Movement, Mechanization, and Coexistence.

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Abstract

A movement is a tool that expresses the subject I pursue, ‘mechanization of human beings’. There are many technologies that replace humans these days, such as artificial intelligence. This makes me skeptical and afraid of being replaced as an artist in the future. Paradoxically, people, including myself, are enthusiastic about it, indicating that we do embrace the mechanization process as a society.

I will reveal this phenomenon of coexistence by demonstrating the possibility that machines cannot replace us, through motion experiments where rules increase, first starting with the reliance on intuition. I will explore not only the things that machines cannot replace but also the differences between individuals, through various interpretations between people, and movement experiments from analog to digital. I would like to explain this through the intervention of reason, which I frame as a factor that hinders intuition, and that I represent as a rule. To clarify, this way of representation is a rule-making process that I have defined in contrast to intuition.
Through my projects, starting with the exploration of what intuition is, I want to describe how intuition disappears as the rules increase, and how my movements become increasingly mechanized through various experiments. In the absence of rules, only intuition exists, and when rules are added gradually, each movement explains how intuition disappears and how the movement becomes rigid and restricted. My question is the exploration of the process of human beings becoming closer to machines when they follow rules. Every work is pursuing the same subject, but expressed in different ways of translation of mediums including sound, painting, graphics, photography, and movement-based performance.
We are living in a society where we cannot predict the future precisely because it changes rapidly. New technologies such as artificial intelligence and deep fake have come out and are affecting people. For example, an artificial intelligence chatbot developed by OpenAI called ChatGPT lets people present an instruction as a prompt and provide a detailed response to it. We can ask anything from basic problem-solving questions to how to make a code in Javascript. It is dominating our society at a fast pace. Moreover, deep fake - a compound word of ‘Deep Learning’ and ‘Fake’ - is causing problems nowadays. It is true that it helps not only for high quality education, by combining historical characters to look real but also for visual effects for movies. However, it can be and is abused in different ways such as digital sexual assault, manipulation of public opinion, etc. I believe that there is a double-sidedness in new technology.

As a member of a generation on the forefront of new technology, I am aware of the benefits and potential drawbacks that these innovations can bring. While the use of technology is undeniable, there is a growing concern that humans may become replaced by machines. In my work, I aim to visualize the process of humans becoming more machine-like through sound, painting, and photography-based performances. By highlighting human reactions and expressions that machines cannot capture, I aim to demonstrate the unique qualities that distinguish humans from machines.
One of the key aspects of my research is the exploration of human decision-making and intuition. Through movement experiments, I aim to reveal a human language that cannot be replaced by any digital medium. By emphasizing the differences between human and machine decision-making, I hope to provide a deeper understanding of the importance of human intuition in creative fields.

Through my projects, I seek to contribute to the ongoing discussion about the impact of technology on society and the arts. By exploring the unique qualities of human expression and creativity, I hope to provide a new perspective on the role of humans in an increasingly technology-driven world.
Translation of mediums refers to the process of expressing an idea or concept through different artistic mediums or forms of expression. In the context of my research, the subject being explored is the mechanization of human beings and the potential impact on the artist profession. The different mediums being utilized include sound, painting, graphics, photography, movement-based performance, and digital painting.

Each medium has its unique characteristics and methods of expression. By utilizing various mediums, I aim to explore different aspects of the subject and provide a more comprehensive understanding of the impact of increasing mechanization on the artist profession.

For example, a sound-based project might explore the relationship between sound and human emotion, while a painting project might explore the intersection between color and movement. Each project will contribute to the overall understanding of the subject, but will do so in a unique way that is specific to the chosen medium.

Through the translation of mediums, the research aims to provide a multi-dimensional perspective on the subject, highlighting the nuances and complexities that cannot be expressed through a single medium. It allows for a more expansive exploration of the topic, and offers a deeper understanding of how different mediums can influence the way that an idea is perceived and understood.
As new technology gradually replaces humans, it is becoming increasingly evident that machines cannot capture every detail of human experience, such as our thought process, inner decision-making abilities, and emotions. Among these, intuition stands out as a particularly challenging quality for machines to replicate.

In my research, I aim to explore the nature of intuition and how it functions in the process of interpreting and judging instructions in a short time frame. Through various movement experiments, I will analyze how intuition is affected by increasing rules and regulations. Specifically, I aim to demonstrate how intuition disappears as rules become more rigid, leading to movements that become increasingly mechanized.
At the beginning of my research, I discovered what is different between machines and humans. I believe what technology cannot recognize yet is the intuition of humans. Machines are only active just following logic but humans have feelings and processes of thinking.

My research seeks to investigate the nature of intuition and whether we can rely on it. To explore this question, I created a process-based performance piece titled *Only Intuition Remains*. This work aims to translate sound into painting and utilizes improvisational techniques to express the auditory experience. To achieve this, I collected various sounds from nature, including birds, leaves rustling, and trees scratching, as well as human voices and onomatopoeia. I then blended these sounds into a single audio file, which I edited intuitively, without following any set rules or guidelines.
During the performance, I focused on fully comprehending the mixed sound and expressing what I heard on canvas. I decided on the size of the canvas and the number of colors and tools to be used beforehand. However, even if I were to replicate the performance later, the interpretation of the same sound would differ depending on various factors such as my mood and physical condition.

This unpredictability and uniqueness of human intuition is a key aspect that distinguishes us from machines, and it is a phenomenon that I intend to delve deeper into in my research.

Overall, the exploration of intuition and its relationship with human and machine intelligence is a fascinating area of study. As machines continue to evolve, it is critical to understand the strengths and limitations of both human and machine intelligence and to explore how they can complement each other to achieve optimal outcomes.
After exploring intuition, I decided to explore the opposite i.e. rules. In this project, I compared humans and machines through the process of being a machine by following the logic that I constructed. Here, this idea causes another curiosity: Does my intuition disappear when there is an element that restricts my process? Through this work, I explored how paintings and movement change according to the number of rules added.

This project was conducted in public at the RISD Museum in Providence, RI. I made nine rules based on the sound program track. I then divided the soundtrack into nine sections and applied nine effects on each track. Also, I made rules for my movement. The first was the location on the canvas from one to nine, the second was the choice of shapes and material, and the last was the direction of my body. Then I translated each track through the rules of movement. I let myself draw four paintings listening to the same sound file with the only difference being the number of rules in play. In the first painting, similar to the previous work, I was focused fully on my intuition. In the second, I needed to be located in a specific space on the canvas. Further, I had to follow the rule of using specific shapes or materials such as a circle, line, or a roller. In the third painting, I needed to follow the rule of location, and the choice of shapes and material, as well as the rule of the direction of my body while painting.
*How to make rules?*

I made my own rules using sound program (Audacity) that I use for making my own sound.

I numbered 9 sound effects from sound program.

Sound that I made consists of three tracks. Each track lists many parts of sound, and I put a different effect on each part.

Nine elements applied to the sound program had to be applied to paintings. I decided to make three rules, so I needed three painting categories, which are location, shape/method, and direction.

**Location**

<table>
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<tr>
<th>1</th>
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<tr>
<td>4</td>
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**Shape/method**

1. Dot
2. A straight line
3. A curved line
4. Plane
5. Circle
6. Rubbing
7. Dripping
8. A roller
9. Fingers

**Direction**

1. East
2. West
3. North
4. South
5. Southeast
6. Southwest
7. Northwest
8. Northeast
9. Turn around
Effects 1. Amplify  
2. Change pitch  
3. Change speed  
4. Change tempo  
5. Distort  
6. Echo  
7. Fade in/out  
8. Invert  
9. Paul stretch  
The effects applied to each part are substituted into the element to be applied to the paintings.

Location  
1  2  3  
4  5  6  
7  8  9  

Shape/method 1. Point  
2. A straight line  
3. A curved line  
4. Plane  
5. Circle  
6. Rubbing  
7. Dripping  
8. A roller  
9. Fingers  

Direction 1. East  
2. West  
3. North  
4. South  
5. Southeast  
6. Southwest  
7. Northwest  
8. Northeast  
9. Turn around
Through this project, I realized that even if I react to the same soundscapes, the process, results, and also my movements are restricted. Since there are more rules that I need to follow, I realized that I was starting to focus on hearing what the rule is and not the sound track itself. Moreover, I felt nervous when I missed a rule. As humans are bound to have delays in the process of thinking, there is an obvious limitation in our ability to follow rules.

I examine the differences between humans and machines by performing the logic that machines follow. My work addresses the current impact of new technologies, such as artificial intelligence, on society and the arts. Through my projects, I have discovered that humans possess unique languages and expressive abilities that technology cannot fully recognize or replicate. My work highlights the importance of the delay in human receptive capacities and interpretations, which cannot be captured by machines.
I don't have to follow any rules while doing Painting no.01
I should follow 1 rule: location while doing Painting no.02
I should follow 2 rules: location, shape/method while doing Painting no.03
I should follow 3 rules: location, shape/method, direction while doing Painting no.04

* It's a script that simplifies what I have to move on canvas or do based on the rules.
The Mechanization of Human beings

Memories of teenager

There is an apple, a bottle of water, a sculpture, and a teddy bear on the table. There’s a drawing test: I have to draw all of these objects in 5 hours on one piece of paper with a pencil. The only sound that I can hear is the sound of pencils others are using and their breath. After 5 hours, we take a short break, and then we wait for the results. The drawings are placed on the floor by grade from A+ to F. I remember the day I smiled and cried after knowing the results. Drawing skills, composition, and details were classified into good drawings or bad drawings in just five hours. I needed to decide what to draw and how much I would draw in a short time. Moreover, I needed to take care of my health because the result was judged in one day. One day my teacher scolded me because the circle that I drew was not perfect. He gave me an assignment to draw one hundred perfect circles in front of a classmate. That memory is one of my most embarrassing. I remember that I was a student that could draw things as they were. However, my teacher told me that I needed to stop depicting and focus on drawing quickly. After I kept practicing drawing fast, he told me that I need to bring my description skills to the drawing. However, by then I had already forgotten how to draw. I thought this was normal because it is the only way to test in art high schools and universities in South Korea. We were rehearsing in an environment like a real test. So while preparing for a test for university, I thought of myself as a machine that followed the rules that society made. I could not give up because I wanted to go to a university that I admired. The more I practiced, the more my intuition disappeared.
I defined my early twenties as a time of evasion. I was a person who was used to comparing myself to people around me and was exposed to social media from a young age. I wanted to vaguely fit myself into the standards of beauty defined by society. In an era when small faces and skinny bodies were in the spotlight, I refused to eat what my instincts wanted and often canceled meal appointments with people to lose weight and avoided time with my family. The moment I regretted it was after I lost weight because even though I had the body I wanted, I was not happy and I wanted to hide that body. I realized that I was forcing myself to fit the beauty that society implicitly defined.

Building on this inquiry, I represented people living in accordance with the implicit rules set by society. This process of conforming to societal norms can be seen as a metaphorical “translation of substitution” where one’s unique perspective and intuition are replaced by the standards set by society. This can be detrimental to our creativity and sense of self. Therefore, I encourage not only myself but also others to question the rules and standards we follow in our lives.

The way of translation that I chose is movement into each note of existence notation. Just as the piano notes are played according to the notation, my movements are also played in a set order. Just as music is played by the rule of notation, three of my physical movements exist by implicit rules. I frame these notations as a rule and movement as a human following the rule. Like musicians interpret this music according to their style, I reinterpret this piece with movement.
F7#  G7  G7#  A7  A7#  B7
I reinterpreted existing classic music such as *Nocturne op.9 No.2* by Frédéric Chopin in three channels of movements. The three channels – exercise, gymnastics, and facial massage – are all meaningful in building up the body. For gymnastics, I reproduce the Korean variety. National Gymnastics is a form of the sport that has been distributed by the South Korean government since 1977. It is been over twenty years and I remember all of the students gathering in the playground of school and following a teacher doing it every monday, no matter what the weather was. At that time, I often had to do it even though I did not want to do it, and felt like a machine when following the instructions. While reproducing gymnastics, I realized that I remember every detail of it even though I have not done it for a long time. For exercise and facial massage, I expressed the implicit rule of standard of beauty that people assume. There is a lot of social media promoting plastic surgery in South Korea and can easily find plastic surgery hospitals on every other street. I found that a lot of people, especially teenagers and twenty-year-olds, try to lose weight and do plastic surgeries abnormally in pursuit of a perceived beauty standard. They are inclined to disparage themselves while comparing their body and appearance to others or to celebrities. I think this tendency is raised from a fast-paced social phenomenon: as the impact of social media service on the trend of showing off consumption is becoming significant, we are likely to be affected by it. My work represents individuals living in such a society.
Each movement of the three-channel performance substituted the eighty eight notes of the piano. To clarify, I divided each movement into eighty eight, just as the number of piano keys. Then, I assigned a number to each movement. Finally I substituted my movements corresponding to each note in Chopin’s notation. I substituted the notation into three channels, which is exercising, gymnastics, and facial massages. Through this process, I want to talk about the implicit stereotype of beauty created by society. I express the appearance of humans operating according to the given rules like a machine doing a given task through my movements.
One of the key philosophical perspectives that informs my work is the idea of embodiment, which explores how the movements and instructions are interconnected and how they shape our experiences of the space. By exploring the relationship between the body and space in my project, I attempted to highlight the embodied nature of human intuition and how it is affected by changing the shape of spaces and the attendant rules of engagement.

Inspired by the work of Bruce Nauman and his piece *Dance or Exercise on the Perimeter of a Square (Square Dance)* (1967-1968), I embarked on a creative exploration of movement and space. By marking out shapes in a given space, I took on the role of an interpreter, allowing myself to freely translate these shapes through movement. To engage with the space and its shapes, I provided myself with specific instructions, providing a framework for my movements.
However, the true essence of the interpretation lay in the potential for variation and deviation, as each individual’s unique understanding and expression of the shapes was allowed to flourish. As I progressed through each experiment, new challenges were introduced in the form of rules and restrictions. These changes served to further stimulate and engage my creativity, forcing me to adapt and evolve my movements in response to the ever-changing parameters. The addition of larger or smaller shapes at regular intervals within the space served to further heighten the mechanical and ephemeral nature of my movements, creating a dynamic interplay between my body and the minimal shapes.

Moreover, there was another controlling element: time. Absolute time became a tool to measure the performance of rules. There was an instruction on each series of experiments, and new rules related to the space were added after each individual experiment. The result was decided in real time, in the present, when the experiment was happening, depending on the interpreter. In each instruction, intuition functioned as the primary force because the direction and gesture of movement was decided in a second. On the other hand, I could break the rules, even if unintentionally because the determination of direction and reaction of my body would differ according to a rule and myself. For example, even if I moved in the same direction, the movement and speed could be slightly different. Additionally, since adding a rule meant there were more things to keep in mind, my movements were certainly restricted. I wanted to compare the difference in the reaction of my movement according to the number of instructions. Moreover, I wanted to explore the differences between repeated rules.
Even though I filmed my movements with videos, I captured every second and exported them as a still image. In this project, I thought the most important thing was how to show all my movements. The outcome followed Eadweard Muybridge’s framing, who is best known for his photographic studies of locomotion of humans and animals. In the work *Horse and Rider Galloping* (1883–1886), we can feel the motion and gesture easily even though his work is a static photograph. I also wanted to make it possible for viewers to see all my movements at a glance. I aligned the movements of every second to show those that change according to the rules.

After completing the work, I proceeded to translate each movement into graphical representations using lines and dots, based on the skeleton of each second’s movement. The objective of this process was to uncover the subtle differences between each movement through a distinctly visual medium. The graphical representations allow viewers to discern minute differences in movements that may not have been easily detectable through other means. This process involves comparing each movement through simple geometrical shapes, reminiscent of glyphic letters.

In addition, each graphic was further translated into sound. I let a sound program perceive an image, and generate sound based on the dots of a skeleton. I converted every experiment to sound, comparing how the sound differs when movement changes. By using mechanized sound, I could let the viewer recognize the process of mechanizing human beings, not only visually but also audibly.
Experiment 01.

1. Go into the square and walk counterclockwise.

2. Do not cross the innermost line of the square.

3. Start point: right outer corner.

4. Time: 60 seconds.
Experiment 02.

1. Go into the square and walk counterclockwise.

2. Touch the wall every time you walk.

3. Do not cross the innermost line of the square.

4. Start point: right outer corner.

5. Time: 60 seconds.
Experiment 03.

1. Go into the square and walk counterclockwise.

2. Touch the wall every time you walk.

3. Walk across the x-shaped line.

4. Do not cross the innermost line of the square.

5. Start point: right outer corner.

6. Time: 60 seconds.
Experiment 04.

1. Go into the square and turn your body.

2. Touch the wall every time you turn.

3. Do not cross the innermost line of the square.

4. Time: 60 seconds.
Experiment 05.

1. Go into the triangle and walk.
   2. Touch the wall every time you walk.
   3. Do not cross the outermost line.
4. Start point: right outer corner.
5. Time: 60 seconds.
Experiment 06.

1. Go into the triangle and walk counterclockwise.
2. Touch the wall every time you walk.
3. Do not cross the outermost line.
4. Start point: right outer corner.
5. Time: 60 seconds.
My work in this project began with a desire to explore the theme of the “mechanization of human beings” through the conversion of movement into alternative forms of expression. I wanted to suggest the coexistence of humans and machines. My question was “how do machines conceive my movement in the physical world?” Drawing inspiration from my previous artistic endeavors and this question, I decided to employ a motion capture system to record the essence of my movements. The system allowed me to convert these recordings into a digital skeletal structure, essentially mechanizing the organic movement of the human body. Using the 3D software, Cinema 4D, I then overlaid a rudimentary figure over the skeletal structure, transforming my movements into a machine-like, geometric form. It generated my movement in unexpected ways, squeezing and twisting the forms into a curious exploration of the time and space of experimentation.

Next, I decided to bring this movement back into the physical world by converting this movement into a flat image, exporting an image for every second of each movement. Moreover, I combined every image into one, illustrating the compression of time across all of my movements.
I wanted to reveal the relations between the way humans and machines see. Through the interaction of both, I wanted to suggest the possibility of the coexistence of the two. To do this, I combined what was done by the machines with that of the humans. I then made new layers based on what the machine made. The machine’s process is made by laser cutting, pen plotter, or 3d printing. The human’s process is made by hand drawing, digital painting, and collage. With the resulting converted shape, made by the machine, as my canvas, I transferred the output from 3D to 2D, enabling me to explore the possibilities of painting with my intuitive senses.

In essence, my process involved a fusion of technological tools and intuitive expression. Through my project exploring the “mechanization of human beings”, I aimed to delve deeper into the concept of coexistence between humans and machines. By using motion capture technology to record and convert my movements into a digital format, I was able to create a hybrid form that combined the organic with the mechanical.

With the interpretation of how machines perceive my physical movements and my own intuitive response, I sought to explore the possibilities of cocreation between humans and machines. By combining the outputs of the machine and the human processes, I aimed to suggest a new way of approaching art, one that is not limited by traditional methods of creation. Ultimately, my goal was to encourage a greater appreciation for the potential of technology as a creative tool and to emphasize the importance of maintaining a balance between the organic and the mechanical in our ever-evolving relationship with machines.
Experiment 01.
Experiment 02.
Experiment 03.
Experiment 05.
Experiment 06.
Conclusion

In my artistic practice, I delve into the mechanization of human beings and the potential impact of technological advancements on the artist profession. Employing a diverse range of mediums, I endeavor to provide a multi-dimensional perspective on the subject, illuminating the intricacies and complexities that cannot be fully conveyed through a singular mode of expression. By underscoring the significance of human intuition and decision-making capacities, I aim to underscore the distinct qualities that differentiate humans from machines.

As technology progresses at an unprecedented pace, it is clear that machines cannot replicate every aspect of the human experience.

My research contributes to the ongoing discourse surrounding the role of humans in an increasingly technology-driven world. Through exploring the nature of intuition and human creativity, I aspire to offer a novel perspective on the importance of preserving humanity amidst the proliferation of mechanization. Ultimately, my goal is to catalyze further introspection and dialogue about contemporary society’s relationship between technology and humanity.
Furthermore, my research highlights the potential risks associated with overreliance on technology and the potential loss of skills and knowledge that are unique to human beings. While machines can perform many tasks with greater efficiency and accuracy, they lack the capacity for creativity, empathy, and intuition. As such, it is essential that we recognize and value the role of humans in fields such as the arts, where these qualities are highly valued and integral to the creative process.

Moreover, my artistic practice emphasizes the importance of collaboration and interdisciplinary approaches to problem-solving. By working with individuals from different backgrounds and fields, we can develop innovative solutions that incorporate the strengths of both humans and machines. This approach can lead to breakthroughs in fields such as medicine, engineering, and the arts, while also ensuring that the distinct qualities of humans are preserved and celebrated.

In conclusion, my research and artistic practice aim to raise awareness about the complex relationship between technology and humanity. By examining the mechanization of human beings and the impact of technological advancements on creative professions, I hope to inspire further discussions and reflections about the importance of preserving human qualities in an increasingly technology-driven world.
Experiment 01.

1. Go into the square and walk counterclockwise.

2. Do not cross the innermost line of the square.

3. Start point: right outer corner.

4. Time: 60 seconds.
1. Go into the square and walk counterclockwise.
2. Do not cross the innermost line of the square.
3. Start point: right outer corner.
4. Time: 60 seconds.
1. Go into the square and walk counterclockwise.
2. Do not cross the innermost line of the square.
3. Start point: right lower corner.
4. Time: 60 seconds.
Experiment 02.

1. Go into the square and walk counter-clockwise.

2. Touch the wall every time you walk.

3. Do not cross the innermost line of the square.

4. Start point: right outer corner.

5. Time: 60 seconds.
1. Go into the square and walk counterclockwise.
2. Touch the wall every time you walk.
3. Do not cross the innermost line of the square.
4. Start point: right outer corner.
5. Time: 60 seconds.
1. Go into the square and walk counterclockwise.
2. Touch the wall every time you walk.
3. Do not cross the innermost line of the square.
4. Start point: right outer corner.
5. Time: 60 seconds.
Experiment 03.

1. Go into the square and walk counterclockwise.

2. Touch the wall every time you walk.

3. Walk across the x-shaped line.

4. Do not cross the innermost line of the square.

5. Start point: right outer corner.

6. Time: 60 seconds.
1. Go into the square and walk counterclockwise.
2. Touch the wall every time you walk.
3. Walk across the x-shaped line.
4. Do not cross the innermost line of the square.
5. Start point: right corner center.
6. Time: 60 seconds.
1. Go into the square and walk counterclockwise.
2. Touch the wall every time you walk.
3. Walk across the x-shaped line.
4. Do not cross the innermost line of the square.
5. Start point: right outer corner.
6. Time: 60 seconds.
1. Go into the square and turn your body.

2. Touch the wall every time you turn.

3. Do not cross the innermost line of the square.

4. Time: 60 seconds.
1. Go inside the square and turn your body.
2. Touch the wall every time you turn.
3. Do not cross the outermost line.
4. Time: 60 seconds.
1. Go inside the square and turn your body.
2. Touch the wall every time you turn.
3. Do not cross the outermost line.
4. Time: 60 seconds.
1. Go into the triangle and walk.

2. Touch the wall every time you walk.

3. Do not cross the outermost line.

4. Start point: right outer corner.

5. Time: 60 seconds.
1. Go into the triangle and walk.
2. Touch the wall every time you walk.
3. Do not cross the commence line.
4. Start point: right corner corner.
5. Time: 60 seconds.
1. Go into the triangle and walk.
2. Touch the wall every time you walk.
3. Do not cross the outermost line.
4. Start point: right outer corner.
5. Time: 60 seconds.
1. Go into the triangle and walk counterclockwise.

2. Touch the wall every time you walk.

3. Do not cross the outermost line.

4. Start point: right outer corner.

5. Time: 60 seconds.
1. Go into the triangle and walk counterclockwise.
2. Touch the wall every time you walk.
3. Do not cross the outermost line.
4. Start point: right outer corner.
5. Time: 60 seconds.
1. Go into the triangle and walk counterclockwise.
2. Touch the wall every time you walk.
3. Do not cross the outermost line.
4. Start point: right outer corner.
5. Time: 60 seconds.