CANDY SHOP: GETTING BACK WHAT YOU GIVE

A thesis project by Thalia Kassem
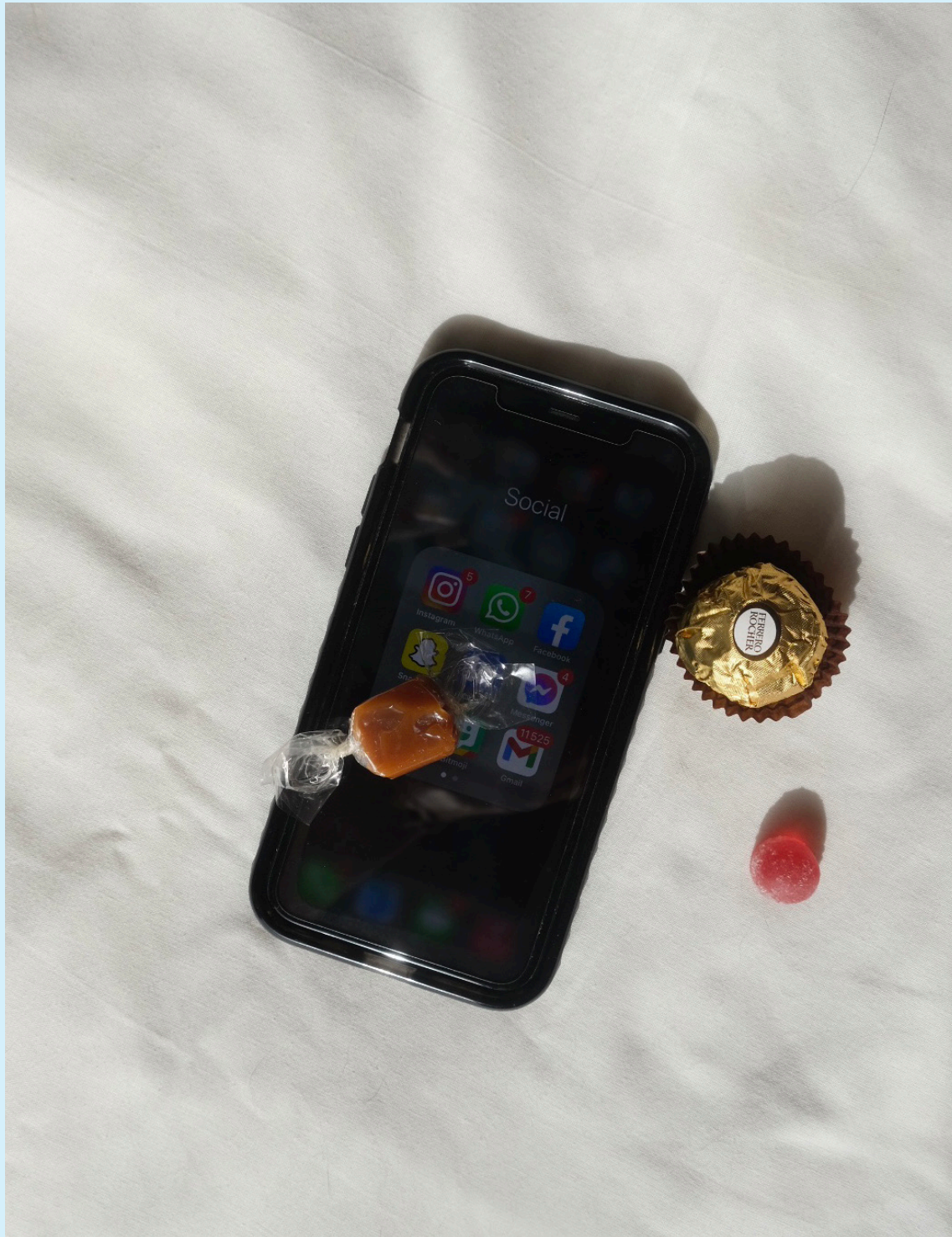
Parsons Paris 2020 - 2021
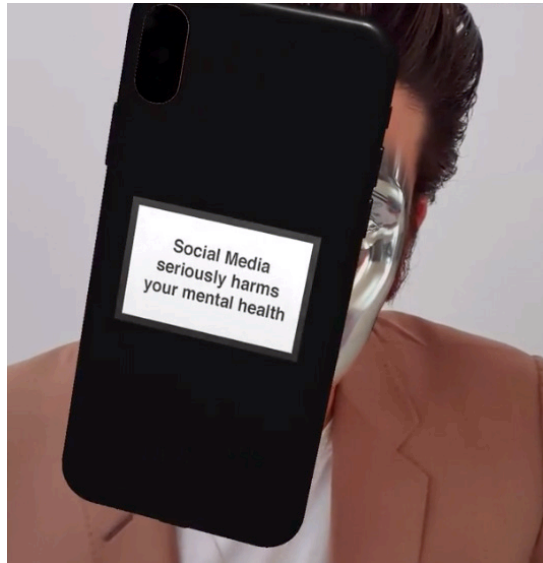
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1. THESIS STATEMENT

Candy Shop: Getting Back What You Give is an interactive installation communicating the lack of value social media companies accord to human life. As the number of social media users has drastically increased throughout the years, the reckless exploitation of the user's time has become pervasive in society. Social media companies manipulate as many users as possible into wasting as much time as possible on their sites in order to maximize their profits. The installation visualizes the revenues generated from the individual user's time spent on the platforms using candy. In contrast to these small amounts (at times fragments) of candy, large format illustrations of candy mountains representing the overall superfluous revenues generated by the companies on a daily basis hang on the walls of the installation. Candies operate as a metaphor for the unfair exchange between the companies and the users; they represent the toxic allures of these platforms, whilst also symbolizing the happiness stolen away from the users by the companies. *Candy Shop: Getting Back What You Give* was created in an attempt at making the users question their commitment to their screens.

2. ART AND DESIGN PRECEDENTS

Data Shop, Varvara & Mar, 2017

Untitled, Andy Picci, 2019

Untitled (Portrait of Ross in L.A),
Felix Gonzalez-Torres, 1991

Pharmacy, Damien Hirst, 1992

Throughout the ideation process, many artists have influenced the output of my project. In the Fall semester for instance, Felix Gonzalez Torres's candy pile installation has driven my work towards quantifying the physicality of the human body using candies, and creating a playful interaction with the audience. Soon after, I was inspired by Andy Picci's artistic interpretation of social media to create a fictitious nutrition facts label reflecting the harm the consumption of the platforms can do to our bodies. In the Spring semester, Varvara & Mar's *Data Shop* and Damien Hirst's *Pharmacy* helped me find the convenient aesthetics for creating a candy shop in the setting of an art exhibition.
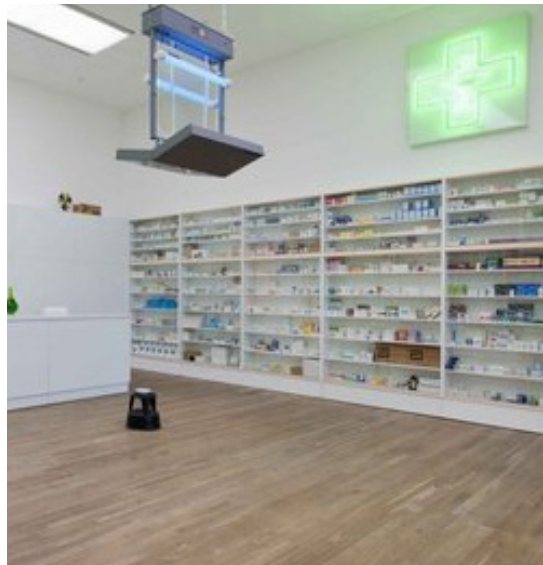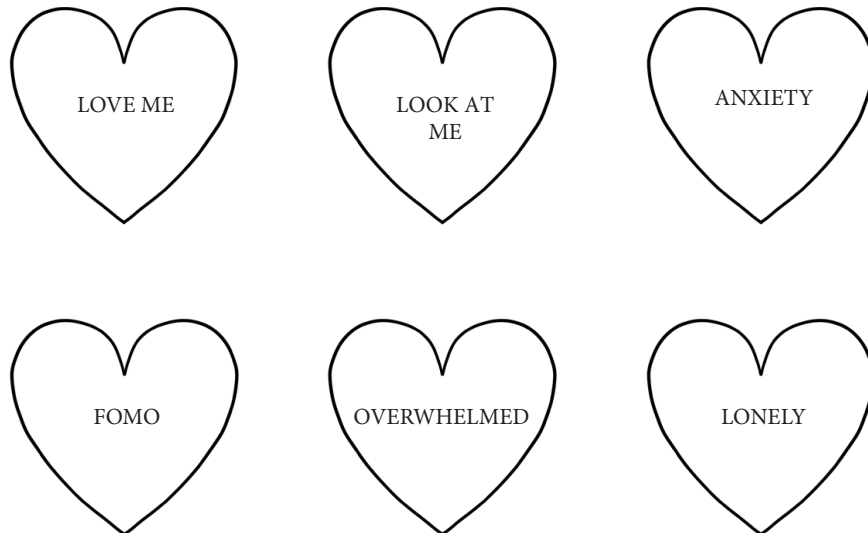
3. THESIS
PROJECT PROCESS
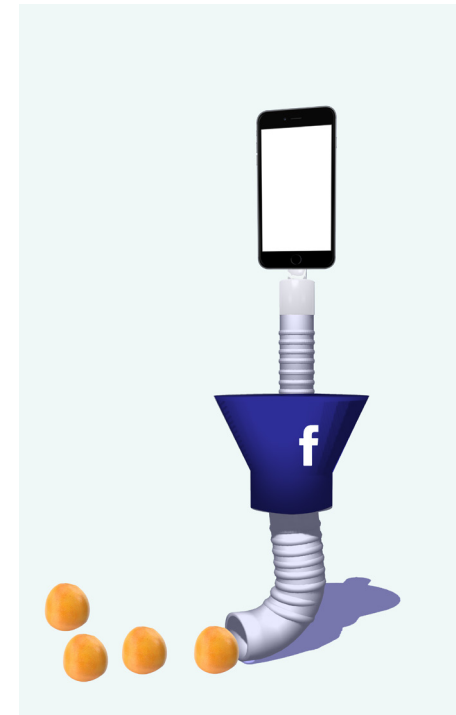
Sculpture no.1

During the first half of the Fall semester, my thesis project portrayed social media as both a system of consumption of ads and production of revenues for social media companies, and as a system of consumption of contents and emotional production. As a response, I have created two separate speculative sculptures tackling each aspect individually. Both aim at making the audience reflect the unfair exploitation of their well-being.

The first prototype portrays the idea that as we're consuming social media, we're generating revenues to the companies. The object is a functional data to food machine, turning advertising impressions into food social media companies can afford, with the revenue they have generated from the users' consumption. In my research, I had found that 500 impressions of an ad generate 3.35$ of profit to Facebook. Similarly, a pomelo fruit is sold at the same price in the supermarket. Therefore, for every 500 active users on Facebook, a pomelo would come outside the tube from the smartphone.
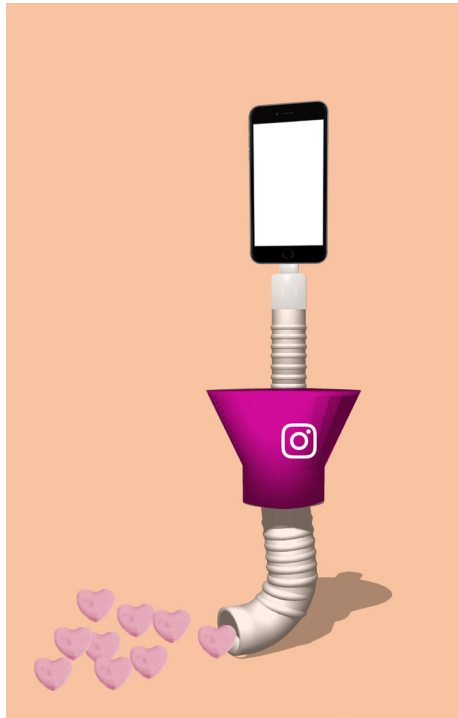
Unlike the first prototype, the second one isn't functional. It is a fictitious sculpture, illustrating the idea that when we consume the platforms, our bodies produce negative emotions. These emotions are represented with heart candies coming outside the tube, from the smartphone. After reflecting the overall output, I realized that having two separate sculptures as a creative response could complicate the user's understanding of the concept; a solution would be to merge both prototypes together.
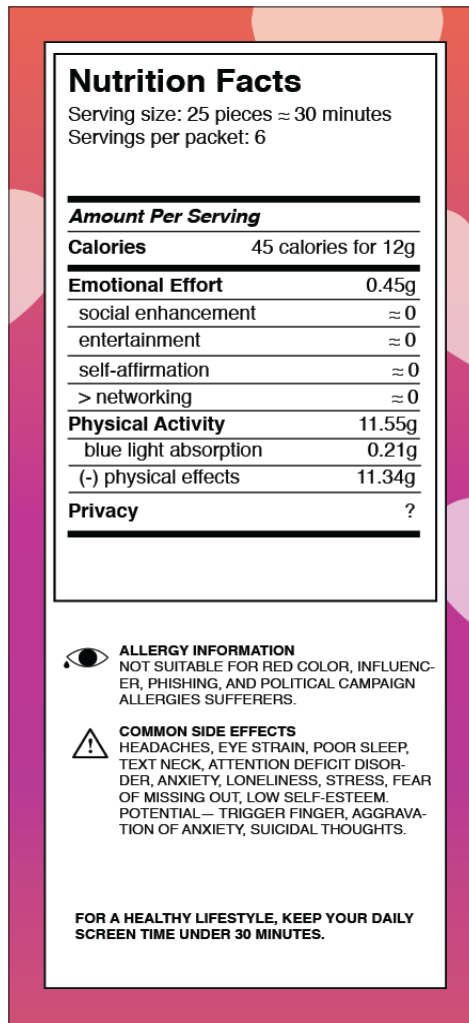
Hence, after midterm, I have shifted my thesis exploration to comparing the value of our time spent on social media to the physical and mental health effects it has on our bodies. My work became a data visualization, representing the accumulation of our time spent on social media in candy form. As a new artistic strategy, I compared social media consumption to candy consumption; both social media and candies are addictive, and both are unhealthy to our bodies when consumed in large amounts. I realized that combining the candy and metrics elements found within my previous prototypes could be conceptually powerful, and could solve the issue I was having with the previous output.

In my first data visualization prototype, I looked at the cost of the user's time in the attention economy using advertising revenues as a metric, and correlated it to the price of candy in the market. I found that three hours of the user's time has a value of 2 $ to Facebook. In the supermarket, 144 heart candies are purchasable at the same price. I have therefore created candy packets representing the accumulation of 3 hours of the user's time with 144 heart candies.

LOVE ME

LOOK AT ME

ANXIETY

FOMO

OVERWHELMED

LONELY

Sculpture no. 2

Front of box prototype

Nutrition Facts

Serving size: 25 pieces ≈ 30 minutes
Servings per packet: 6

Amount Per Serving	
Calories	45 calories for 12g
Emotional Effort	0.45g
social enhancement	≈ 0
entertainment	≈ 0
self-affirmation	≈ 0
> networking	≈ 0
Physical Activity	11.55g
blue light absorption	0.21g
(-) physical effects	11.34g
Privacy	?

👁 **ALLERGY INFORMATION**
NOT SUITABLE FOR RED COLOR, INFLUENC-ER, PHISHING, AND POLITICAL CAMPAIGN ALLERGIES SUFFERERS.

⚠ **COMMON SIDE EFFECTS**
HEADACHES, EYE STRAIN, POOR SLEEP, TEXT NECK, ATTENTION DEFICIT DISOR-DER, ANXIETY, LONELINESS, STRESS, FEAR OF MISSING OUT, LOW SELF-ESTEEM. POTENTIAL— TRIGGER FINGER, AGGRAVA-TION OF ANXIETY, SUICIDAL THOUGHTS.

FOR A HEALTHY LIFESTYLE, KEEP YOUR DAILY SCREEN TIME UNDER 30 MINUTES.

Back of box prototype

On the back of the packaging, the fictional calories and allergy notes reflect the harm the accumulation of time spent on social media can do to our bodies. The serving size of 25 candies corresponds to the recommended daily screen time of 30 minutes. When eating the recommended serving size, I would like my viewers to reflect that spending more than 30 minutes on social media is bad for their health due to the accumulation of calories. When the packet was shown to a witness, I noticed that he was overwhelmed by the amount of information he was reading on the label, and hence didn't understand my concept very well. My solution to this was to simplify the project by using scale as a communication technique.

Working with the same metrics, I tried to communicate the unhealthy accumulation of time spent on Facebook with a pile of candy viewers can eat from. The candies I used for the packets are tiny, this is why I switched to Haribo Tagada, as they're bigger in size. In order to make the work visually more powerful, I decided to represent a year-long of Facebook instead of 3 hours. Unfortunately, I observed that for a year long, a pile of 5467 candies wasn't visually impressive. Similarly, my project covers social media in general and not just Facebook, and I couldn't find all the metrics needed.
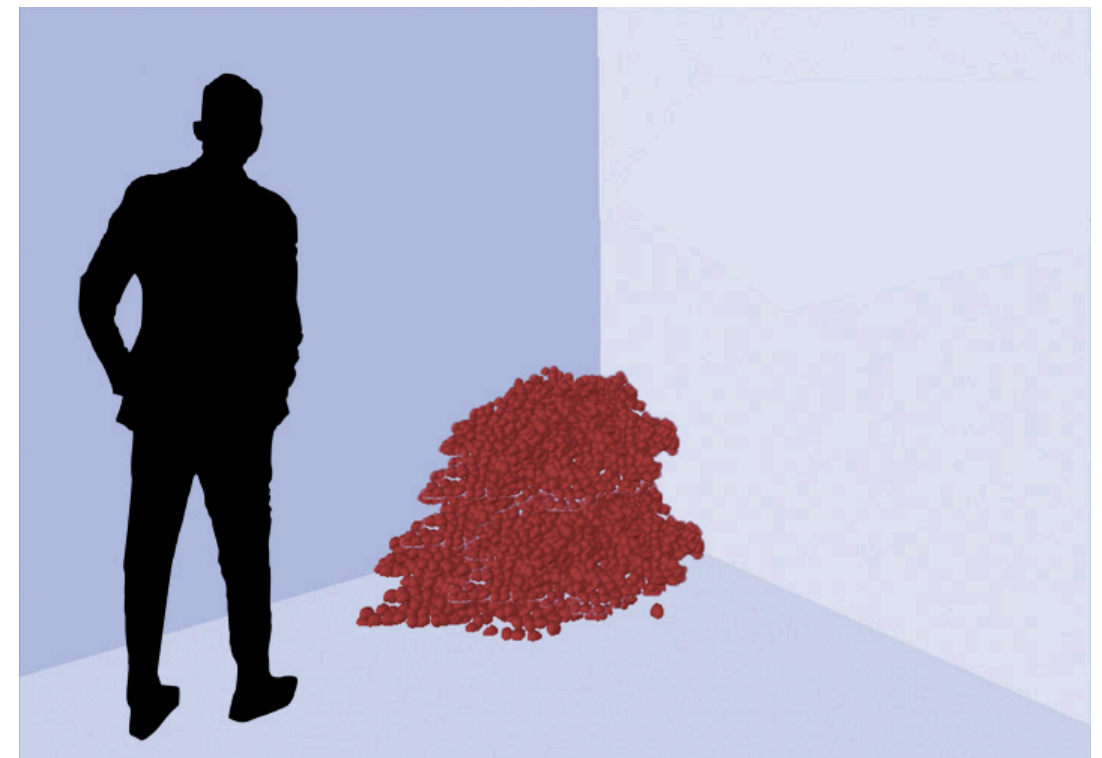
1 year of Facebook represented with Haribo Tagada
using revenues from advertising as a metric

Social Network	Cost per ad Impression	Average Time spent on the platform daily	Number of ads shown per day
Facebook	0.00719$	58 minutes	88
Instagram	0.0002- 0.0067 $	53 minutes	?

■ To be confirmed

■ Confirmed

Sources:

https://review42.com/resources/how-much-time-do-people-spend-on-social-media/

https://www.gradschools.com/degree-guide/how-many-ads-do-you-see-each-day

https://www.facebook.com/business/ads

https://www.webfx.com/social-media/how-much-does-it-cost-to-advertise-on-instagram.html#:~:text=LinkedIn%20Advertising%20Costs-,How%20much%20do%20Instagram%20ads%20cost%3F,pay%20%246.70%20per%201000%20impressions.

Research progress of social media companies' revenues from advertising (Fall 2020)

For this reason, I decided to test scale using the minimum wage per hour in France as the value of the user's time. In this prototype, I want the viewers to realize, as they eat candies, that not only is the accumulation of time bad for their health, but also that the missed opportunities to make additional income increase with time. Knowing that my audience is based in France, I found that the average European weekly social media usage is of 10.5 hours, worth 110 euros in French minimum wage. Coherently, 8462 Haribo Chamallow candies are affordable at the same price in the supermarket. I have therefore represented 1 week of our time spent on social media using a pile of 8462 candies.

1 week of social media represented with Haribo Chamallows using the minimum wage in France as a metric

Over the Spring semester, I decided to shift my project from being a data visualization sculpture to an interactive installation, where the value of our own social media consumption is being revealed to ourselves with a customized candy pile.

During the first weeks, I transformed my project into a candy shop, where the viewers would get their screen time converted into a big pile of purchasable candies with a platform accessible from a QR code. The obtained results would be shown to a cashier standing behind a counter, in charge of scooping candies from candy jars, scaling them, and making them correspond to the numbers on the platform, before handing them to the users in candy bags. In my first prototype, because the metrics related to revenues from advertising I was looking for in the Fall semester weren't available, I tested this new iteration of the work using three different metric systems: the minimum wage in France, the average revenue per user per minute, and the average revenues of all social media platforms together. With all three metrics, I used Haribo Croco candies to quantify the screen usage of four different user profiles: the average user, myself, my mother and a friend. Along, I prototyped a self-help guide for moderate social media use people can pick up from the candy shop. The written tips and tricks are directly taken from my thesis research paper. (See page 49)
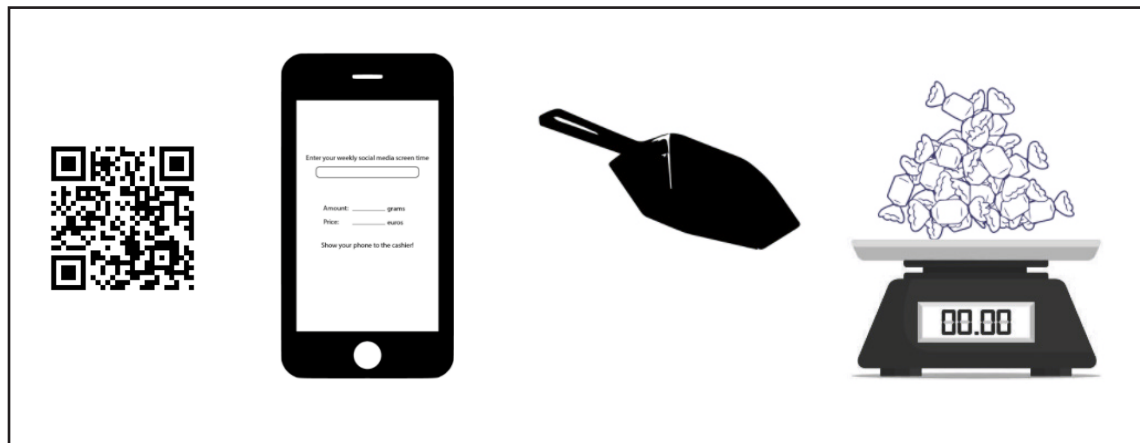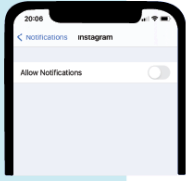

First explanatory sketches

Tips & Tricks for a moderate consumption

1. PSYCHOLOGICAL TRICK

Using the language "I choose not to use social media right now" instead of "I can't use social media" will psychologically motivate you into consuming social media in moderation.
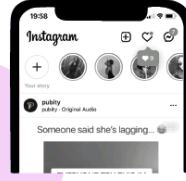
2. CHANGES IN YOUR SMARTPHONE SETTINGS

Disabling your social media notifications will prevent you from compulsive social media use. You can turn it off from the Settings app.

Making the screen grayscale will distract your attention away from the platforms to some extent. You can enable grayscale

mode from the settings app in your iOS devices and the Digital Well-being feature in your Android phones.
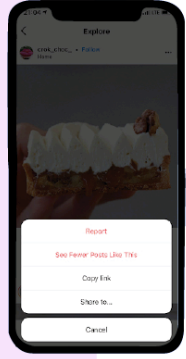
3. CHANGES IN YOUR SOCIAL MEDIA FEEDS

Your social media feeds are customized to your tastes in order to keep you consuming the platforms.

To make the newsfeed algorithm less addictive, you can identify the posts that capture your attention the most, and click on the "See Fewer Posts Like This" button to hide it. This will help the system re-organize the feed for you in a less personal way.

You can also train the algorithm by only taping on the posts that interest you the least. This will prevent the system from creating a feed uniquely designed to capture and keep your attention.

These tips aren't unique to Instagram, you can also use them for Facebook and Snapchat.

4. USEFUL APPS AND FEATURES

• Digital Well-being: a set of digital tools available on Android phones, helping the users understand their technology usage and create healthy habits with their surroundings.

• Screen Time: a comparable approach at solving digital overuse. The feature is available on iOS devices.

• Forest: you play the game of resisting social media by planting a tree and putting your phone down. Resist 25 minutes, and your tree will live. If you pick up your phone and switch to another app, you're left with the punishment of a dead plant.

Self help guide for moderate social media consumption

In order to calculate the average revenues per user per minute, I looked for the average revenue each company makes per user per year. Then, I researched how many minutes on average we spend per year on the platform, and divided the revenue over the time. As I was testing this metric system, I noticed that keeping the price per candy the same it is at Monoprix generates too little candy. For instance, one minute of our time on Facebook generates the little amount of 0.03 Haribo Croco. In an attempt at increasing the number of candies, I tested a version with the price per piece reduced from 36 cents to 1 cent. This generated 0.11 pieces per minute instead. In contrast, when experimenting with the minimum wage, I kept the price per candy the same it is in the supermarket. As a result, 1 minute of our time on social media generates 4 pieces of candy approximately. This result satisfied my needs of getting a big accumulation of candies in order to show the unhealthiness of consumption. However, it didn't satisfy my budget limitations, because it required 19€ of spending over candies per visitor of the exhibition.

The feedback I received from my professors and classmates on this first prototype played a drastic role in the evolution of my project. I was advised not to use the minimum wage, as it would raise governmental questions, and was also recommended to keep the price per candy the same it is at the supermarket when working with the other metrics. I was left with no other choice than using the average revenues per user per minute as a metric, suggesting how little social media companies value human life. By adapting my concept to this new observation, the output goals of my project have thus completely changed, from quantifying our screen time using a big accumulation of candies, to visualizing it with the smallest amount of candy possible. Achieving this new result required a lot of experimentation with different candy types and bag sizes. (See experimentation on page 22)

APP	REVENUE PER USER PER MINUTE
FACEBOOK	€ 0.00126
INSTAGRAM	€ 0.00050
WHATSAPP	€ 0.00065

Calculation:

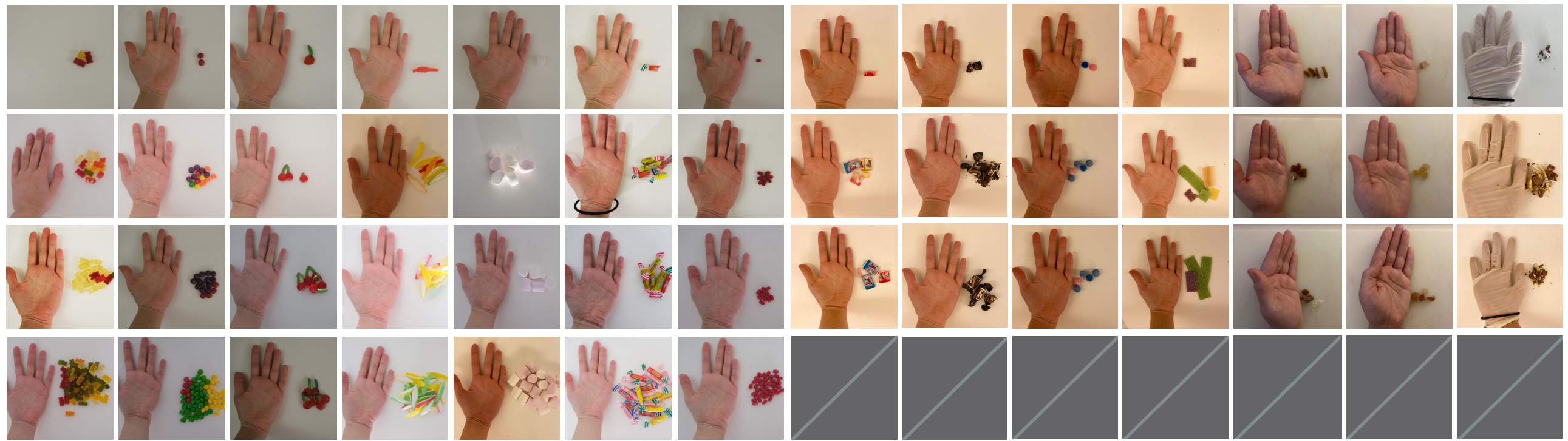Average Revenue per User per Year / Average Number of Minutes per User per Year

Sources:

https://s21.q4cdn.com/399680738/files/doc_financials/2020/q4/FB-Earnings-Presentation-Q4-2020.pdf

https://buildfire.com/instagram-revenue-and-usage-statistics-breakdown/

https://www.businessofapps.com/data/whatsapp-statistics/#2

https://www.broadbandsearch.net/blog/average-daily-time-on-social-media

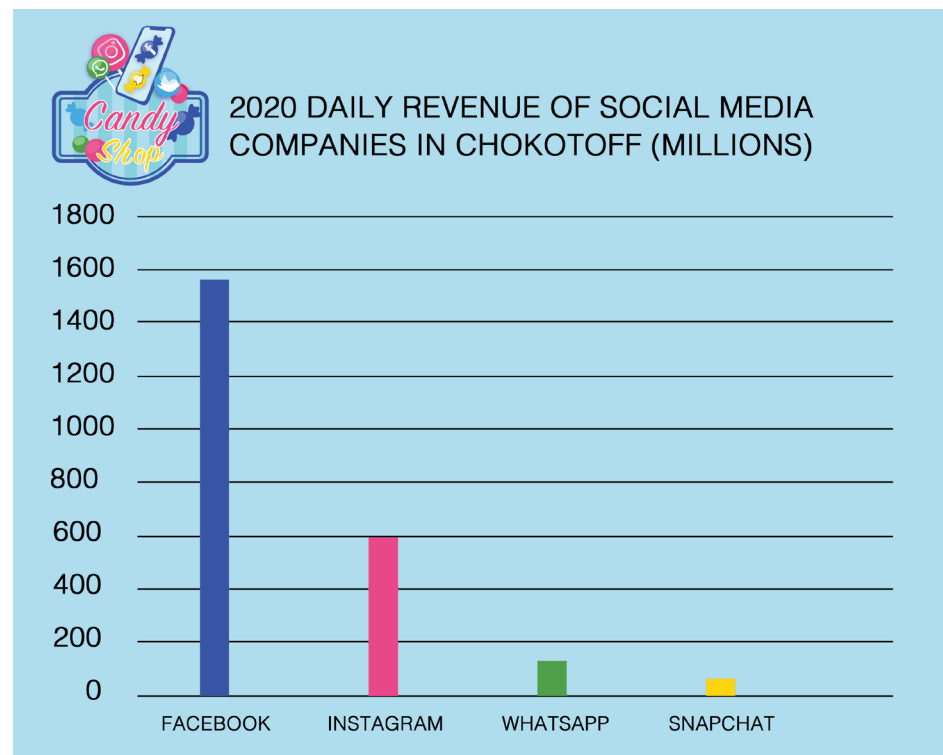Research of average revenues of social media companies per user per minute

From top to bottom row:

1. Thalia: 3 minutes on Facebook, 56 minutes on Instagram, 5 minutes on WhatsApp, 11 minutes on Snapchat.

2. Average user: 58 minutes on Facebook, 53 minutes on Instagram, 28 minutes on WhatsApp, 49 minutes on Snapchat, 13 minutes on Twitter.

3. Thalia's mom: 140 minutes on Facebook, 95 minutes on Instagram, 12 minutes on WhatsApp.

4. Thalia's friend: 2 minutes on Facebook, 173 minutes on Instagram, 793 minutes on WhatsApp, 546 minutes on Snapchat, 1 minute on Twitter.

Final outcome: placing ferrero rocher, gummies and caramel candies purchased from Le Bon Marche in a 30 x 40 cm bag.
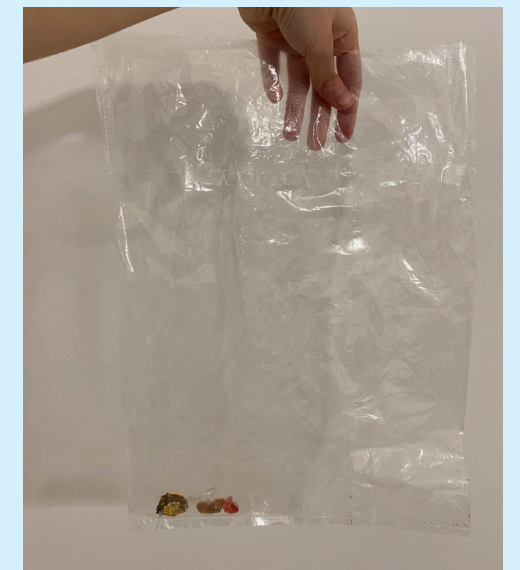
Based on the results of the expirementation, the ultimate solution to vizualising our social media usage time with the smallest amount of candy is to place the most expensive candies in the largest candy bag I could possibly find. However, for the candies to be perceived as rewards for the companies rather than for the users, it was necessary to accompany the candy bags with a representation in candy form of the superfluous revenues social media companies make on a daily basis. I first represented it with bar graphs, then switched to pyramids of candies in order to make it visually more powerful. To do so, I had to research how much revenues these companies make on average, measure the volume of different candies, and sort out the total volume in the form of an even sided pyramid.

Bar graph representing the average daily revenues of social media companies in millions of Chokotoff candies
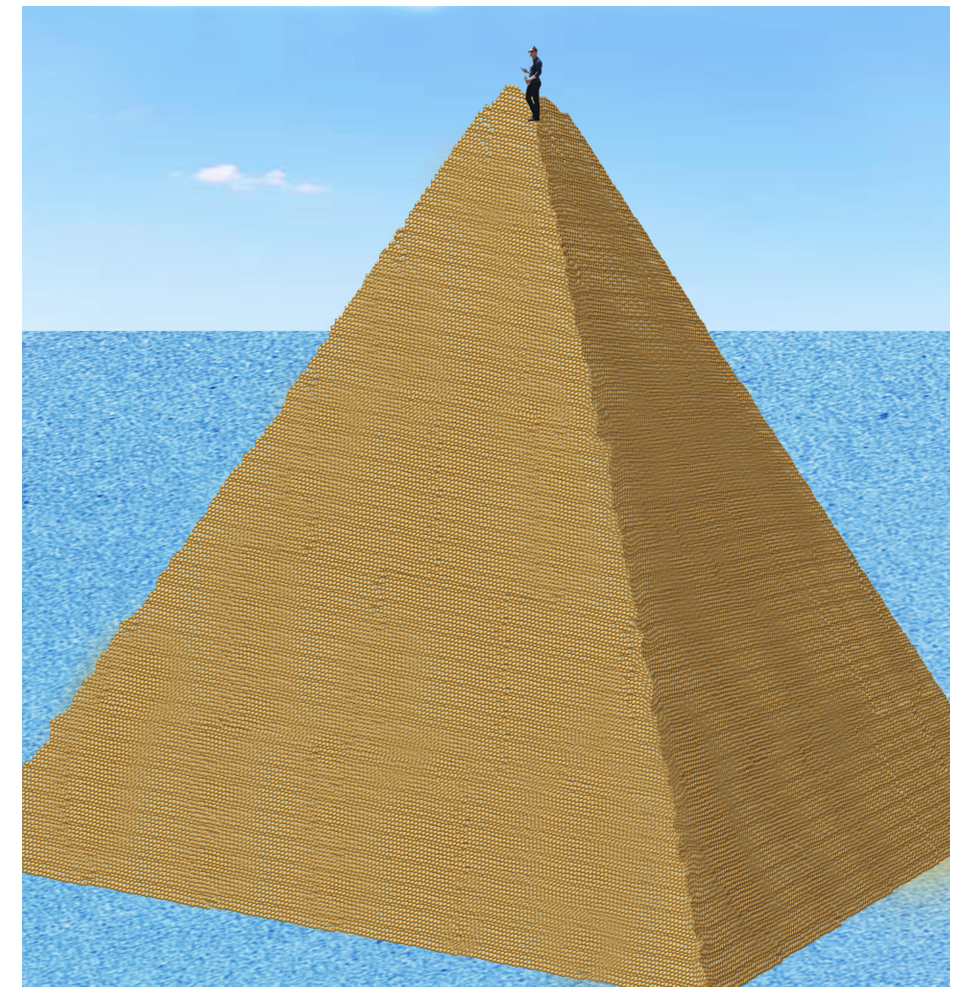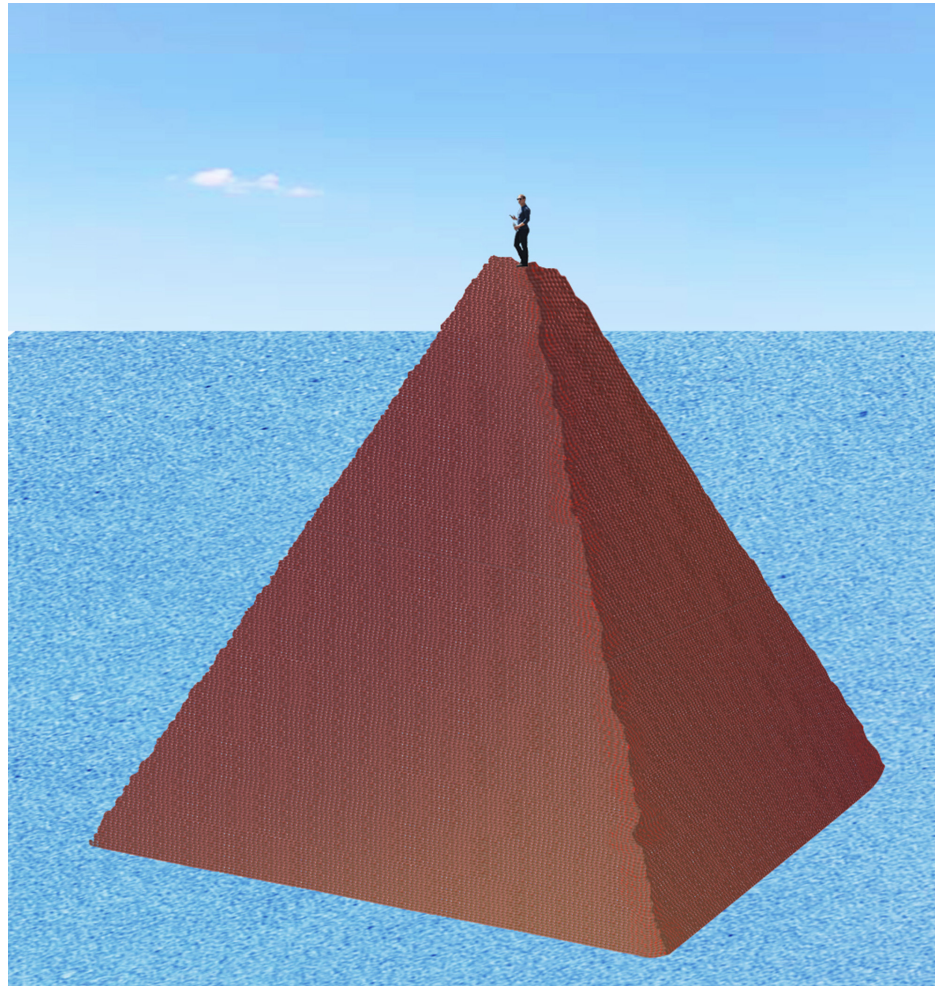

MARK STANDING ON HIS PILE OF FERRERO ROCHER

Average daily revenue: 195.5 million € *

Pyramid height: 36.31 meters

Number of candies: 591 million

*Source: Facebook Investor Relations

Pyramid no.1 with caption

MARK STANDING ON HIS PILE OF BOULE DE GOMME
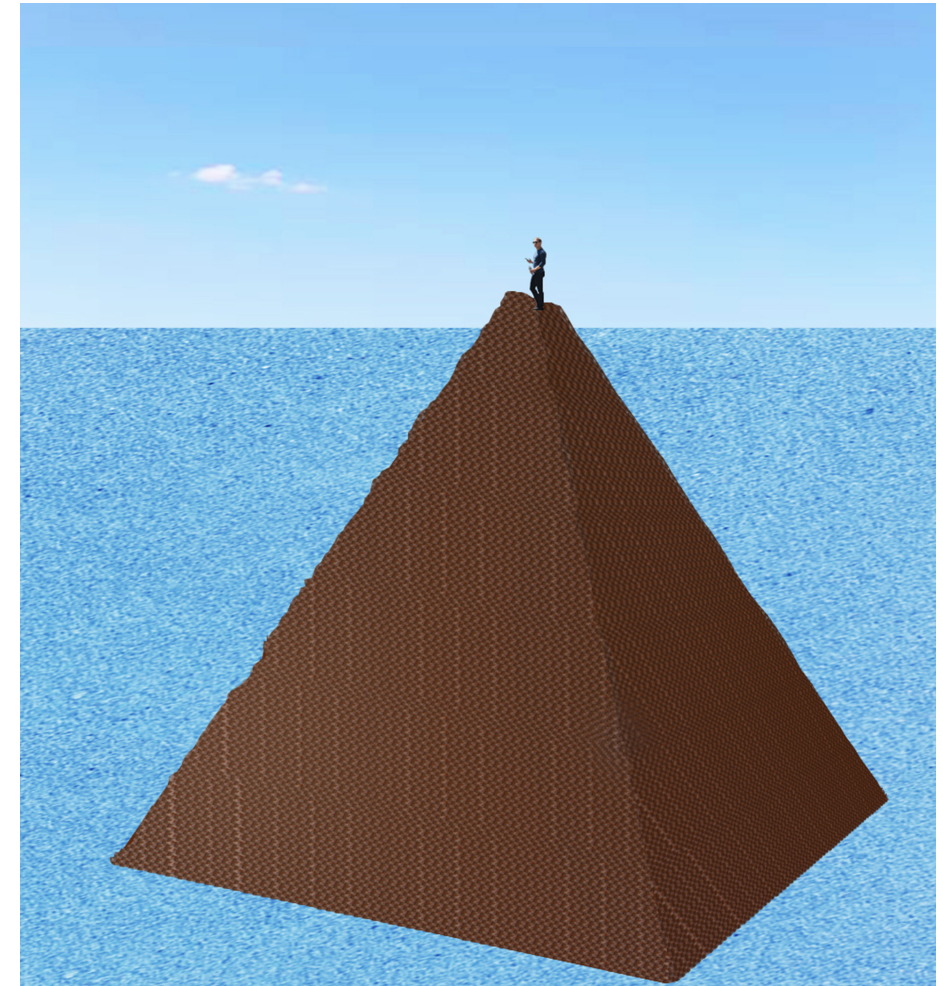
Average daily revenue: 195.5 M € *

Pyramid height: 23.2 meters

Number of candies: 1479 Million

*Source: Facebook Investor Relations

Pyramid no. 2 with caption

MARK STANDING ON HIS PILE OF CARAMELS

Average daily revenue: 195.5 Million € *

Pyramid height: 21.74 meters

Number of candies: 618 Million

*Source: Facebook Investor Relations

Pyramid no.3 with caption

The next step was to mockup the installation in a 10 square meter space. The different configurations I first designed included a candy counter as the main element of the work. In the first versions, I was hesitating between showcasing behind the counter large scale framed illustrations (2 x 2 meters) or large pyramid sculptures constructed from cardboard (2 x 2 x 2 meters). In order to make a decision and grasp the physical output of the work, I had to prototype small scale versions of the sculptures, along real size cardboard versions of the candy piles that would be displayed on the counter. After asking my classmates and professors for advice, I chose to stick to the illustrations as they were deemed visually more powerful.
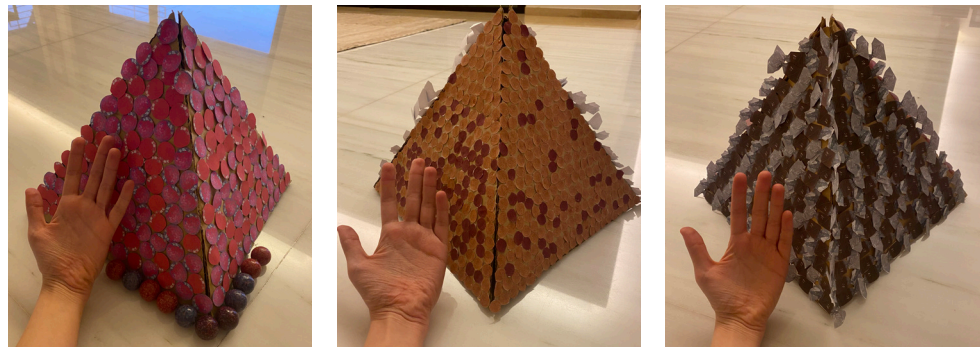
Cardboard prototype of candies on counter
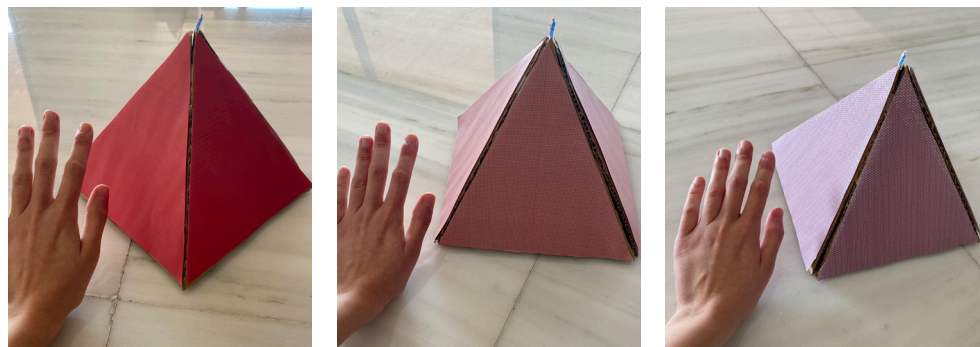
Cardboard prototype of sculptures
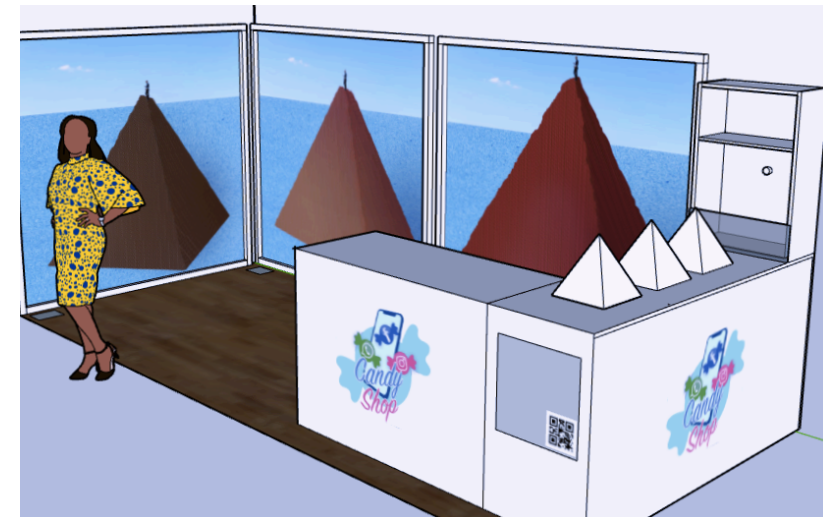
Version with framed illustrations
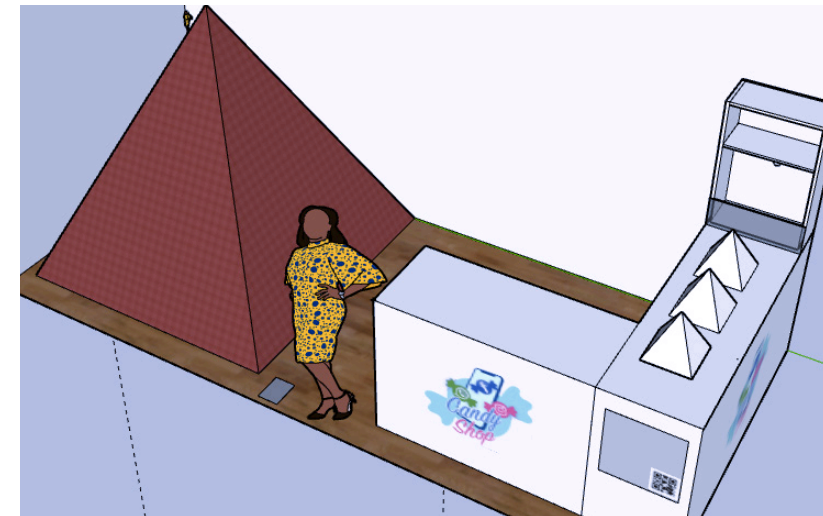
Version with large scale cardboard sculptures

After reflecting on the production of the work, I realised that the given time frame was too short and therefore not favorable to the making of large scale frames from scratch. For this reason, I tested different version of the installation showcasing the illustrations in formats which can be sourced from production companies in Paris. These include kakemono rollups (0.85 x 2 meters), posters hanging from ceiling (1 x 2 meters), and advertising cardboards (1 x 1.5 meters).
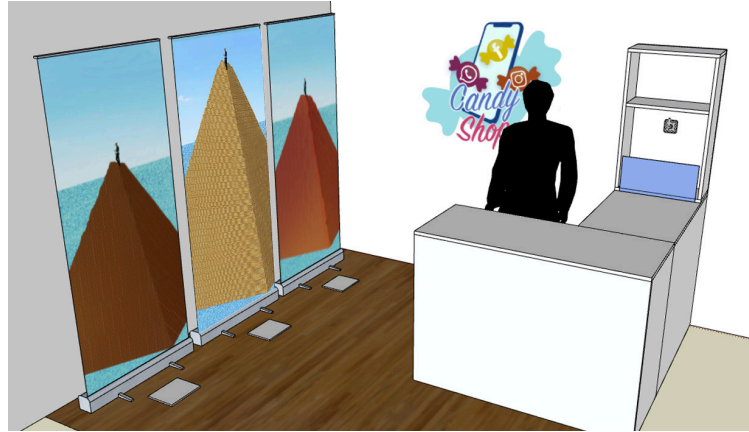
Version with kakemono rollups (0.85 x 2 meters)

Version with posters (1 x 2 meters)
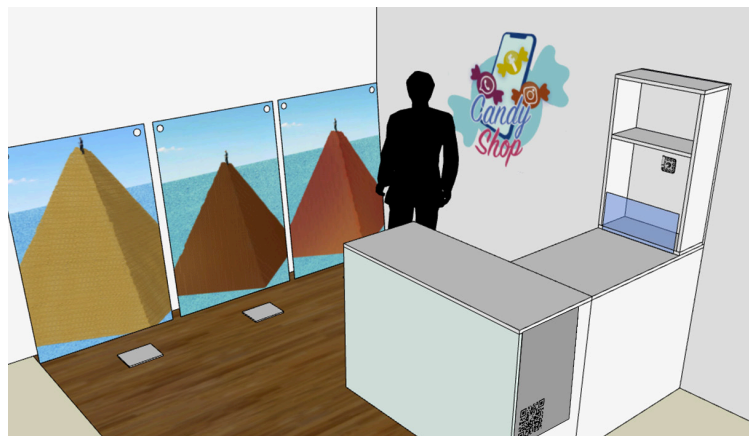
Version with advertising cardboards
(1 x 1.5 meters)

Around midterm, I decided to downplay the candy shop aspect of the installation, and adapt it to an art exhibition setting by replacing the counter with a smaller functional candy cart being brought in the space during the candy cutting sessions. Many factors influenced my decision, including budget and the uncertainty of building a counter of good quality from scratch. In the final version of the installation, the posters are of 1.2 x 0.8 meters, the iPad on the podium is replaced with a QR code on the wall, and the candy cart becomes an element part of the artwork. (See page 38)

Precision: 0.01g

Storage for candy bags, tissue box and gloves

Trash bin for candy residues

Candy Cart
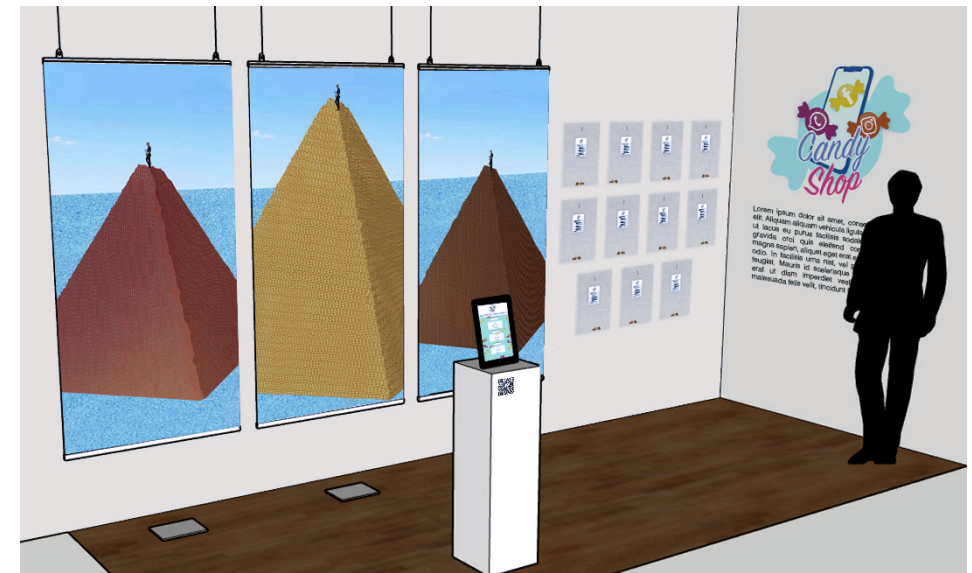
A documentation of the evolution of the visual identity of the installation.

LOGO V.1

LOGO V.2

LOGO V.3
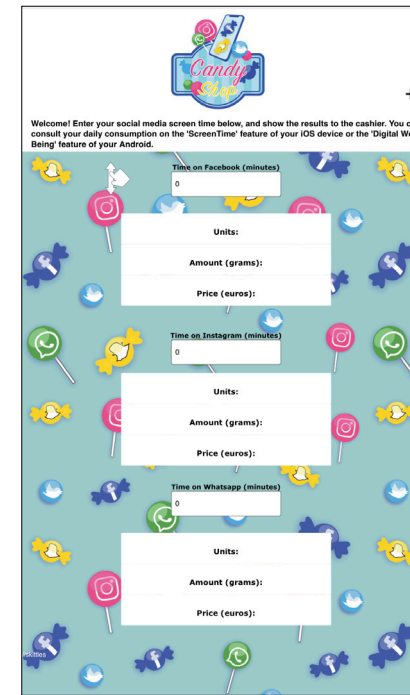
APP V.1

APP V.2
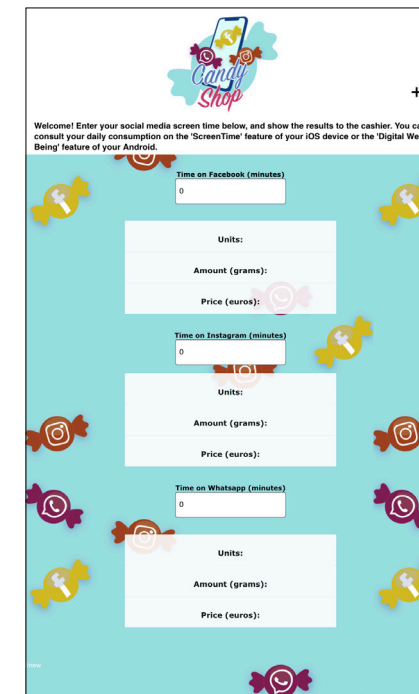
APP V.3

STICKER LABEL V.1

Nutrition Facts

Serving size:
30 minutes
Size per candy:

- 🔵 33 minutes
- 🟢 56 minutes
- 🟡 59.5 minutes
- 🟠 2 minutes
- 🔴 76.5 minutes

Amount Per Candy

Calories	**19** for 5.5g
Emotional Effort	3g
social comparison	≈ 1g
stress	≈ 1g
fear of missing out	≈ 1g
Physical Activity	2.5g
blue light absorption	1.25g
poor posture	1.25g
Privacy	?

⚠️ **COMMON SIDE EFFECTS** HEADACHES, EYE STRAIN, POOR SLEEP, TEXT NECK, ATTENTION DEFICIT DISORDER, ANXIETY, LONELINESS, DEPRESSION. POTENTIAL— TRIGGER FINGER, SUICIDAL THOUGHTS.

FOR A HEALTHY LIFESTYLE, KEEP YOUR DAILY SCREEN TIME UNDER 30 MINUTES.

STICKER LABEL V.2

Nutrition Facts

Serving size:
30 minutes
Size per candy:

- 🟦 38 minutes
- 🔴 25 minutes
- 🟩 22 minutes
- ⚡ 57.5 minutes
- 🔷 16.6 minutes

Amount Per Candy	🟦	🔴	🟩	⚡	🔷
			%Daily Value*		
Emotional Effort	126%	83%	73%	191%	55%
social comparison	-	-	-	-	-
stress	-	-	-	-	-
fear of missing out	-	-	-	-	-
Physical Activity	126%	83%	73%	191%	55%
blue light absorption	-	-	-	-	-
poor posture	-	-	-	-	-
Privacy	?	?	?	?	?

⚠️ **COMMON SIDE EFFECTS** HEADACHES, EYE STRAIN, POOR SLEEP, TEXT NECK, ATTENTION DEFICIT DISORDER, ANXIETY, LONELINESS. POTENTIAL— TRIGGER FINGER, SUICIDAL THOUGHTS.

*Percent daily values are based on a recommended 30 minute screen time diet.

STICKER LABEL V.3

INGREDIENTS PER CANDY:

🔵 **89.7 MINUTES OF** SOCIAL COMPARISON, POTENTIAL STRESS, FEAR OF MISSING OUT, PASSIVE SCROLLING, EXPOSURE TO BLUE LIGHT, POOR POSTURE.

🟥 **149 MINUTES OF** SOCIAL COMPARISON, POTENTIAL STRESS, FEAR OF MISSING OUT, PASSIVE SCROLLING, EXPOSURE TO BLUE LIGHT, POOR POSTURE.

🟢 **132 MINUTES OF** SOCIAL COMPARISON, POTENTIAL STRESS, FEAR OF MISSING OUT, PASSIVE SCROLLING, EXPOSURE TO BLUE LIGHT, POOR POSTURE.

🟨 **203 MINUTES OF** SOCIAL COMPARISON, POTENTIAL STRESS, FEAR OF MISSING OUT, PASSIVE SCROLLING, EXPOSURE TO BLUE LIGHT, POOR POSTURE.

STICKER LABEL V.4

INGREDIENTS PER CANDY:

🔵 **251 MINUTES OF** SOCIAL COMPARISON, POTENTIAL STRESS, FEAR OF MISSING OUT, PASSIVE SCROLLING, EXPOSURE TO BLUE LIGHT, POOR POSTURE.

🔴 **659 MINUTES OF** SOCIAL COMPARISON, POTENTIAL STRESS, FEAR OF MISSING OUT, PASSIVE SCROLLING, EXPOSURE TO BLUE LIGHT, POOR POSTURE.

🟢 **206 MINUTES OF** SOCIAL COMPARISON, POTENTIAL STRESS, FEAR OF MISSING OUT, PASSIVE SCROLLING, EXPOSURE TO BLUE LIGHT, POOR POSTURE.

STICKER LABEL V.5

Candy Shop

USER: THALIA

🍬 **TIME ON FACEBOOK:** 41 MINS
CANDY GENERATED: 0.16523

🍬 **TIME ON INSTAGRAM:** 109 MINS
CANDY GENERATED: 0.17113

🍬 **TIME ON WHATSAPP:** 81 MINS
CANDY GENERATED: 0.39285

PRICE: 0.1706 €

GETTING BACK WHAT YOU GIVE

USER: THALIA

DAILY TIME ON FACEBOOK:
41 MINS
CANDIES GENERATED:
0.16523 (UNITS), 1.9475 (GRAMS)

DAILY TIME ON INSTAGRAM:
109 MINS
CANDIES GENERATED:
0.17113 (UNITS), 0.8938 (GRAMS)

DAILY TIME ON WHATSAPP:
81 MINS
CANDIES GENERATED:
0.39285 (UNITS), 0.9801 (GRAMS)

PRICE: 0.1706 €

STICKER LABEL V.6

USAGE TIME AND VALUE

USER: THALIA

DAILY TIME ON FACEBOOK:
41 MINS
CANDIES GENERATED:
0.16523 (UNITS) 1.9475 (GRAMS)

DAILY TIME ON INSTAGRAM:
109 MINS
CANDIES GENERATED:
0.17113 (UNITS) 0.8938 (GRAMS)

DAILY TIME ON WHATSAPP:
81 MINS
CANDIES GENERATED:
0.39285 (UNITS) 0.9801 (GRAMS)

TOTAL PRICE: 0.1706 €

STICKER LABEL V.7

Preview of installation in the exhibition space

4. FINAL PROJECT

The project was exhibited at Galerie D, at the Fondation Fiminco in Romainville, France, as part of the end of the year thesis show. PS: All the images will be replaced with the ones taken prior to the opening (when I'll get delivered all the equipment for the installation) and during the thesis show.
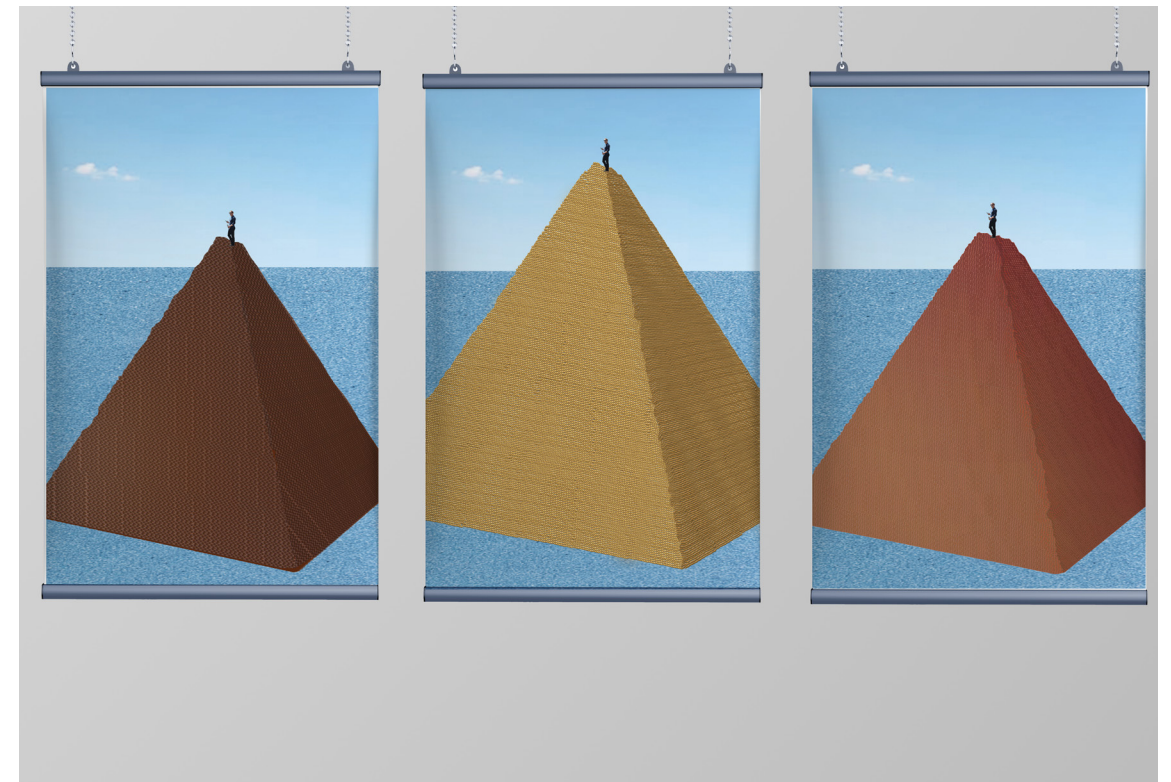
Illustrations hanging from ceiling against the wall
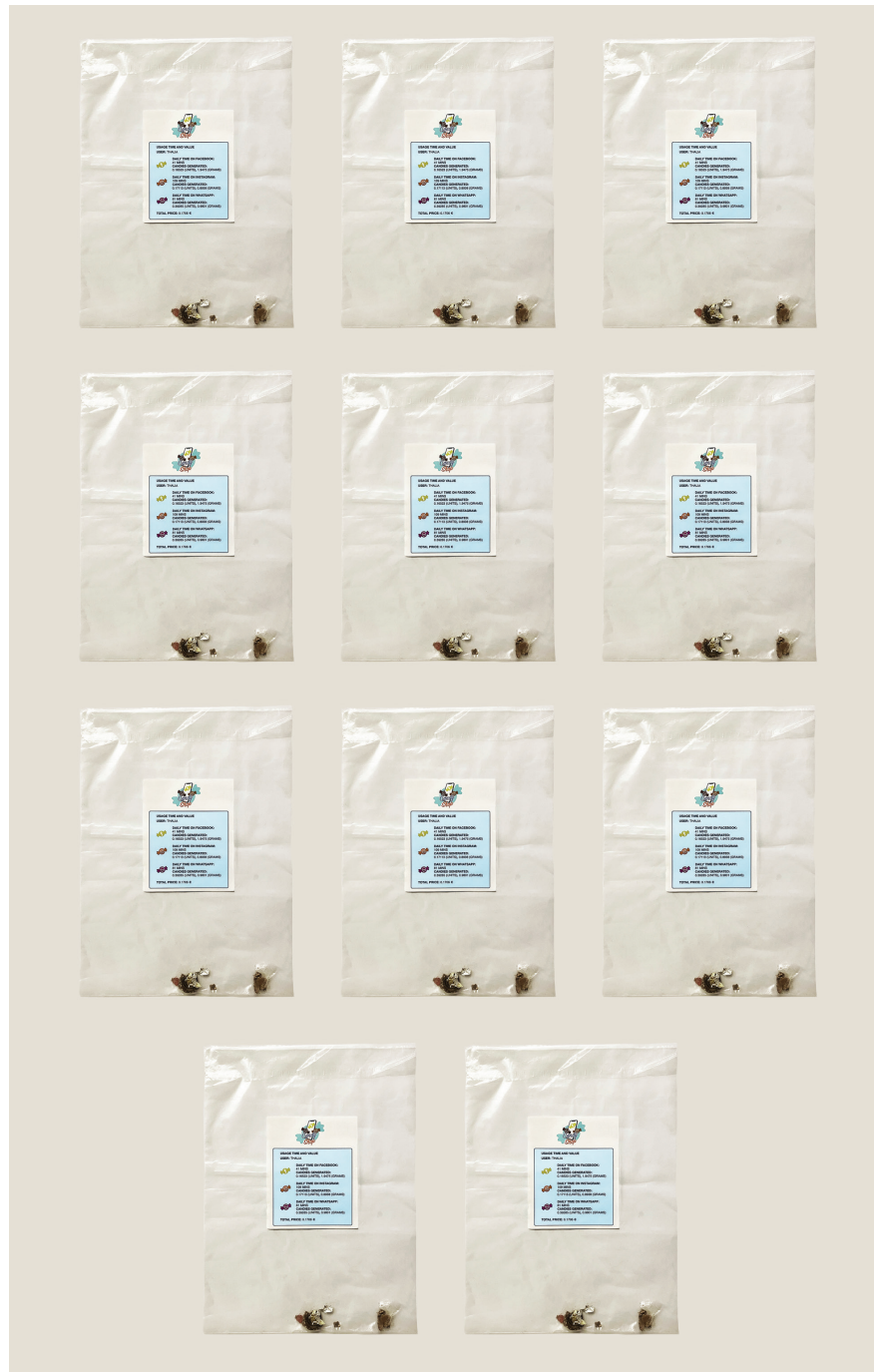
Candy bags containing the social media consumption
of the 11 exhibiting AMT artists

USAGE TIME AND VALUE
USER: THALIA

DAILY TIME ON FACEBOOK:
41 MINS
CANDIES GENERATED:
0.16523 (UNITS) 1.9475 (GRAMS)

DAILY TIME ON INSTAGRAM:
109 MINS
CANDIES GENERATED:
0.17113 (UNITS) 0.8938 (GRAMS)

DAILY TIME ON WHATSAPP:
81 MINS
CANDIES GENERATED:
0.39285 (UNITS) 0.9801 (GRAMS)

TOTAL PRICE: 0.1706 €

CANDY SHOP: GETTING BACK WHAT YOU GIVE

COME GET FREE CANDY!

A 20 minute value analysis session where the time you have donated to Mark Zuckerberg is given back to you in candy bags for free.

SLOT 1   12-12:20 PM

SLOT 2   3-3:20 PM

SLOT 3   5-5:20 PM

Candy cutting session
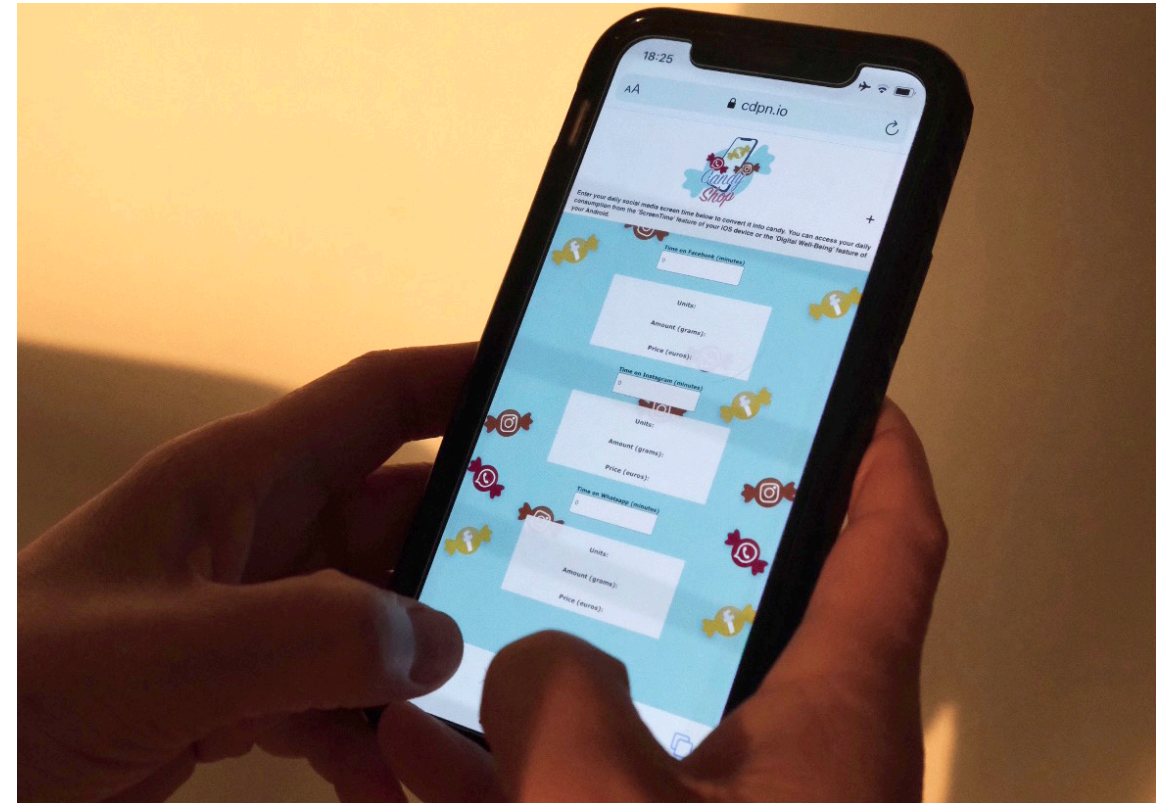
App Preview

App QR Code

5. ARTIST STATEMENT

I enjoy strolling around the city, deliberately observing the dynamic patterns of life surrounding me. Repetitive and novel situations captivate me. Why is this behavior recurrent? Why has this trend emerged? Can we change this? I closely observe people, and ask myself questions. This is my creative process.

Working at the intersection of art and design, I aspire to create new ways for the public to perceive their surroundings and learn about their behaviors. By giving a twist to familiar aesthetics, figurations and imagery, I seek to bring to the forefront critical discussions about society at large. Playing with the unexpected is crucial to engage people with the work, as they are prompted to asking questions out of curiosity. ***Candy Shop: Getting Back What You Give*** gives new function to candy. Candies become an element of desirability, a functional confectionary inciting people to ask questions out of disappointment. By undervaluing the social media usage time of my audience, I aspire to create changes to their behaviors with their screens, driving them perhaps towards a reduced social media consumption.

The materials I choose are predefined by my intentions. It is my aim as an artist/designer to translate my vision into playful form. If I don't inform the audience the same way I would educate a child, the work becomes too serious. Because we live in a world where seriousness has become redundant, a blend of little abstraction and reality is effective in provoking changes of mindsets. It being exhibited in a museum or a gallery, my work isn't limited to the confines of a single media. Rather, it spans installation, sculpture, virtual reality, augmented reality, video and graphic design. I want my art to take various forms, the same way society does.

6. THESIS RESEARCH PAPER

Title: Counteracting Your Social Media Addiction

Course: Advanced Research Seminar

Professor: Stephanie Nadalo

Term: Fall 2020

Where is your phone? How far are you from your device right now? Can you reach it with your arm? Are you thinking of checking your social media while reading this paper? Resisting the temptation of the forbidden dessert is a difficult task, I must admit. Only a few of us can succeed. Regardless, I'm asking you to remain focused.

On average, smartphone users spend three hours in front of their screens daily. Over a lifetime, this adds up to eleven years.[1] Think about it, you are depriving yourself of almost a decade of productivity, meaningful family time, personal fulfilment, and perhaps sleep. Some of you might not be aware that this staggering amount of time wasted is beneficial to social media companies. Indeed, the rapid growth in popularity of information technologies in the beginning of the aughts, gave rise to a marketplace where our time and attention have become valuable resources; advertisers pay the platforms to host their ads, in exchange for the users' clicks and views. Consequently, technology engineers are rendering the design of the platforms addictive in order to maximize the users' engagement and time spent, and therefore the companies' profit. You might wonder how a non-chemical product encourages addictive behaviors. Well, the design of social media interfaces are built upon attention-capturing mechanisms interacting with our brains the same way gambling, alcohol or drugs do.

Although these platforms are addictive, let's not forget the many benefits they provide. You can connect with the world and share your voice without using drugs and alcohol, but not without using social media. Therefore, I won't encourage you to delete your accounts, although I believe it would be the safest way to suppress your addiction. Instead, I will suggest other solutions which, I hope, will counterbalance the negative addictive loops most of us are trapped in. Thus, the first step to managing your addiction is being aware of the addictive ingredients you consume and acknowledging the phenomenon itself or its potential, if you haven't yet.

First, this paper will explain the mechanisms that make social media addictive. The second step is to take action, based on our understanding of the way the platforms are designed. Hence, I will suggest incremental solutions that could help you combat your bad habits, including behavioral and technological manners. Finally, I will highlight large-scale solutions that are in progress, which I believe are important to achieve the best results. This paper will therefore argue that social media is addictive, and deleting your accounts is not the sole solution.

The root of your addiction is the business model of social media. The platforms are free because your attention is being monetized. The advertisers are the customers, and your attention is what's being sold. Ultimately, in order to increase their revenues, social media companies are making you spend as much time as possible on their sites. To satisfy their economic motives, the companies use attention-capturing tricks to directly interfere with your brain cells. The human brain is undeniably a complex organ. Its billions of synapses connect our neurons together into a network of circuits governing not only our thoughts, our feelings, and our personalities, but also our behaviors. One neurological system of interest to technology designers is the mesolimbic pathway, known as the reward system. It allows the spread of dopamine in different areas of the brain which are involved in motivating behavior. Dopamine is a type of neurotransmitter activated during or upon the anticipation of pleasurable situations such as food, sex, drugs, and positive social interactions.[2] When triggered by dopamine, the different brain regions in our mesolimbic system establish associations between environmental cues and the rewarding value of these situations or stimuli. As a result, the individuals seek out the source of their pleasurable activity by repeating their behavior or adjusting it. As of today, the addictive potential of social media isn't recognized by the medical world. However, recent research has

[1] Jory MacKay, "Screen Time Stats: How Your Phone Impacts Your Workday – RescueTime," RescueTime Blog, February 20, 2020, https://blog.rescuetime.com/screen-time-stats-2018/.

[2] Ayano G (2016) Dopamine: Receptors, Functions, Synthesis, Pathways, Locations and Mental Disorders: Review of Literatures. J Ment Disord Treat 2: 120. doi:10.4172/2471-271X.1000120
Trevor Haynes, "Dopamine, Smartphones & You: A battle for your time." Accessed November 23, 2020.http://sitn.hms.harvard.edu/flash/2018/dopamine-smartphones-battle-time/

shown that addictive behaviors produce the same brain responses that are involved in drug abuse.[3] Behavioral experts share the same belief, "all entities capable of stimulating a person are addictive, and whenever a habit changes into an obligation, it can be considered as an addiction." [4] In other words, social media platforms are addictive because their design stimulates our attention by triggering our reward system.

Several design features on social media reflect behaviorist experiments which use food treats as rewards to change behavioral patterns in animals. In fact, "these techniques can be used to treat addictions, but they can also be used to create them."[5] The first behaviorist technique found within the design of the platforms is classical conditioning, discovered by Ivan Pavlov in the 1890s. He famously demonstrated that linking two stimuli together can produce a new learned response in a person or animal through associations. For instance, using the sound of a bell as a symbol of food can make a dog salivate. The same concept applies to social media; the event of hearing or seeing a notification appearing on our screens activates a reward cue for the possibility of a like, a comment, or a text message waiting for us. On a neurological level, we associate this stimuli with the elevation of dopamine triggered by the social feedback we expect to receive, which reinforces us to spontaneously check the platform. Moreover, the notification badges stimulating us have been purposely designed with the color red, because "it lights up parts of our brains that other colors don't." [6]

Similarly, there are two types of Facebook and Instagram rewards I would like to point out: the like button, a deeply interactive form of real-time social feedback, and the desirable content of information we seek on the news feed. These are delivered by an algorithm programmed at a variable ratio reinforcement schedule, which can be compared to the Skinner box developed by B.F Skinner in 1938. This methodical device is used in operant conditioning experiments, aimed at modifying behaviors in animals with rewards and punishments. One study consisted of providing the subject with a reward on a variable ratio schedule; the mouse would press a lever and would get food at unpredictable times as the light signal of the device turned green **[ill.1]**. Skinner observed that lab mice would repeat the behavior of pulling the lever of food more compulsively when the positive reinforcement was unpredictable, than when it was delivered at a continuous rate. In other words, the unpredictable nature of rewards increased the activity of dopamine neurons in the animal's brain.[7] A similar phenomenon is observed within the platforms we use. For instance, when posting a picture on Instagram, the algorithm holds back the likes we expect to receive for a certain period of time, before delivering them in a big burst[8]. Meanwhile, users who are more sensitive to negative social feedback may find themselves reinforced to compulsively check and refresh the page out of the disappointment of not being notified with any like at expected times. Similarly, users are also drawn to compulsive checking of the news feed, when the content of information meeting their desires isn't delivered by the algorithm at a constant rate. Like the mouse pulling the lever, we pull up the page of our feeds to refresh the algorithmic delivery of rewards.[9]

"As we eat food, the pleasure response to the sensory properties of the food decreases within minutes."[10] Since both food and social media stimulate our reward system, it is undeniable that a similar phenomenon is involved in the consumption

[3] Adam Alter, Irresistible : The Rise of Addictive Technology and the Business of Keeping Us Hooked, (New York: Penguin Press: 2017), 131.
[4] Seyyed Salman, Alavi et al. "Behavioral Addiction versus Substance Addiction: Correspondence of Psychiatric and Psychological Views." International journal of preventive medicine vol. 3,4 (2012): 290.
[5] Jaron Lanier, Ten Arguments for Deleting your social media right now, (Minneapolis: Graywolf Press, 2016),
[6] BBC News, "How Social Media Apps Hook Their Users.", BBC News, July 3, 2018. https://www.bbc.com/news/av/technology-44697446

[7] Adam Alter, Irresistible : The Rise of Addictive Technology and the Business of Keeping Us Hooked, 195.
[8] Anderson Cooper, "What Is 'Brain Hacking'? Tech Insiders on Why You Should Care." CBS News, April 9, 2017, https://www.cbsnews.com/news/brain-hacking-tech-insiders-60-minutes/
[9] The pull to refresh feature is a persuasive design technique inspired from the lever of slots machines.
[10] Witherly, Steven Anthony. "Food Pleasure Theories and Principles." In Why Humans like Junk Food (New York: iUniverse, 2007), 7.

of the platforms. Thus, in order to keep you biting into the substance and make you spend more time while being more involved, social media companies build their algorithms to be adaptive. This means "they constantly make small changes to themselves in order to get better results"[11], hence customizing the flavor of our feeds to appeal to our regularly evolving tastes with the information we likely want to see. To do so, the system regularly processes metrics based on our browsing, liking, sharing, and commenting history in order to determine our current mood, life situation, and interests. When the algorithm can't figure out our current preferences, it performs random changes to its settings.[12] As a result, we're left with an increased randomness of delivered information, forcing us more into the addictive behavior of gambling for desirable contents.

You may also notice that social media feeds are bottomless.[13] In fact, this feature is inspired from the 2005 bottomless soup bowl experiment, led by Cornell professor Brian Wansik who demonstrated that people can be tricked into eating more soup when unknowingly getting their bowl refilled from the bottom. In the study, people given "bottomless" bowls happened to consume 73% more soup than those who were eating from normal soup bowls, and despite their greater volume intake, they didn't notice they had consumed more, nor did they perceive themselves as more sated than the other eaters. The experiment supports the idea that visual cues related to food portions can influence volume intake without altering estimated consumption or satiation. Because social media feeds are bottomless, there are no visual cues indicating how much content is available for consumption. As a result, the user is vulnerable to consuming much more than intended, and experiences a distorted

perception of time. Similarly, "any behavior that distorts the perception of time may be mood altering".[14] By scrolling endlessly, you may therefore experience a feeling of escape, one criteria of diagnosis for behavioral addiction.[15]

It is no doubt that social media companies intentionally designed their platforms to be addictive. In fact, former social media employees have confessed that this is true. In an interview from November 2017, Sean Parker, the first president of Facebook said:

> "We need to sort of give you a little dopamine hit every once in a while, because someone liked or commented on a photo or a post or whatever…It's a social validation feedback loop exactly the kind of thing that a hacker like myself would come up with because you're exploiting a vulnerability in human psychology…"

If you're reading this sentence, I would like to congratulate you for resisting the urge of checking your phone for so long. At this stage of the paper, I suppose that you have acquired a better understanding of the way social media platforms are rendered addictive. Regardless, I discourage you to delete your accounts. Not only is erasing it made very difficult by design, but social media is a promising tool. You can connect with the world and share your voice without using drugs and alcohol, but not without using social media. The first step to combatting your addiction was to acknowledge the phenomenon itself. Now, based on your fresh knowledge about it, I have some incremental solutions for you, which I hope, will help counterbalance the negative addictive loops you're trapped in.

Before we start, I must confess that quitting an addictive habit is not easy, partly because of our muscle memory, making us unconsciously repeat certain movements we are used to. For instance, after deleting Instagram, some of you might have already

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[11] Lanier, Ten Arguments for Deleting your social media right now, (Minneapolis: Graywolf Press, 2016), 9.
[12] Ibid
[13] The autoplay mode of videos work under the same principle.
[14] Greenfield, D. N. (2021). "Digital distraction: What makes the internet and smartphone so addictive?" In Human capacity in the attention economy, 9.

[15] Seyyed Salman,"Behavioral Addiction versus Substance Addiction: Correspondence of Psychiatric and Psychological Views." 292.

experienced your fingers moving in circles around the erased app's recent location on the home screen, not knowing what to do next. Deleting the application can be counter-productive. First, because you find yourself fooled by your own body, and second, because smartphone companies have given you the ability to re-download the application from the app store, or access it from the internet browser at any time. You might think that keeping the app on your phone is less effective than deleting it. However, it has been proven by a psychological study that "making temptation available makes temptation less tempting."[16] This is why I am asking you not to erase it, otherwise you would find yourself tricked by your own mind into wanting to use social media even more. However, I must admit that this solution on its own might not be sufficient to many who are struggling with will-power issues— including myself. There must therefore be additional support accompanying it. You may use language which has proven to be psychologically motivating: "I choose not to use social media right now" instead of "I can't use social media". However, as psychologist Adam Alter mentioned in his book Irresistible: the rise of addictive technology and the business of getting us hooked, overturning behavioral addiction is more complicated than that. According to Alter, the alternative of pairing distraction with the suppression of a cue is key to overcoming bad habits. In the context of social media overuse, as discussed at the beginning of this paper, the primary cue stimulating us all into checking the platforms is the notification. I would therefore suggest to disable it as a first step. The second step would be to prevent the platform from distracting you visually. Making your screen grayscale renders the colors of the interface less enticing, especially the bright red of the notification badges. Consequently, the visuals in the news feed may become less attractive, as humans are ultimately more drawn to colorful media than

black and white. To make the newsfeed algorithm less addictive, identify the types of content that retain your focus on the platforms, and click on the "See Fewer Posts Like This" button located on the top right corner of each post. You can also train the algorithm by only taping on on the posts that interest you the least. This will prevent the system from creating a feed uniquely designed to capture and keep your attention.

Self-monitoring your own behavior can be risky because at any point you might disable these changes out of frustration. Hence, using technological tools which reinforce self-control will help you achieve better results. The answer to whether reward or punishment is more effective at changing behavior in people varies according to the population and the situation.[17] Since I don't know your preferences, I recommend Forest, an application gamifying the act of resisting social media with both rewards and punishments; you play the game by planting a tree and putting your phone down. Resist 25 minutes, and your tree will live. If you pick up your phone and switch to another app, you're left with the punishment of a dead plant. Upon developing lasting self-control, you're rewarded with an entire forest, a beautiful reminder of all the time you spent doing productive things instead of scrolling through Instagram. In case you're a person more sensitive to only punishments, I suggest using the SelfControl app, where you set a blocklist of applications you find distracting, along a timer. Once the timer is set, it's impossible to disable blocking, unless you reinstall macOS entirely, which would delete all of your apps and settings.

If you want real change to happen, and on a large scale, collective action is needed. It is important to help nonprofit organizations that are actively working for our technological well-being, by either participating in workshops, or donating to support their efforts. Not only are NGOs providing services to citizens, but their voice

[16] Myrseth, Kristian Ove R., Ayelet Fishbach, and Yaacov Trope. "Counteractive Self-Control: When Making Temptation Available Makes Temptation Less Tempting." Psychological Science 20, no. 2 (2009): 159-63.

[17] Lanier, Ten Arguments for Deleting your social media right now, (Minneapolis: Graywolf Press, 2016), 11.

has a greater impact than yours as an individual. In January 2018 for instance, Tristan Harris, a former technologist at Google, founded Center for Humane Technology, in the wake of the success of Time Well Spent, a movement he created back in 2013 with the goal of reversing the digital attention crisis. The nonprofit organization raises awareness and drives change through to global leaders and mass media campaigns reaching millions. Strikingly, almost half a year later, several major technology companies co-opted the movement, by announcing new design features on their platforms aimed at improving digital welfare. For instance, in May 2018, Google released "Digital Well-Being", a set of digital tools helping the users understand their technology usage and create healthy habits with their surroundings. A month later, Apple introduced "Screen Time", a comparable approach at solving digital overuse. This was a step forward in the battle against social media addiction.

While some responses to the efforts of NGOs are beneficial to the well-being of the users, others seem superficial. In July 2018, following the strike of the initiative, Instagram created the "You're All Caught Up" checkmark appearing on the newsfeed when the user has seen every post of accounts he follows from the last two days. What if the person follows a lot of people? Isn't he less likely to see the checkmark appear on his timeline, and therefore be rarely notified about his overuse? In the case of Instagram, the public tension from the organization didn't induce any drastic change in the user experience of the platform. This is why extra pressure is needed from a higher order, at a legislative level for instance. In 2019, Senator Josh Hawley coined the Social Media Addiction Reduction Technology (SMART) Act bill, prohibiting social media companies from using addictive design features, such as the infinite scroll, the elimination of visual cues, auto-play, and awards linked to engagement with the platform. It also instructs tech companies to set time limitations blocking the platform if exceeded, which can be controlled by the users. The bill, if passed, would make these attention-capturing tricks illegal and as Hawley stated, would "encourage true innovation by tech companies". Therefore, if you're a United States citizen, you could contribute to reducing social media addiction on a large scale by voting for candidates like Hawley.

Now that the reading has come to an end, I can confidently say that you're well prepared to curb your social media addiction. The next time you'll need to read a paper, I hope that you won't have your smartphone right next to you, calling your fingers to scroll two screens over and tap onto your most desired social media application. Social media can be a wonderful instrument, until it is overused and takes away our meaningful time. It is therefore important as a user to be aware of its addictive components in order to induce change on a personal and societal level. The question is, why should we have to remain so concerned about self-control? Can't we rethink a business model that doesn't exploit our addictive tendencies?
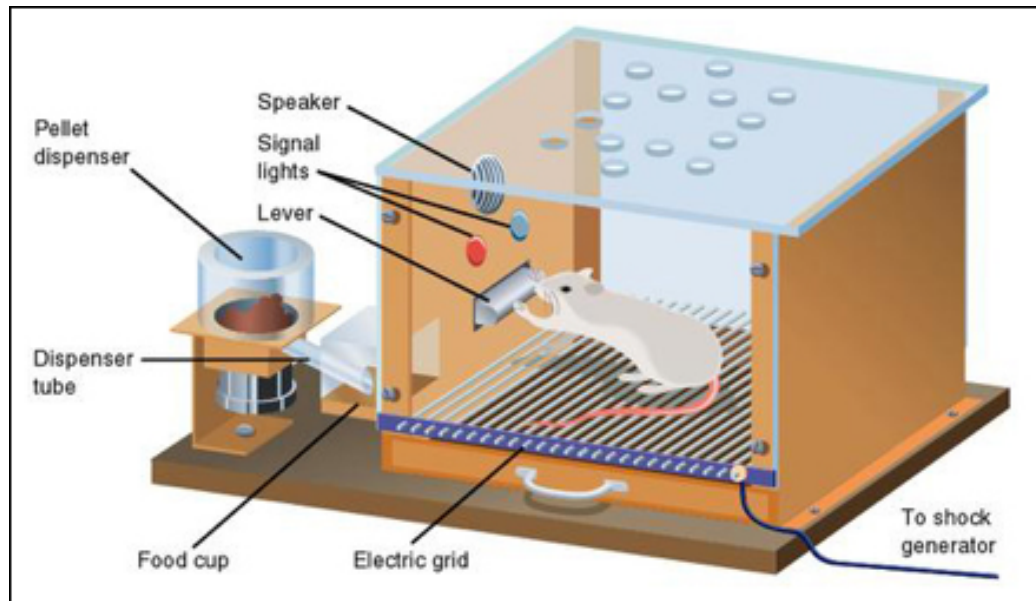
III.1 The Skinner box. Image source: www.simplypsychology.com

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