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Capstone II

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Capstone Project Statement

**Title**: *A Reflection on Lookism*

**Abstract**

Inspired by the cultural phenomena of *lookism* and *gwansang*, *A Reflection on Lookism* serves as a medium for users to question the significance of appearance in their daily-lives and attitude towards themselves. *Lookism* is appearance-based discrimination, while *gwansang* is Korean face fortune telling. Both are significant cultural aspects of South Korea, and I was particularly moved by the irony of the connection between the two. People feel the need to succeed and believe they need to meet specific beauty standards to do so. As they undergo cosmetic procedures to improve their appearance and seek reassurance that their looks will be good enough to be accepted into society, face fortune tellers cannot reaffirm this fortune as their natural faces have been altered. I convey this irony through an interactive face fortune telling reading/plastic surgery consultation. The installation is a tent that is meant to mimic a fortune telling stall in South Korea, but with a more "high-end" atmosphere to give the professional feel of a clinic consultation.

The reason I combine both a clinic and stall is because when I enter fortune telling tents in Korea, there is a subtle feeling of hesitation mixed with excitement because fortune telling, I believe, is mysterious in itself. As for the hesitation, trying to experience something that is so

"powerful" and mystifying in such an unexpected tent seems slightly off-putting. I wanted users to feel this emotion to capture the fortune telling experience. On the other hand, I also wanted to recreate the separate set of feelings when entering a medical clinic. I personally find going to a regular doctor intimidating at times. Everything is so pristine and you're suddenly aware of all the health and medical knowledge that you know and your own lifestyle habits. I want users to also feel this type of uncertainty that I feel when I go to medical clinics.

As users walk into the tent and state what aspects of their life they want to improve (ie: wealth, relationships, etc.), they are guided to manipulate different facial features to achieve these improvements. The before-and-after images taken of their face showcases their normal face with "poorer" fortune, and their contorted face with greater fortune. The way I achieve these functions is through HTML and a face recognition software. A picture of the user's face is taken after they make the recommended facial movements. After users interact with my project, I hope they can reflect on society's impact on their self-image and the ways in which we connect beauty with success.

**Context**:

The topic of lookism was first introduced to me through a Webtoon comic, *Lookism*, written by Park Taejoon (Park). *Lookism* is a story about an "unattractive loner guy" who wakes up one day in a handsome, strong body (Park). Certain plotlines or chapters in the comic brought light to the double-standards "uglier" people confront in society, and the benefits "beautiful" people reap in comparison. Growing up Korean-American, I was always aware that Koreans placed heavy importance on appearance and beauty. However, I was surprised to see my

observations acknowledged by the subtle social commentary on Korean's vanity by a native
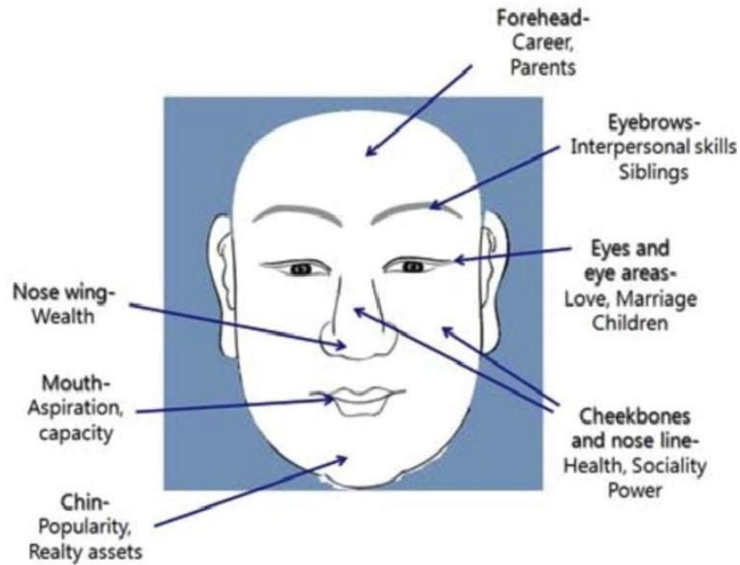
Korean.



Img 1. The main protagonist and his new body in *Lookism* (Source:

https://www.webtoons.com/en/drama/lookism/list?title_no=1049&page=1)

After doing more in-depth research on appearance in South Korea, I found numerous

articles from both credible news sources and casual Korean culture sites describing the high rates

of plastic surgery that occur in South Korea. The most influential source, for me, that

emphasized how prevalent lookism is in Korea is an article written by Kasulis in *Pri* (Kasulis).

In South Korea, people can find online forums that give applicants advice on what specific

appearances certain companies prefer for their candidates, such as long-hair, light make-up, etc.

(Kasulis). The main point of the article was to write about South Korea's new "blind hiring"

laws to help fight against invasive personal questions in the hiring process. An interview with a

Korean woman reveals that there are still many persistent negative issues in the hiring process,

such as corrupt hiring processes, family connections, and one's appearance. This article is one of

the major motivations for wanting to educate others on this topic and to spread awareness of it.

Regarding fortune telling, I was also somewhat aware and exposed to that area, but never

saw formal texts explaining the phenomenon. My only inkling that fortune telling was significant

in Korea comes from my personal experience of my mother consulting fortune tellers frequently, and from my time in Korea, seeing the prevalence of fortune telling stalls. My research led to an article in *The Economist* that indicates that fortune telling is indeed a huge business in South Korea. In 2018, the South Korean fortune telling business was estimated to soon be worth around $3.7 billion (South Korea Fortune-Telling).

Seeing clues that fortune telling did have major significance in South Korea, I decided to look into understanding how fortune telling works, and chose gwansang since I was aware of its existence from my own personal face reading in the past. I found an article written by Janet Shin in the KoreaTimes. Janet Shin is a renowned face reader and in the article, she explains how the practice works, and general rules about the face to follow when giving face readings. She writes that Asian scholars have considered humans extremely precious creatures. "The head symbolizes heaven… two eyes represent the sun and the moon, blood is a river, bones are rocks and stones, a nose and forehead (those protruding parts) are mountains and hairs are plants and trees" (Shin). The face is the most important part of the body, so it was believed that people can read their destinies from it (Shin). It was also believed that the face can be changed by environmental factors, lifestyle, and mindset. Thus, we can manipulate our destinies (Shin). Shin also provides a basic chart describing basic facial features and their meaning, which is shown in Img. 2. I decided to utilize the eyebrows and eyes information from this chart, since I believe many people are interested in love, marriage, and their interpersonal relationships.

Img. 2 Image of Korea face fortune telling diagram (Source:

http://m.koreatimes.co.kr/phone/news/view.jsp?req_newsidx=95733)

There is a lot of variance in fortune telling. According to my mother, who has interacted with many fortune tellers, many of these fortune tellers can either self-teach themselves from Chinese books describing the practice, or simply learn it from their family if their family has been practicing fortune telling for a long time. Thus, depending on the source they learned from, there can be some small differences in how faces are read. Because my mother is invested in fortune telling, I have gained some knowledge about facial readings from her, as well as from my reading experiences. Depending on the feature that is being focused on, readings are given based on size, shape, position on the face, and/or the color. There is a large emphasis on balance and even proportions. For example, eyebrows cannot be too far apart, yet they cannot be too close to each other either. During my own reading years ago, I was told that the nostrils of the nose indicate one's wealth. Money "flows" from the nostrils, thus nostrils should not show too much, otherwise money will flow out of your life. At the same time, your nostrils cannot be hidden

completely, otherwise you will be stingy and that is bad fortune. Another part of the reading I

remember is that the lips represent one's popularity. Lips should not be too pale, nor too red. As

for the size, a larger bottom lip may indicate more sociability and popularity. I distinctly

remember the reader stating "look at all the popular celebrities. You will notice that most of

them have larger bottom lips". Img. 3 shows renowned singer and actress, Im Yoona. Her looks

are considered one of the classic ideal beauty standards for women in Korea. Her facial

proportions and specifically her lip size indicates popularity and sociability.  These examples

exemplify some basic aspects of a reading. For the sake of my project, I decided to follow a mix

of both Shin's rules and knowledge from my own personal experience.



Img. 3 Im Yoona (Source: https://en.wikipedia.org/wiki/Im_Yoon-ah)

Because both gwansang and surgery are focused on the face, I thought there must be a

connection between the two and found an article that shows an intriguing connection. Because of

the growing number of people receiving plastic surgery, face fortune tellers are finding it

increasingly difficult to give proper readings (Strother). I find it fascinating that people physically altering their face is having an impact on a business that one may not typically associate with the medical and plastic surgery industries.

I was still left to wonder why people go to fortune tellers so frequently. I reflected back on the reasons my family goes for readings. Although there are times we would get readings for entertainment, they were predominantly motivated by our concerns with life, thus we would seek out readings as some form of reassurance.

A study conducted to test whether social interactions with strangers have a positive influence on a person showed that even short conversations with strangers (store cashiers) had a positive influence on a person's mood (Sandstrom). Thus, one may conclude that interactions with a fortune teller would have positive effects on mood just due to the conversational contact. Beyond the economic influence that appearance and fortune telling have on each other, there is also a psychological and social impact that connects the two even further.

The research from those sources demonstrates that fortune telling and plastic surgery are more closely intertwined than one may initially realize. As for my project's form and content, these sources provided the detailed framework for how my project is designed and operated, and guided how I wanted my user experience to flow so that people who interact with my project can more thoroughly understand and feel the emotions that I felt upon learning this information also.

**Project Design & Production**

In the beginning of the fall 2019 semester, after completing the research phase, my main priority was to focus on the coding aspect of the project. My capstone can be divided into four

work phases: motors that react based on the facial movements made by the user, the facial feature recognition code, website and modifications, and the physical tent.

### 1. Motors

After finishing the planning stage, my first priority was to get a motor to spin based on some form of input from HTML code. The reason I wanted to incorporate motors was because I feel that when interacting with certain projects, there's something "magical" about being able to interact with a physical object, hands-free. Also, when getting tarot card readings in the past there was something further mystifying knowing there were physical objects (in this case cards) that supposedly held answers to my future. Thus, I thought motors would be both good visual feedback and a medium to add to the mysterious atmosphere of a reading.

Much of what I learned in Interaction Lab was useful for this area of the project. I had an Arduino kit that held all the wires, resistors, etc. for me to test motor interaction, and I coded the interaction in Arduino.

### a. Serial Communication between p5.js and Arduino

To transition to a serial connection from the web, I used an online tutorial "Lab: Serial output from P5.js" (Igoe) and advice from IMA Fellow Tristan Armitage. This tutorial showed how to control an LED's brightness based on your mouse position on a webpage, and the necessary programs needed to have serial communication between p5.js and Arduino.

In order to properly serial communicate between p5.js and Arduino, you need the following Arduino, a text editor (I chose Atom), a laptop, and the p5.serial downloadable program.

###### b. Building the Motor Circuit

With successful communication occuring with the sample code, I proceeded to write the proper code for Arduino and p5.js. I first focused on the Arduino code because it was simpler. You need the following materials to create the motor circuitry:

Materials

- 4 bipolar stepper motors
- Jumper cables
- 5 button switches
- 5 10k resistors
- Arduino
- Breadboard
- 12V power supply
- 12V jack

I followed the Stepper motor reference on the Arduino website (StepperSpeedControl) and followed the explanations there to not only properly set up the motors, but to also write the correct code. I wanted my stepper to make several revolutions, rather than spin only halfway or once. I made sure to create a variable to represent the number of revolutions wanted and used that in the Arduino code that responds to the information from the serialp5.js connection using Serial.read.

###### 2. Facial Feature Recognition Code

Another component of the project is to have a picture taken of the user's face after the motor revolutions, which requires reverse serial communication using Serial.write to p5.js. At this point of the project, I had the essential code and movements working for the motors, however my final project does not have this part for reasons I will explain later in the paper.

Once I completed the motor functions, I began to focus on the face motion tracking code. I consulted Professor Moon Junghyun at IMA to see what would be the best way to approach facial tracking code. He showed me a program he wrote that was based on code authored by Kyle McDonald (McDonald)**;** a face tracking system that is facial-feature specific. The link to the original source is below:

https://github.com/kylemcdonald/AppropriatingNewTechnologies/wiki/Week-2

### a. Tracking Facial Movement

There were very few modifications made to that face-tracker. I removed its visual display so that the user was not distracted by a display. I consulted IMA fellow Konrad Krawczyk for advice on tracking changes in facial feature position. His suggestion was to track the distance between specific features on the face. So, for example, one could identify the distance between a specific point on one's eyebrow, and the pupil. Then, calculate a ratio of this distance to a known, consistent distance. Once the face moves, this ratio will change. One can program responses or actions that depend on a threshold of this ratio. For example, if ratio > .3, make a change. I decided that calculating changes in distances of facial points to be a good way to give readings because in actual readings, distances and positioning of facial features are taken into consideration.

### b. Webcam Image Capturing

The final part of the facial code was to create a webcam capture after the facial change was held for a long enough time. I found a Coding Train tutorial for how to create an image from the webcam (Shiffman). The link is below:

https://www.youtube.com/watch?v=bkGf4fEHKak

To use this code along with the face recognition code, one needs to modify its createCapture function to use the face recognition webcam capture.

By the end of the fall semester, I had motors that moved when you manipulated your, and images were taken when you moved them.

### 3. Tent Building

Since I spent the first half of the year getting the basic coding functions to work, the rest of my project was focused on building the tent, working out details of the installation experience, and fine tuning the coding.

### a. Tent Design

I decided to make a white and blue color scheme for my clinic, since a majority of other plastic surgery clinics in Korea had simple, clean color palettes. As for the materials, I would need to find/create other objects such as a sign that has the clinic name, my computer, facial diagrams and charts, and old books to further establish that although the atmosphere is supposed to be a clinic, there are still elements of face fortune telling.

Winter break was spent sourcing materials for the installation. Initially, I was under the impression I would be returning to NYU Shanghai to continue working on my capstone, however circumstances changed due to the coronavirus. Thus most of my sourcing for materials

in China had to be changed to materials I could buy in the United States. With the capstone

funding budget, I was able to buy the following materials. A majority of these materials listed

were found on either Amazon or Walmart. Other materials such as the tarp or table were found

on websites specializing in such material or cheap resale sites.

Materials

- A white 6x6 foot tent

- Tarp for the sides of the tent

- A blue table cloth

- One metal white stool for the user to sit on

- One foldable table

- One white lab coat to wear as I give consultations

- Printed out posters of various face fortune telling-related diagrams

- Book, laptop, pens, and mirror for props

**b.   Rationale for Tent Design**

The installation is a tent that is meant to mimic a fortune telling stall in South Korea, but

with more "high-end" decor to give the professional feel of a clinic consultation. I felt that the

tent would induce the mystery of fortune telling that attracts users, but the smaller, more

professional details would distinguish the experience as a more refined consultation.

**c. Surgeon/Fortune teller Role**

In my tent installation, I myself play a role as the surgeon/fortune teller. I thought it was

crucial to have a live person giving these readings because fortune telling and medical

consultations are very personal topics. When you seek these consultations, you are accepting a

level of vulnerability. You're aware that the professional in front of you has vast knowledge beyond your own, which can be intimidating. This intimidation and awareness, I believe can sometimes create some insecurity, especially when it's regarding your health, future, and/or appearance. So, I hope through these design choices I can recreate a mix of both emotions.

### d. Pamphlets

After acquiring the materials and planning the design of the tent, I decided to create a pamphlet. Many clinics in South Korea have informational pamphlets to provide the clinic's qualifications and procedures. I decided to create a pamphlet to not only add details to increase authenticity, but also because much of my project is dependent on understanding the context surrounding it. Thus, the pamphlet gives a brief explanation of both lookism, face fortune telling, and the main point of my project that draws the connection between these two phenomena.

First, I spent some time researching what medical clinic pamphlets look like, to get an idea of what type of design elements were commonly used. They tend to be very simple and clean. There are no crazy, striking colors or designs. After this bit of research, I decided to use Adobe Illustrator to create the pamphlet, with its catalog of pamphlet templates. I chose a template that fit the trends of actual medical clinic pamphlets. Because my clinic's main colors are blue and white, I made a lot of the font and color decisions for the pamphlet based on that. I googled images that were relevant to the topic such as before and after images, images of fortune telling stalls, and gwansang charts.

### e. Translating the Pamphlets

Once I completed the pamphlet, I decided to translate the pamphlet into both Korean and Chinese. As a Korean plastic surgery clinic, it is appropriate to have a Korean language version

for authenticity. As for the Chinese language rationale, a large number of Korean clinics' patient demographic come from China. Many Chinese tourists are interested in Korean culture and hear of the plastic surgery success stories from there. I reached out to a former Chinese teacher who translated my English pamphlet, and I consulted my father to create the Korean version.

## 4. Website and Project Changes

### a. Removing the motors and Modifying the Facial Recognition Code

As I completed the pamphlet and final tent design, I was prepared to work once again on the coding for the face recognition and motors. However, at this point in time, it was determined that students wouldn't be able to return to school and the capstone presentations would be virtual. Because I wanted the motors to be physical and in-person, I thought it would not be as impactful to keep them within the project if they were virtual. Thus, I decided to modify the project to be fully online, through a fake clinic website.

My first step was to adjust the facial recognition code so that it would not have serial communication involved. I removed all serial communication related code, and used the setTimeout and clearTimeout functions in Javascript to trigger the image capturing function. I also included a progress bar to let users know how long they had to hold their facial changes in order for the picture to be taken.

### b. Building the Website

I modeled the website after real clinic websites I found online. Most of them acknowledged the coronavirus pandemic in some shape or form, which I found interesting. Also, because my project had been so impacted by the virus, I felt that I should acknowledge it on my

website too. So, I framed the consultation as a "free virtual consultation" in compensation for temporarily closing the fake clinic.

In terms of coding the website, I continued using Atom, HTML, and CSS. I utilized Bootstrap for many elements of the website, such as image carousels, menus, etc. (Bootstrap is a HTML, CSS, and Javascript library and makes creating certain functions, or elements, such as image carousels, much simpler and easier.)

The website has a homepage, an "About" page to host the pamphlets and provide context for the project, a "Before and After" page to host sample images of previous "patients", and a Free Consultation page.

### c. Filming the Sequences

I wrote a script to create scenarios for the user's choice of readings: wealth, love, etc. After finalizing the scripts, I proceeded to build the tent. I was fortunate to have my family to help me assemble the tent, and aside from needing large-scale assembling, the rest was fairly simple and quick. Under normal circumstances, it would be preferable to have a tripod, audio recorder, and DSLR camera to record the scenes that would be used to make the virtual consultation. However, since I have been home because of the coronavirus, I do not have these resources so I simply used my iPhone to record. My sister did the recordings as I acted out the different scenarios and scenes. Because the clips are short, I was able to do the video editing within the Photos app on the iPhone since all that was needed was trimming the videos.

### d. Making the Consultation Virtual

I decided to make the virtual consultation into an interactive, clickable experience. I transferred the video clips to my computer and put them into the website. Each clip has its own HTML page and buttons are used to help users navigate through the different pages.

I used CSS to hide the buttons and other relevant elements when the video plays by using the CSS display: none setting. Adding a onended="nameOfFunction" to the video tags helps create a function that triggers the elements to display once the video has ended. This process is simply repeated for all the pages, with necessary adjustments to make it tailored for the specific page needs.

**Final Notes and Comments**

All the steps and parts mentioned above have led to a working project. The only remaining parts are to user test and make small modifications in certain areas that are finishing details.

As discussed earlier in this paper, if I or another person were to recreate this project, the areas I would recommend changing or rethinking would be the motors and website/filming aspects of the project. Preferably, there would be a live, in-person use of this project, and the website may or may not want to be kept. If it were to be kept, I would recommend using higher quality tools to keep the quality and experience of the consultation more professional and legitimate. As for the motors and live interaction, I believe it would be an enhancement of the project's purpose.

Annotated Bibliography

Igoe, Tom, and Yeseul Song. "Lab: Serial Output from P5.Js." *ITP Physical Computing*,

5 Oct. 2015,

https://itp.nyu.edu/physcomp/labs/labs-serial-communication/lab-serial-output-from-p5-js/.

"In South Korea Fortune-Telling Will Soon Be a $3.7bn Business." *The Economist*, The

Economist Newspaper, 24 Feb. 2018,

https://www.economist.com/asia/2018/02/24/in-south-korea-fortune-telling-will-soon-be-a-37bn-

business.

The article discusses the economic impact fortune-telling has on South Korea, as well as

the fortune telling culture in the country. There is further discussion on how automation is

influencing fortune telling. Because of the growing number of phone applications that offer

fortune telling services, real-life fortune tellers are finding that their businesses are facing a new

struggle. The article continues by describing how automation itself is beginning to influence

many industries and how these changes may impact fortune tellers long-term.

Kasulis, Kelly. "South Korea's New 'Blind Hiring' Law Bans Personal Interview

Questions." *Public Radio International*, 23 July 2019,

https://www.pri.org/stories/2019-07-23/south-koreas-new-blind-hiring-law-bans-personal-intervi

ew-questions.

The article offers insight into how lookism is impacting the corporate sphere in South

Korean society. An interview with a South Korean revealed the invasive and personal questions

job applicants often go through during the job application process. The interviewee also

mentions how competitive the job search process is, and how often times, these companies are

looking for attractive, extremely successful candidates and pictures are part of the requirement

for a job application. There is some effort by the government to alleviate this job pressure by

creating "blind hiring", which is essentially getting rid of the picture requirement. However, this

new rule would be difficult to effectively enforce because companies can find other ways to find

personal information and ask for images.

McDonald, Kyle. "Week 2." *GitHub*, 11 May 2017,

https://github.com/kylemcdonald/AppropriatingNewTechnologies/wiki/Week-2.

This GitHub repository holds lessons and example codes used to teach the class

Appropriating New Technologies. It outlines the basic principles behind using technology and

science behind face recognition programs. The repository also discusses the history and research

conducted for this topic.

Park, Taejoon. *Lookism*. Comic Strip. *Webtoon*, 2014. Online,

https://www.webtoons.com/en/drama/lookism/list?title_no=1049&page=10.

In a comic format, the creator writes a story about an "ugly and fat" nerd boy who

suddenly wakes up in a handsome, strong new body. He is able to switch back and forth between

the bodies depending on his consciousness. Through this storyline, the creator is able to

comment on the unfair treatment to those society deems as "ugly" and the amount of praise and

acknowledge those who are beautiful receive. However, as the story progresses, the main

character soon realizes that looks do not always dictate how others treat you. Rather, it is one's

personality and attitude that matters the most.

Sandstrom, Gillian & Dunn, Elizabeth. (2014). Social Interactions and Well-Being: The

Surprising Power of Weak Ties. Personality & social psychology bulletin. 40.

10.1177/0146167214529799.

The researchers behind this study wanted to test if even minimal social interaction with

strangers would have a positive effect on an individual. The researchers asked participants to go

into a cafe and have a genuine social interaction, such as a conversation, with the cashier and

then report their experience to the researchers afterwards. The results of the study showed that

even simple actions such as small-talk generated more feelings of belonging and increasing

feelings of happiness for the participants.

Shiffman, Daniel. "11.1: Live Video and createCapture() - p5.js Tutorial." *Youtube*,

uploaded by The Coding Train, 31 Mar. 2007,

https://www.youtube.com/watch?v=bkGf4fEHKak.

The online tutorial teaches viewers how to take a picture on the computer from the

computer's live webcam feed.

Shin, Janet. "Face Reading." *KoreaTimes*, 29 Sept. 2011,

http://m.koreatimes.co.kr/phone/news/view.jsp?req_newsidx=95733.

Janet Shin is a well-known face fortune teller and goes into detail about the main

principles behind Korean face fortune telling (gwansang), and also explicates some of the basics

regarding what facial features indicate which aspect of one's life or fortune.

"StepperSpeedControl." *Arduino*, www.arduino.cc/en/tutorial/stepperSpeedControl.

This reference page on the Arduino website serves as a guideline on the necessary materials  and resources needed to control the speed of a stepper motor.

Strother, Jason. "In South Korea, Fortune Tellers Face a New Wrinkle." *The Wall Street Journal*, Dow Jones & Company, 28 Apr. 2015. https://www.wsj.com/articles/in-south-korea-fortune-tellers-1430172769.

The article describes the struggles face fortune tellers in South Korea are facing in their jobs. Because of the large number of people who have undergone some form of plastic surgery on their face, fortune tellers feel that they are unable to give accurate fortune readings. The article proceeds to describe how prevalent plastic surgery is in South Korea, and also provides details on a few aspects of facial structure meaning in face readings.