it was not unfair or too difficult game. The reason of defeat was his personal slump since 2015, and his attitude that he underestimated the machine. Lee seemed rather impressed by the AI after the match.

[81] Chungho Kim, "커제 '알파고와 바둑은 고통, 이길 수 있다는 희망마저 없어'," https://www.nocutnews.co.kr/news/4790656 (accessed May 8, 2019).
[82] Kyungchun Yoo, “알파고가 던져준 신비한 기보 분석,” https://america.cgtn.com/2017/05/28/go-champ-ke-jie-talks-about-his-match-with-googles-ai (accessed May 8, 2019).

After the matches, AlphaGo retired from Go. It was short time after that it was awarded “honorary 9 dan” by Korea Baduk Association. AlphaGo left 50 records of the game that it played against itself. After they was revealed, Kim Seongryong 9 dan said “It is overwhelming feeling as a person who has been studied Go for the entire life. To be honest, I can not imagine if this kind of Go could exist. […] It seems like the alien appeared and threw 50 records to the Earth and went back to his own planet. AlphaGo enlightened people how the existing Go style limited people, and gave us the freedom of thinking.” And “AlphaGo’s game is not something that can be explained but should be appreciated like artwork. […] This is how we see AlphaGo now. The first thing that I will do is throwing away the Go books that I have.”[83] He sees that the Go theory will be reestablished, and these records open the possibility of the higher level of Go. He rather saw hopeful future of the AI from the frustrating defeats.

Many parts of this thesis is about not discriminating machines and its technology as “the others” but seeing them as “parts of what defines human.” At glance, it could be understood as giving up human subjectivity. But we should not forget that the purpose of technology is not replacing human, but it is there for complementing human’s limitations. In other words, current posthumanism aims to criticise the conventional perspective of human being. It seeks to make new relationship between human and non-humans such as, nature, object, animal in this world with acceleration. Especially, artists regardless of genre also reflect this in their own ways. Their artistic practice points out that we should find balances, while expressing criticism. Demand of new definition is not only about “unknown thing” from future, but also about how to deal with “things that have been existing until now.” We already know that technology is not value-neutral. It has been including the possibility of “abuse” and “misuse.” This is what the artworks emphasised in common. As the technology is more developed, we should value humanity as well. The unique area of humanity should be protected.

While investing this subject, I was inspired by many artworks. I found that the high-technology and artists’ skills can widely open unlimited possibilities of artistic practice. It is indeed mesmerising to see how much art can reach. But I was more impressed by their broaden perspectives and attitudes that go beyond boundaries. To challenge the existing

[83] CGTN America, "GO champ Ke Jie talks about his match with Google’s AI," http://baduknews.com/news/view.php?idx=342 (accessed May 8, 2019).

notions that cause any limitations or discrimination, artists even push the legal boundaries to the edge. They even tackle the understanding of "myself," and challenge my own way of thoughts. But at the same time, I learned that there are also things that we should protect. Like mentioned, as technology is getting developed, we should diligently consider its meaning as well, not to violate humanity etc.

When audiences were investigating my works and engaging to them, I could see them making new relationships with various elements such as, biological signal, clock, sensor and other audiences. What audiences found were sometimes completely unexpected, even I created the work and invited them. This could apply to my artistic attempts that reflect my thoughts. And I would like to keep questioning, interacting with others. Maybe we should "explore" without destination for "inhabiting" the world.

Finally, I would like to quote the sentence of AI once more. This is what the AI said to major Kusanagi who was confused about herself whether she is human or cyborg. “But to be human is to continually change. Your desire to remain as you are is what ultimately limits you.”[84] I hope that it is one of the ways that we could inhabit and explore this world better.

[84] (Oshii 1995f)

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