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Visualizing Digital Identity

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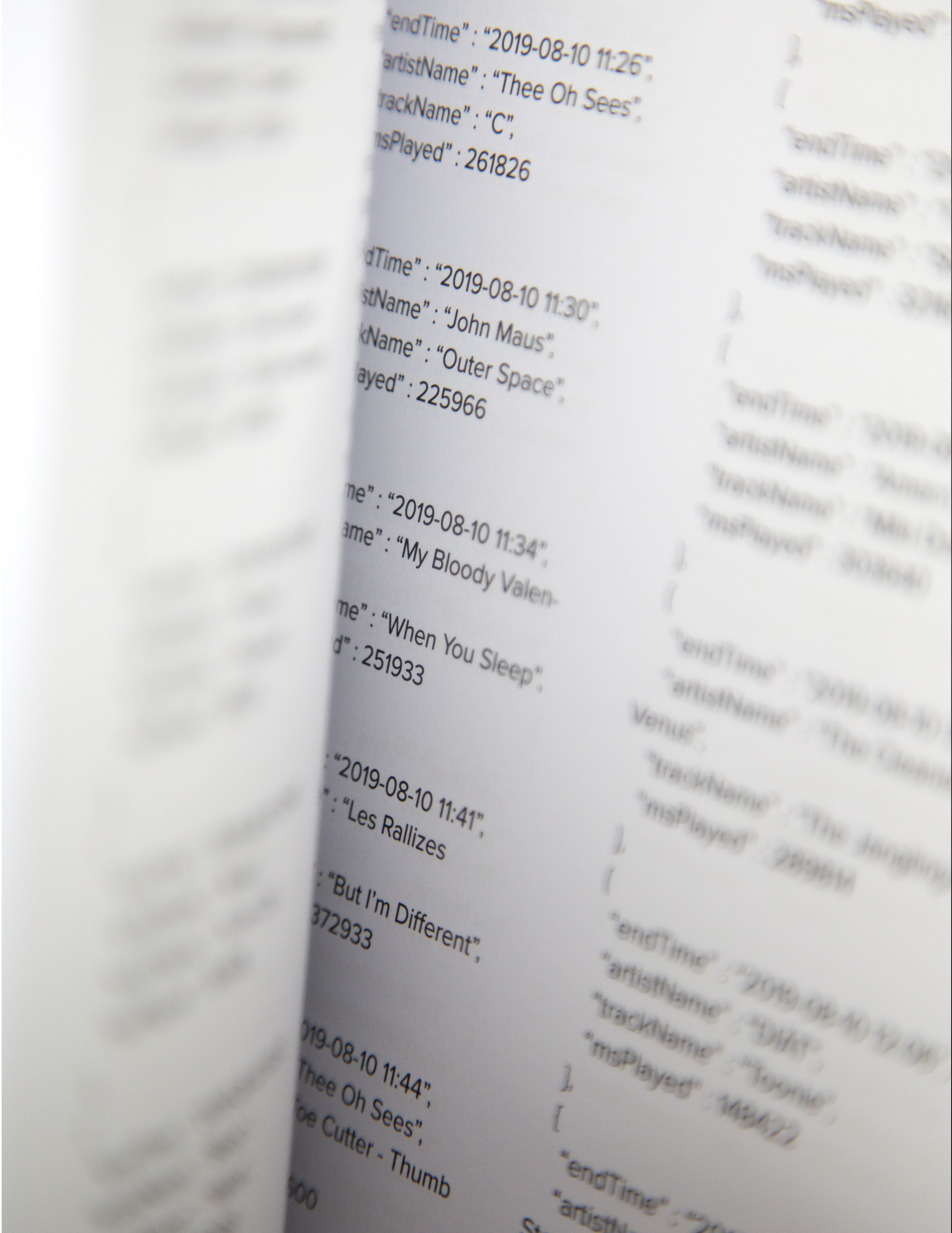
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Thank you, everyone!

Abstract

We cannot see what our digital identity looks like or view what it says about our behavior, feelings, or actions that are stored online. The data that is collected by surveillance from our smartphones build a fragmented and distorted reflection of ourselves. This stockpile of our data and this mirrored self it creates have become an increasingly valuable commodity that fuels the surveillance economy. While the existence of these datasets is not always obvious, they are attainable by request while the reflection of yourself they create is a heavily guarded secret. The digital identity created by this collection of data is explored through visual communication design. Datasets were acquired by applications such as Google, Spotify and Instagram from my smartphone. With this information I explore if design methodology can be applied to create a representation of my digital identity, and what critical reflections can these representations reveal about my digital identity? New processes were explored by using researching through design. In this process, the disconnections between concepts contained within the topic of digital surveillance and digital identity are analyzed. The scope of the project and the visualizations move through cycles of simplification as they narrow towards a place where a reflection can be made. These visualizations use Methodology from Surrealism and Discursive Design in their process and reflection. This recounts my research through design, and explores visualization of digital identity through using design as a medium for understanding. The visualizations move in a timeline through a series of iterative explorations. Each iteration contains its own context, process, and reflection. The iterative exploration moves towards understanding the digital identity by approaching the subject from multiple perspectives and executions of design. A theme of a distorted and fragmented reflection appears as the visualizations evolve in their process of iteration. The resulting understanding of a digital identity may never be finalized, but the resulting discourse invited through exploration becomes subjective reflections. This understanding of our fragmented and distorted reflections of our digital identity opens possibilities for further research.

Terms

The terms defined here are used to explain concepts within the topic of technology. These terms are regularly used, but also can be loosely defined. The following definitions are stated to clarify any confusion or misunderstanding that could arise.

Behavioral Predictions

"The use of techniques such as data mining, data visualization, algorithm clustering, and neural networking to find patterns or trends in data. These patterns or trends are used to forecast future behavior based on current or past behavior. Uses of predictive behavior analysis include identifying customers likely to drop out or default; identifying products customers are likely to buy next; developing customer segments or groups, and product development." (Gartner, n.d. b).

Big Data

"Big data refers to the large, diverse sets of information that grow at ever-increasing rates. It encompasses the volume of information, the velocity or speed at which it is created and collected, and the variety or scope of the data points being covered (known as the "three v's" of big data). Big data often comes from data mining and arrives in multiple formats." (Segal, 2021).

Data Broker

"A Data Broker is a business that aggregates information from a variety of sources; processes it to enrich, cleanse or analyze it; and licenses it to other organizations. Data brokers can also license another company's data directly, or process another organization's data to provide them with enhanced results. Data is typically accessed via an application programming interface (API), and frequently involves subscription type contracts. Data typically is not "sold" (i.e., its ownership transferred), but rather it is licensed for particular or limited uses. (A data broker is also sometimes known as an information broker, syndicated data broker, or information product company.)" (Gartner, n.d. a).

Data Mining

"Data mining is a process used by companies to turn raw data into useful information. By using software to look for patterns in large batches of data, businesses can learn more about their customers to develop more effective marketing strategies, increase sales and decrease costs. Data mining depends on effective data collection, warehousing, and computer processing." (Twin and Drury, 2020).

Digital Identity

"A digital identity is an online or networked identity adopted or claimed in cyberspace by an individual, organization, or electronic device. These users may also project more than one digital identity through multiple communities. In terms of digital identity management, key areas of concern are security and privacy." (Technopedia, n.d.).

Location Tracking

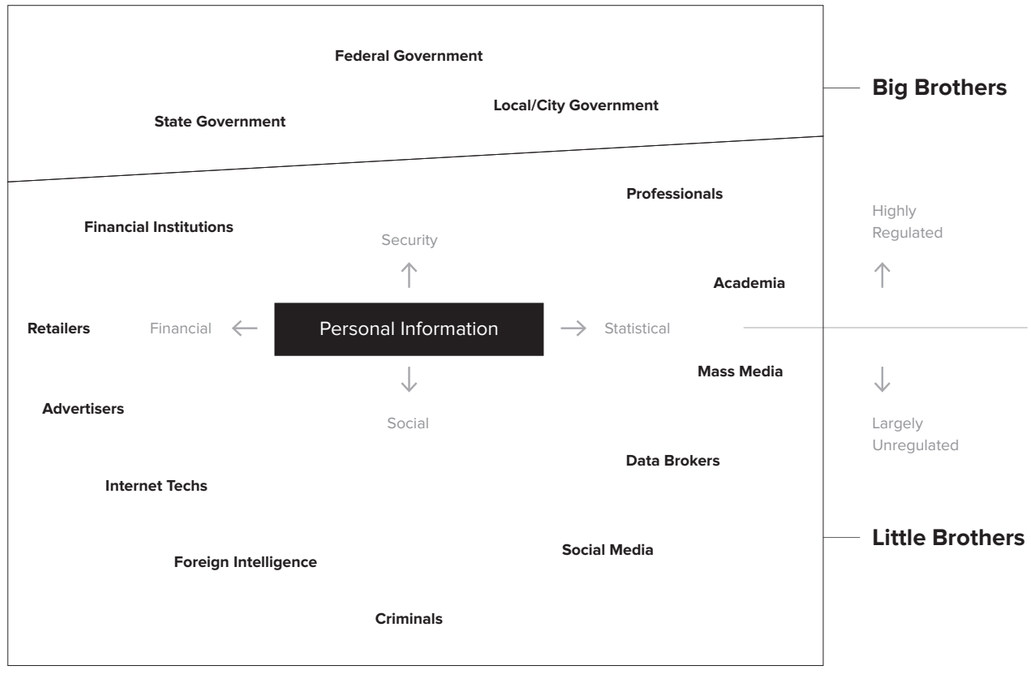
"Location tracking refers to technologies that physically locate and electronically record and track the movement of people or objects. Location tracking technology is in use every day with GPS navigation, locations located on digital pictures, and searching for businesses nearby using common apps. While location tracking is often associated with smartphone use since smartphones have a GPS chip, there are other ways location tracking is done." (bobology.com, 2020).

Surveillance Capitalism

"Surveillance capitalism describes a market-driven process where the commodity for sale is your personal data, and the capture and production of this data rely on mass surveillance of the internet. This activity is often carried out by companies that provide us with free online services, such as search engines (Google) and social media platforms (Facebook). These companies collect and scrutinize our online behaviors (likes, dislikes, searches, social networks, purchases) to produce data that can be further used for commercial purposes. And it's often done without us understanding the full extent of the surveillance." (Holloway, 2019).

Little Brother

Sometimes referred to as Tiny Brother. A loosely defined term to describe the surveillance technology and the companies or organizations collecting the data on the public (Figure 1). Unlike its early predecessor "Big Brother", Little Brothers are generally more numerous and on a smaller scale. It can include smartphone technology and also more simple technology such as key cards. The term is also concerning the storing, analyzing, processing, sale, and lease of this collected information on individuals of the public. (Kleinsmith, 2018).



1 / *Personal Information and Privacy Mapping* (Kleinsmith, 2018)

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1. Introduction

The idea of having a digital identity has grown out of our technological revolution, but it is unclear if we understand what that identity is. Most of us are also unaware of the scale and intrusiveness needed to build enough data to create a digital identity. In 2018 the Cambridge Analytica scandal revealed a lack of responsibility with our data and a lack of transparency on the part of the Tech Industry. Massive public outcry set the stage for stricter regulation and rights in regards to this abuse of power. (Privacy International, 2019). This was the first major story that had shown the value of our digital identity and how vulnerable it is. The data collected from our everyday behavior is what creates our digital identity. Since the Cambridge Analytica scandal, legislation like the General Data Protection Regulation 2016 (GDPR) has allowed us access to request our data collected from various organizations. *(Art. 17 GDPR – Right to erasure,* 2018).

Although, the data we are provided through request is a small piece of what our online existence is. The extensive data, or information, about ourselves is stored in massive collections where it can be sold to other organizations. (AlterEgo, 2017). The data becomes a raw commodity while the resulting reflection of digital self is heavily guarded as an organization's private property. In the *Context,* how this digital identity is created and our lack of understanding of what a digital identity is discussed. This missing understanding of what this digital identity is, and what value it has for revealing information about ourselves, leads the process of this master's project.

The Research Question asks how design methodology can be applied to create a representation of my digital identity. Also, what can critical reflections reveal about my digital identity. The idea that design can be used for understanding is explored using Visual Communication as a medium. (Snodgrass and Coyne, 1996). I was able to gain access through a request for my datasets from various organizations that are regularly used on my iPhone. The files I received were simple raw text documents in a large array of folders. They included every song I had played on Spotify, every comment I had left on Instagram, my location history from Google by month and year, and even what organizations were acquiring my data from Facebook. (Facebook, 2020; Google, n.d.; Instagram, n.d.; Spotify, 2020a). The data collections that were acquired are vast and range from specific to vague. I worked with the data sets I acquired about myself from these companies to create the visualizations of my digital identity. In the *Research through Design* a variety of processes were created to narrow the scope of the master's project and allow for critical reflection. This set up a workflow I created for simplifying the visualizations and added a system for reassessment needed to create a reflection of my digital identity.

The Research through Design worked hand in hand with the *Method and Methodology.* Aspects from Surrealism were paired with Discursive design for the purpose of visualizing my digital identity. *Methods and Methodology* were manipulated from these two overarching Methodologies while also new ones were created. The visualizations of my digital identity became experiments that explored using design as a tool for understanding. The experiments revealed a distorted and fragmented theme in the reflections.

Visualizations were created following *Iterative Explorations.* These explorations are representations of my visual identity. The development of the master's project follows each iteration forward, building upon the previous iteration. This timeline moves forward in a process of reflection which tried to gain an understanding of my digital identity. Each iteration explores its own context, process, and findings. The representations are reviewed for reflections to see what can be revealed about my digital identity. While these findings were individual, they come together for an analysis that looks at the themes that developed through this process. These themes raise questions that arise from reflections created through visualization as Findings through Prototyping.

The *conclusion* reviews what was gained through this master's project. It looks back onto the development of the research through prototyping and the applied design methodologies. This review leads to a discussion towards the future of the project and what new avenues of exploration can be pursued.

2. The Motivation

Before coming to Bergen, Norway to study I worked as a freelance graphic designer in the San Francisco Bay Area. During the Great Recession, the focus of the design community started to circle around the Tech Industry. The types of projects I was working on shifted from a print-based world to an online and digital world. I found that I had a deep fascination with the research methods used for designing digital products. Before starting any project we would analyze Google Analytics or heat maps from CrazyEgg. The people we viewed were put into neat and orderly buckets of personality types. It was in a sense recreating a person's identity based on the fragmented information we had available to us at the time. While this was compelling from a marketing perspective, it was also revealing that you could tell a lot about a person from simple data sets. Our motivation was to sell products or appease investors. We rarely questioned any potential ethical issues with our research. We only worried about the legal implications, if there were any. The public could simply wave their privacy away by agreeing to our terms and services.

San Francisco was the epicenter of the Tech Boom. Employees of Facebook or Twitter were receiving massive amounts of money as their companies became public. On the surface, these were incredibly successful companies. They had millions of users and dominated the news internationally. Their market values were massive, and at the same time, the reality behind these inflated evaluations was that they were based on the commodity of our data. We signed away our privacy before really knowing what the long-term effects could be.

As a designer working on these products I considered myself a piece of the machinery that was moving our technological revolution. Data collection was a normalized aspect of the profession and individuality was reduced to the term "The User". There was no way for me to stop and question what my role as a designer had in the larger context. Outside of my basic job role, I wanted to understand for myself what my role was in the mechanisms of this new technology and its impact on society. What I was working on at the time seemed like it was helpful to other people, but the realization that it could be harmful was starting to dawn on me. This was the point when I decided to step back and start to explore this dynamic in its deeper context. Focusing on this topic for my master's thesis seemed like the best way to remove the monetary value of my contributions to the world and learn how to analyze what is happening in different ways.

3. The Context

3.1 You Are the Product on The Internet

"You are the product on the internet." (Confessore, 2018). While we may or may not be aware of it, our personal data is being collected and creating a digital identity. This collection is happening on a massive scale in a very invasive way. The information is sold through a series of brokers from primary, to secondary and tertiary companies with little oversight into our protection or privacy.

"At least 75 companies receive anonymous, precise location data from apps whose users enable location services to get local news and weather or other information, The Times found. Several of those businesses claim to track up to 200 million mobile devices in the United States — about half those in use last year. The database reviewed by The Times — a sample of information gathered in 2017 and held by one company — reveals people's travels in startling detail, accurate to within a few yards and in some cases updated more than 14,000 times a day."
(Valentino-DeVries et al., 2018)

The personal data that is collected comes in the form of data sets. These data sets are what create our digital identity. What was originally our private data and identity has been transformed into a digital database and harvested for profit. This identity is a reflection of ourselves. It is a distorted and fragmented look into what our representation is online. It only tells a portion of our story but it also allows for a look at aspects of ourselves we may not recognize.

3.2 Digital Identity and Vulnerability

In March of 2018, the New York Times working with the Observer and the Guardian revealed a massive scandal. The private information of 87 million people was improperly obtained by Cambridge Analytica from Facebook to create voting profiles to manipulate the US election in 2016. The Cambridge Analytica scandal revealed a lack of responsibility with our data and a lack of transparency on the part of the Tech Industry. Massive public outcry set the stage for stricter regulation and rights in regards to this abuse of power. (Privacy International, 2019). We came to a realization that we are vulnerable and our data is something that needs to be protected. Our data is something of extreme value that we may not have been aware of. (Zuboff, 2019). The movement for protection has been slow and reactive and the repercussions of this scandal on the general public are still unfolding. Something as simple as a dataset could be used to manipulate people in the physical world. The connection between these two worlds could and did affect each other on a profound scale.

3.3 Little Brother is Watching

The smartphone is a key element in the data collection of location tracking. It acts as a spy we willingly carry around with us almost everywhere we go. The term Little Brother has replaced Big Brother in reference to the companies and organizations involved in monitoring our behavior through our smartphones. This level of surveillance is unprecedented in our recorded history. The information collected by Little Brother is generally taken without our knowledge. We give consent to collect and sell or lease this data within the Terms and Agreements of individual applications. There is usually little oversight into what information is taken, who is it sold or leased to, and what they do with it. (Thompson and Warzel, 2019).

The companies collecting the data we are referring to as Little Brother make a claim that your identity is anonymized to protect our privacy. The reality is that re-identification is possible depending on what information they retrieve. Any smartphone user's identity and location can be revealed and collected by your phone through your daily life without your knowledge. Even if you anonymize and detach your data there are still ways of reattaching it to yourself and revealing your personal identity. The reality is that we may never be able to separate our physical selves from the data that is collected. This level of unchecked surveillance poses a risk to our privacy to the level where it could be considered a national security threat. Unfortunately, this intrusiveness by Little Brother into our private lives is loosely monitored and under-regulated. (Zuboff, 2019, p. 244).

3.4 How We Create Our Digital Identity

The culmination of this data collection is creating a digital diary of our lives. From following something as simple as location data you can discern personal information like political affiliation, religious affiliation, drug addiction, a failing marriage, or even if a person has committed a crime. Things that we might not disclose publicly can become accessible through our current state of underregulated surveillance. This surveillance creates a reflection of ourselves and builds a digital diary. In this way, it can reveal intimate details about a person that is based on their movement. (Thompson and Warzel, 2019). What was recorded was only what the smartphone captured and not our feelings or input onto the situation. Your motivation, feeling, memory, or reasoning are left out from your diary record. This lack of input for context leaves our digital diary incomplete where it becomes a fragmented and distorted reflection of ourselves.

One of the main purposes of data collection is to create behavioral predictions for product sales. Amazon was at the forefront of data collection for the purpose of enhancing the user experience. Data collection became a valuable commodity and a large part of Amazon's business. The data that Amazon harvests from its customers has allowed it to become one of the largest companies in the world. (Jacoby et al., 2020). This data that is considered so valuable is essentially made from your actions to predict your behavior. These data and behavior predictions are a mirror reflection of yourself. It's a commodity reflection that we can only see glimpses of from targeted advertising or by requesting our data from organizations.

4. Research through Design

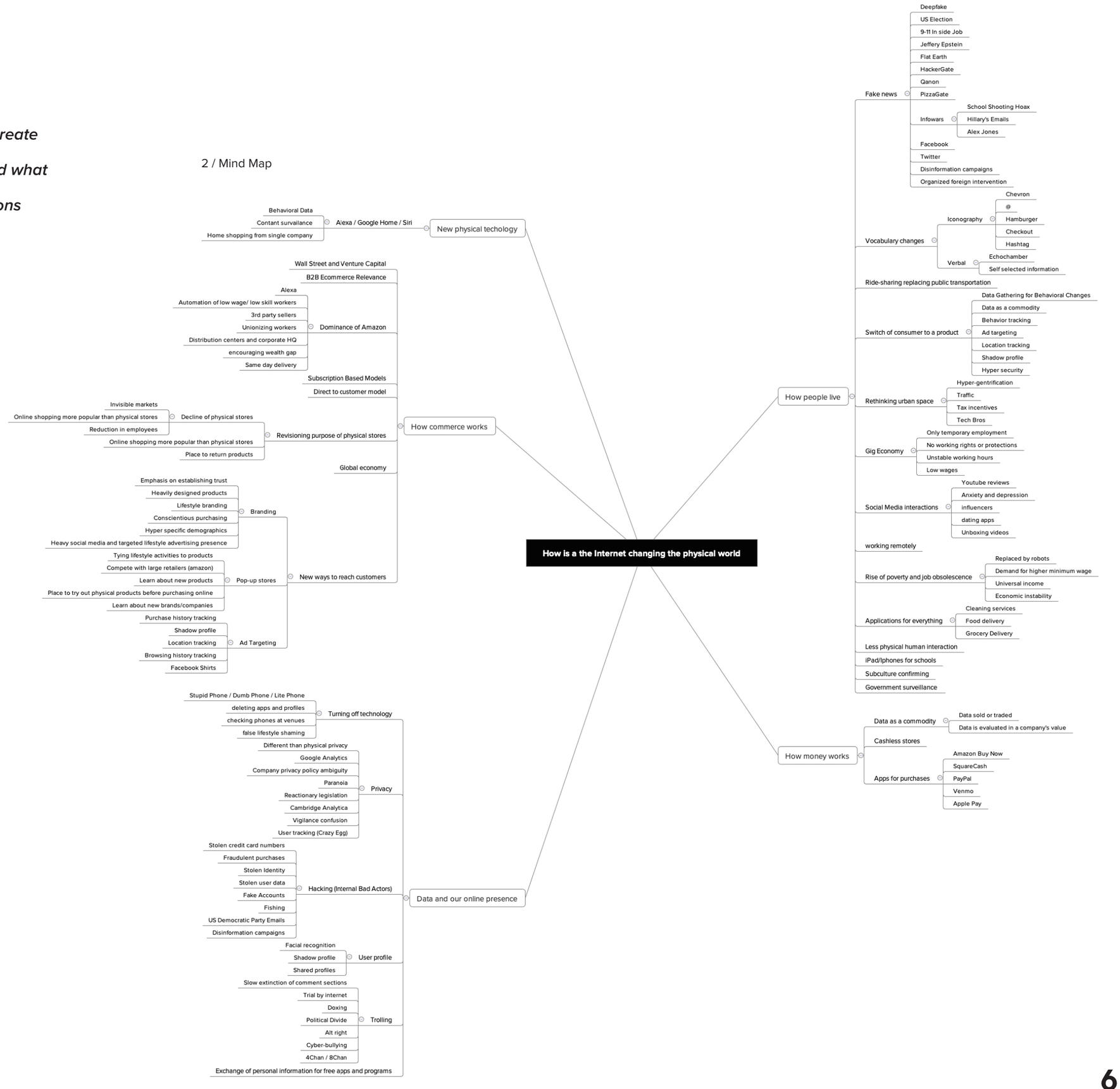
4.1 Research Question

How can I apply design methodology to create a representation of my digital identity, and what critical reflections can these representations reveal about my digital identity?

4.2 Process and Development

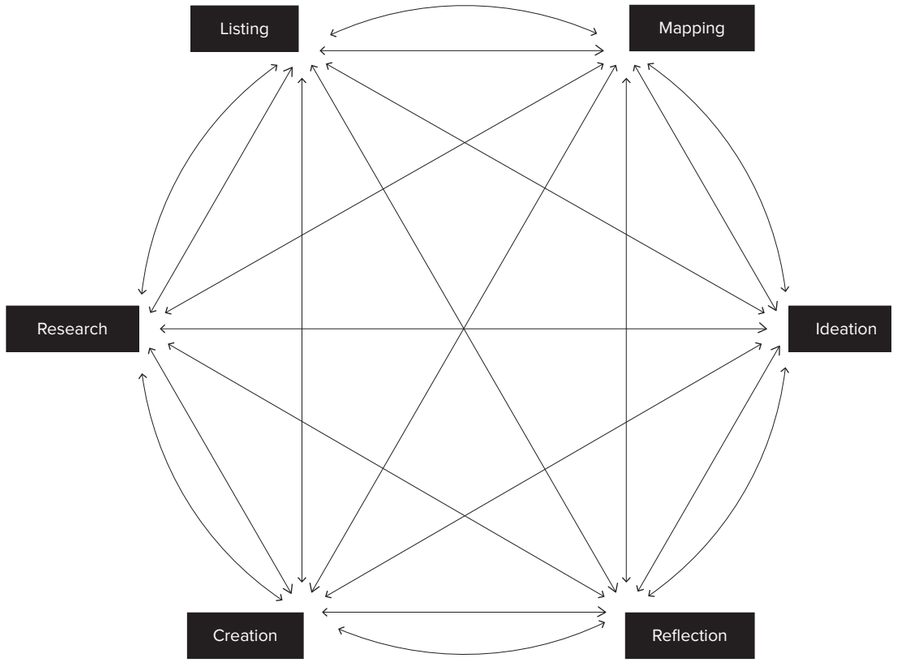
My master's project moved through an evolving path of exchange between academic research and visual communication practice. When beginning this exploration, I was overwhelmed by the number of possible paths my original interest in digital privacy and location tracking could go. In the beginning, I would balance my research with mind maps to see if I could get an idea for the landscape (Figure 2). The result was an intimidating mess that confused me more than anything else. The maps grew exponentially in what seemed like never-ending strings entangled in every direction. The research itself felt impossible to keep up with and the ideas for implementation in design felt cumbersome. When I would try to move into creating something from the research failed at communicating the topic. This led me to the realization that I would have to create my own process or any existing one used would have to be adapted to suit this situation. The process that developed through this master's project became a constant test of reevaluation to keep the development moving forward. Overall, the following processes developed to overcome this obstacle became a large part of the project itself.

2 / Mind Map



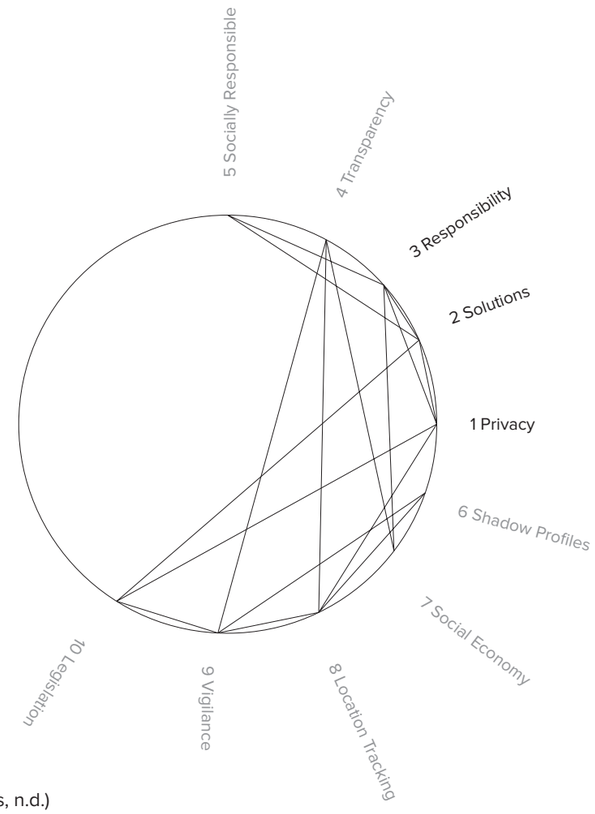
4.2.1 Cycles of Simplification

One of the largest challenges in my master's project is the massive scope. A considerable amount of effort is placed in the process of simplification of the research, the topic, and the design explorations. The design explorations are performed in a series of iterations that are explained in more detail in *5. Iterative Exploration.* These iterations move parallel with the methodology while working together to maintain the project momentum. This intertwined process created a cycle that moved through a series of steps in an unorganized repetition (Figure 3). In an ideal world, this cycle of simplification would have a clean start and finish point, but in reality, the process bounces from each spot to the other until the resulting representation gives a reflection of my digital identity. During the process, the idea being communicated can easily be lost or confused considering the massiveness of the possibilities shown through mapping. These cycles of simplification were the resulting process of a constant reevaluation at every step that was required to accomplish this challenge. Through each loop of the cycle, the characteristics of the iteration changed, becoming sharper and more clear.



3 / Cycles of Simplification

1. Privacy
2. Solutions
3. Responsibility
4. Transparency
5. Socially Responsible
6. Shadow Profiles
7. Social Economy
8. Location Tracking
9. Vigilance
10. Legislation

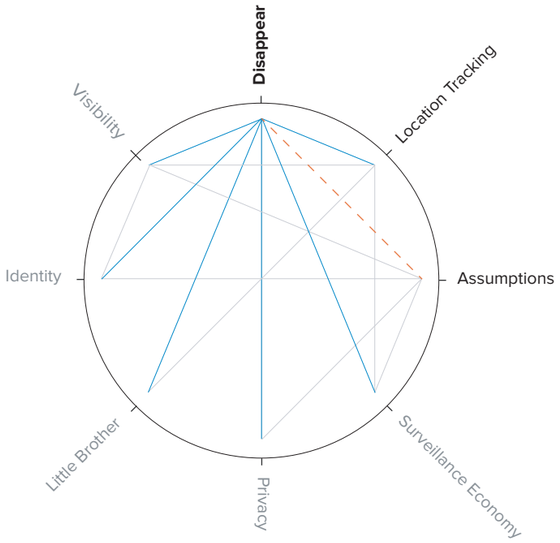


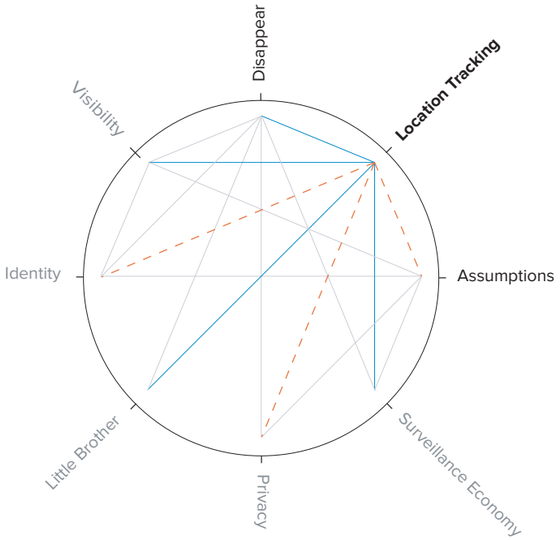
4 / Holistic Mapping. (Metadesigners, n.d.)

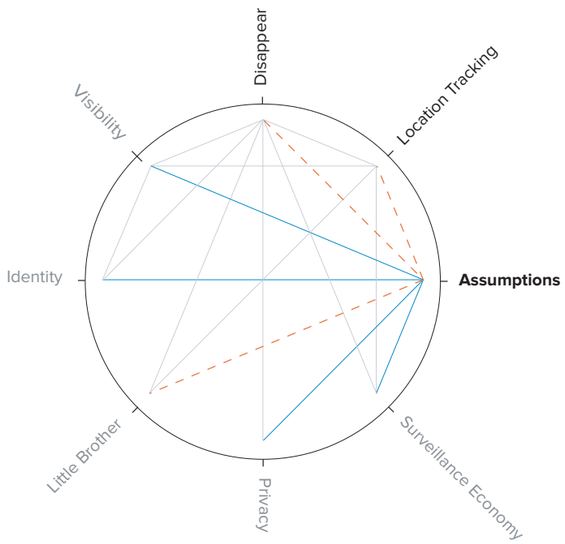
4.2.2 Perspective from Connections and Disconnections

In the early stages of the project, the topic was approached through a variety of exercises of holistic mapping that is provided by Metadesigners (Figure 4). The premise of this system is to analyze a project from multiple angles and dissect relationships to look for connections. (Metadesigners, n.d.). While this gave some direction for the development, I realized that my perspective and input were missing. The results felt too rigid to continue from. What I wanted to explore was a deeper look into the connections made between the areas I was stuck focusing on. A simple adaptation was taken to the exercise where the maps were revisited with the switched perspective of analyzing the disconnections. The result of this process allowed me to gain a more clarified look at the topic. The disconnections analysis seemed to help clarify my inferences and lead towards more critical visualization (Figure 5).

After having this breakthrough with analyzing the disconnections I looked for more exercises to see if anything would happen. There seemed to be something developing from this exercise that was worth pursuing. The following manipulation exercise was an Ikigai map. An Ikigai map is a mapping technique used to find meaning and purpose in life. (Wilding, 2017). While the traditional Ikigai map can help you reflect on yourself, I wanted to see if it can give perspective into an idea (Figure 6). The first tier may seem more obvious and was fairly easy to fill out. Though, the second, which represents the connections, was more challenging. Within this exercise, a personality started to form. The concepts pushed through the mechanisms of these exercises allowed for more interesting ideation within the project development and started to give an identity to the project itself.







5 / Disconnection Map, based on the *Holistic Map* by Metadesigners

Disappear

To cease to be visible.

Disappearing has the strongest connection and ties almost all aspects of the project together. Assumption is the only outlying word. I cannot make an assumption if something is not visible. There is something to explore in the middle space of these words.

Location Tracking

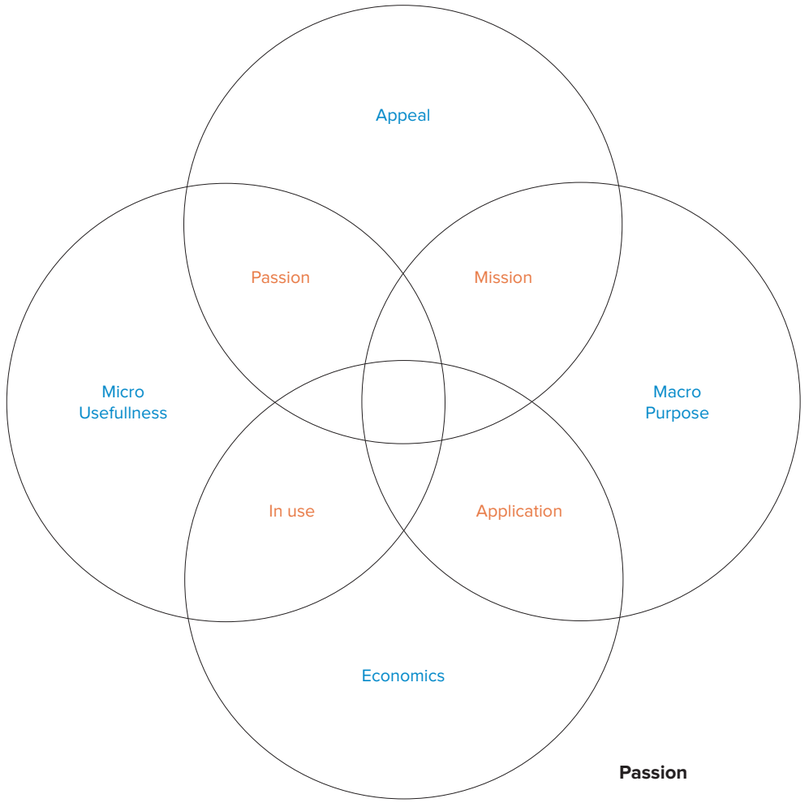
Location tracking refers to technologies that physically locate and electronically record and track the movement of people or objects.

Location tracking mostly deals with raw data. What it doesn't not account for is who you are as a person, the experiences you have, make any assumptions, or care about your privacy. The missing connections are made by adding another element.

Assumptions

A thing that is accepted as true or as certain to happen.

An assumption can be made from location tracking, but not the other way around. This is an interesting clarification. The line for Little Brother is less clear. The data derived from Little Brother makes assumptions, but the device itself does not. It is only a pocket size spy, it is a messenger of information.



6 / Based on Ikigai Map (Wilding, 2017)

Passion

For something to appear in the "clearing" it would need to be "unconcealed". My idea is that a space for invisibility would allow for clarity. Would not being viewed offer a perspective to what is viewed? Is a space for true disappearance even possible? Where would we find it?

Appeal

To offer a space of privacy. It is a chance to not be observed or recorded and to be free from assumptions.

Micro Usefulness

To retake ownership of your identity and data. To be able to make a conscious decision for when and how you are visible.

Economics

To acknowledge the value of your data (exhaust and diary). A recognition of the commodity aspect your location tracking has.

Macro Purpose

As a community the awareness can humanize data and privacy conversation. We could then establish protection and transparency.

In Use

What is missing is the ability to be anonymous or a non-participant. This could increase the value of your commodity or at least grow in your potential of ownership.

Application

Big Data is useless in its raw form. We need to creating algorithms and AI that allow to find value in the data. Is there a possibility to disappear into the crowd?

Mission

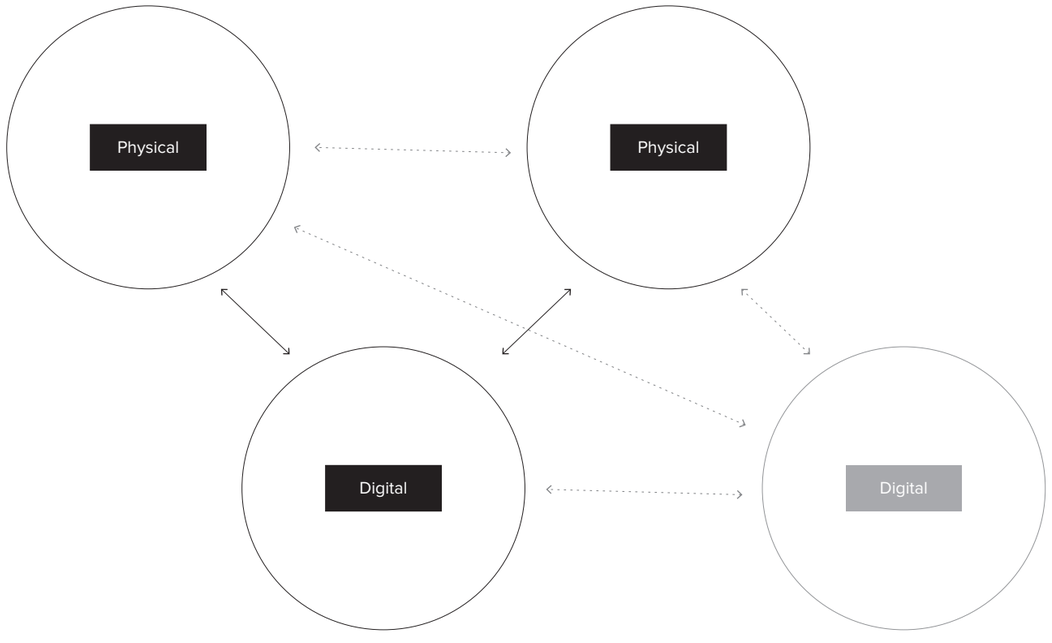
By disappearing we are taking charge of the situation. We do not know how much data exists about us or what it is used for. We also have no idea of the true value or potential of our data. To disappear is a tool we can use.

4.2.3 Representing My Digital Identity

While dealing with the idea of a digital identity the acquisition of data to work with poses a problem. The context of this project raises the issue of invasiveness within data collection from smartphone technology (See *2.2 Digital Identity and vulnerability).* To allow for uninhibited access to datasets without ethical or legal complications I decided to use myself as the test subject. This made the representation aspect of the research very personal. While being the source of the data meant the reflections were mine, I want to give ownership of the results in this experiment to the public. Each project gives detailed directions for the viewer to also access their data to hopefully invite interaction within the project.

4.2.4 Developing Distorted and Fragmented Reflections

While moving through the processes of simplification and analyzing the disconnections an interesting theme started to develop. This theme moved into the core of the research as a foundation to build upon. The data being used in the research explorations were going through a cycle themselves and transforming. My physical actions were being documented into a digital format, which I then acquired by myself, and then represented physically (Figure 7). During this cycle, the representations became distorted and fragmented reflections. This recurring theme became the reference point to qualify the experimentation iterations for further research. Every project is tested to ask if there are aspects that are distorted, fragmented, and a reflection. If that moment of development is missing this element the process proceeds by throwing itself back into the simplification cycle (Figure 3).



7 / Movement of Identity

5. Methods and Methodology

5.1 Methodology

My master's project follows an evolving mix of methodology. I did not strictly adhere to any particular one, but made a blend by borrowing or manipulating existing methodology or creating new methodology to experiment within my research. The overarching goal of this project is to encourage criticism, debate, and question the purpose of digital surveillance. During the research process to simplify the scope, mentioned in *3.2.1 Cycles of Simplification,* a methodology was needed to give a perspective that could work in tandem with the process. It was this perspective input that allowed my Digital Identity to evolve into a physical representation that could be used as a reflection.

While this project falls within Visual Communication, the traditional models of design have been abandoned to seek what lies deeper in the explorations. The overall goal is to question the connections that reveal themselves as it evolves through reflection. The function of problem-solving as a designer is not addressed but shifted through the Discursive Design model to bring a critical perspective to the problem itself. I intend to question the role of the designer and the designs within the mechanisms of surveillance capitalism and our Digital Identity. The project is viewed from my research question with a series of experiments to explore different reflections. It is within these reflections the analysis can be used for the hopeful premise of attaining a better understanding of these questions. (Tharp and Tharp, 2019, p. 367).

5.1.1 Surrealist and Discursive

"Discursive design refers to the creation of utilitarian objects/services/interactions whose primary purpose is to communicate ideas—artifacts embedded with discourse. These are tools for thinking; they raise awareness and perhaps understanding of substantive and often debatable issues of psychological, sociological, and ideological consequence." (Tharp and Tharp, 2013)

To follow this model to create a representation of our Digital Identity for reflection we first need to understand what the utilitarian purpose of our Digital Identity is. This question became the most interesting part to me and the basis of the research question. It is uncertain what our Digital Identity is in the first place. This thought from Discursive Design was not abandoned but manipulated to include methodology from Surrealism to fix the missing aspect of what this thing could possibly be.

Max Ernst gave a considerable amount of focus in his works towards the representation of what he considered "unresolvable alienness". (Ernst et al., 2008). The quest to attempt to visualize a Digital Identity falls into the idea of visualizing an unresolved entity that is unfamiliar. Surrealism

aims to move past rationalism and explore the dream state or unconscious mind. Under this methodology, surrealist artists have created a variety of methods to visualize and reflect on the results. An emphasis within the work is placed on the spontaneous and the relationships created when attempting to automate their expressions. (Brotchie, 1995). The methodology used combines this attitude of embracing spontaneity, automation, and the unknown with the Discursive Design model of creating to invoke a reflection of a Digital Identity.

5.1.2 Design as a Medium for Understanding

A large aspect of this exploration is to gain a better understanding of my digital identity by using Visual Communication Design as a medium. The process of understanding through design can be described as hermeneutical. The digital identity is in itself something that is challenging to understand. Using design as a visualization tool means using familiar design language or methods towards a goal that may not fully be known until it is achieved. (Snodgrass and Coyne, 1996). It is a fundamental change from the traditional methodology of a designer as someone who solves problems but moves it to the role of someone who reveals problems for critical reflection. This question is a theme within the Discursive and Critical Design Methodologies. Dunne and Raby make a clear distinction between a traditional designer and a critical designer. The contribution a critical designer makes is asking questions instead of answering them. They are problem-finding instead of problem-solving and use design as a medium instead of a solution. (Dunne and Raby, 2013, p. vii)(Figure 8). This allows design to be used as a medium for understanding. Critical reflection becomes part of the design process and affirms the work as critical design.

5.2 Methods

Creative methods used in this project were created or manipulated during the development process. While in this process the creative methods were interchanged at the moments of reassessing (see *3.2 Process and Development).* The applied design methods, on the other hand, used in this project were purposely physical. The actualization of the data using physical design methods allows for a reflection detached from its original and natural state of being. It reveals the absurdity of the situation. While the objects made through exploration are very physical, they borrow from Surrealist Methodology in that the object can move from normal to provocative. This illogical application encourages our natural reaction to question the purpose. By giving a glimpse into impractical aspects of our digital culture we can view the content from a new perspective.

5.2.1 Experimentation with Perspective as a Method

With the combined methodology of Surrealism and Discursive design, there was also an aspect of reassessing that was referenced throughout *3.2 Process and Development.* This reassessing also required various methods to continue in the development process. This reassessing required a shift in perspective to continue the evolution of the project. This constant reevaluation within the process dictated when and if a method was adjusted. When reassessing the exploration underwent an analysis to see if it was reaching the aspects of a distorted and fragmented reflection (see *3.2.4 Developing Distorted and Fragmented Reflections).* Brian Eno developed the *Oblique Strategies* as a method of changing perspective while in the development of a project. (McNamee, 2009). This idea of reassessment by changing of perspective became intrinsic in the process. Applied methods could be used as tools to view these different angles of a project to continue development. In *A Book of Surrealist Games,* there is an exercise *To Determine the Irrational Characteristics of Objects.* In this exercise, the participant is asked to shout out answers to a series of questions without thinking. (Brotchie, 1995, p. 118). As an example, that was used for this project, the object was changed into the developing identity of the project (See *3.2.2 Perspective from Connections and Disconnections).* The result was interesting in that it gave a personality to the forming identity (Figure 9). As the project developed the experimentations became iterative. These perspective exercises allowed for more depth and uniqueness of each iteration, but also kept them unified in their core.

A	B
Affirmative	Critical
Problem Solving	Problem Finding
Provides Answers	Asks Questions
Design for Production	Design for Debate
Design as Solution	Design as Medium
In the Service of Industry	In the Service of Society
Fictional Functions	Functional Fictions
For How the World Is	For How the World Could Be
Change the World to Suit Us	Change Us to Suit the World
Science Fiction	Social Fiction
Futures	Parallel Worlds
The “Real” Real	The “Unreal” Real
Narratives of Production	Narratives of Consumption
Applications	Implications
Fun	Humor
Innovative	Provocation
Concept Design	Conceptual Design
Consumer	Citizen
Makes Us Buy	Makes Us Think
Ergonomics	Rhetoric
User-Friendliness	Ethics
Process	Authorship

8 / (Dune & Raby, 2013)

9 / *To Determine the Irrational Characteristics of Objects* (Brotchie, 1995, p. 118)

Is it diurnal or nocturnal?
Both

Is it favorable to love?
No, love has no room here.

Is it capable of metamorphosis?
It never had a shape in the first place.

What is the position in relation to the individual?
It’s my reflection, distorted, full of lies and honesty at the same time.

What era is it from?
From the beginning of humanity

What element is it?
Fire

With what historical figure can it be related to?
Argus Panoptes

How does it die?
Being poisoned from within.

What should it meat with on a dissecting table in order to be beautiful?
A mirror.

What part of a naked sleeping woman’s anatomy would you place on it?
Her hand.

And if she were dead?
Her other hand.

What illness does it call to mind?
Addiction.

What part of Paris does it live in?
The air.

What might it's profession be?
Informant.

What material do you see it wrapped in?
Money.

Is It happy or unhappy?
It hasn't been decided yet.

What language does it speak?
Math

What place does it occupy within the family?
The cat

How does it get around?
In a pocket of a pair of jeans.

What scent goes with it?
Mechanically glued cardboard.

Which painter does it correspond to?
Norman Rockwell.

6. Iterative Exploration

My master's project follows an iterative process of explorations. This is an application of the idea proposed in the essay *Is Design Hermeneutical* where the writer suggests that we may not know what the goal of our design is until we have reached it. (Snodgrass and Coyne, 1996). Attempting to visualize my digital identity proposes its own challenges. As stated in *4.1.1 Surrealist and Discursive* the object of a Digital Identity is uncertain. Visualization of a Digital Identity means the attempts towards visualization also needed to be explored along with the idea that this experiment will invite critical reflection. Since the object of the Digital Identity is uncertain, the visualizations will also remain unresolved. This uncertainty led the development process to evolve into a timeline. Each iteration seemed to carry as much weight as the last and share in the importance of reaching this unknown goal. The iterative explorations use a different combination of process, methodology, and method each time while building upon the last. This allows for different perspectives of the visualization while also building to reveal aspects of the visualization. While each resulting visualization varies, it is in the hopes that these iterations can explore ideas that will lead towards a better understanding and invite critical reflection.

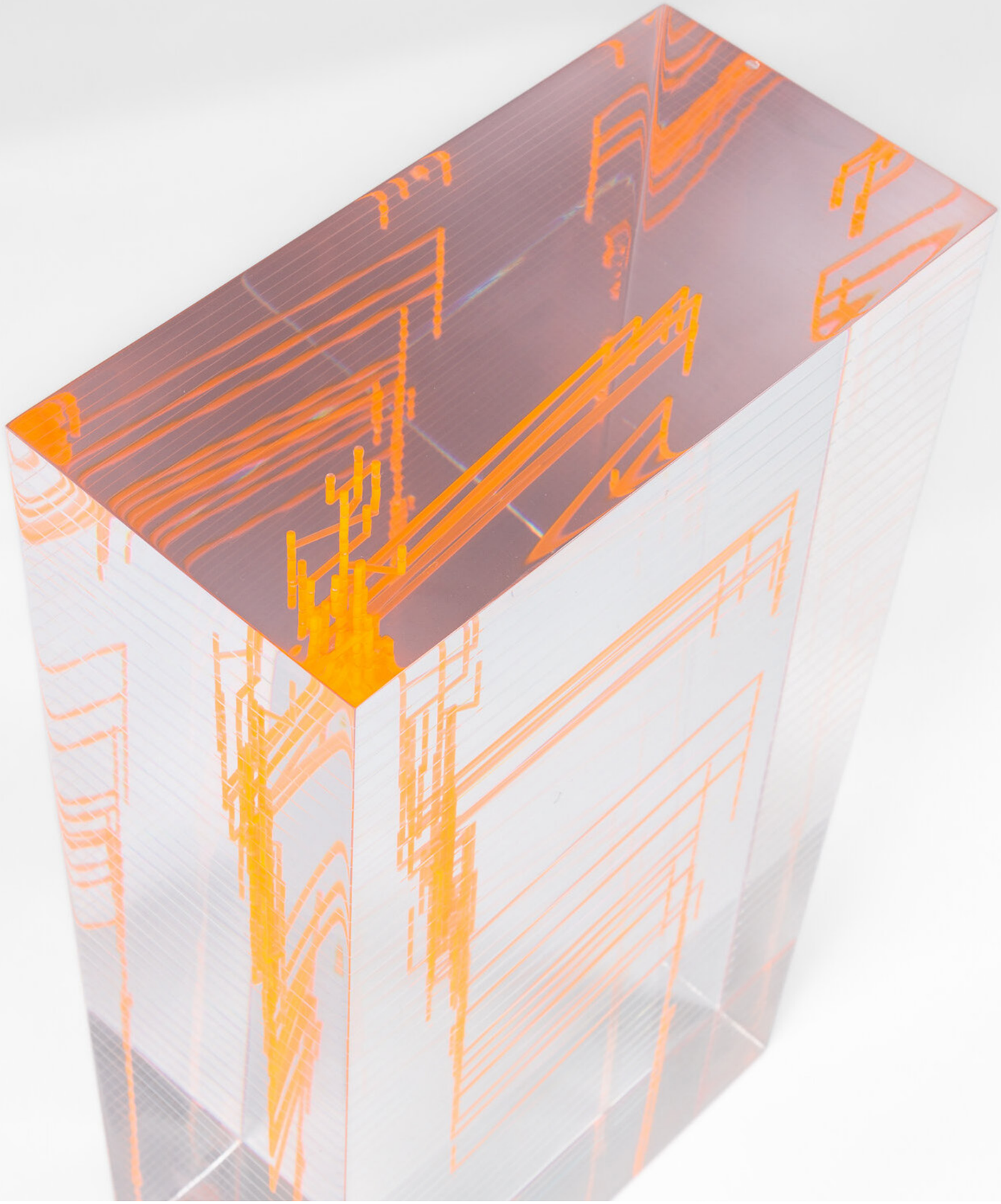
6.1 My Path

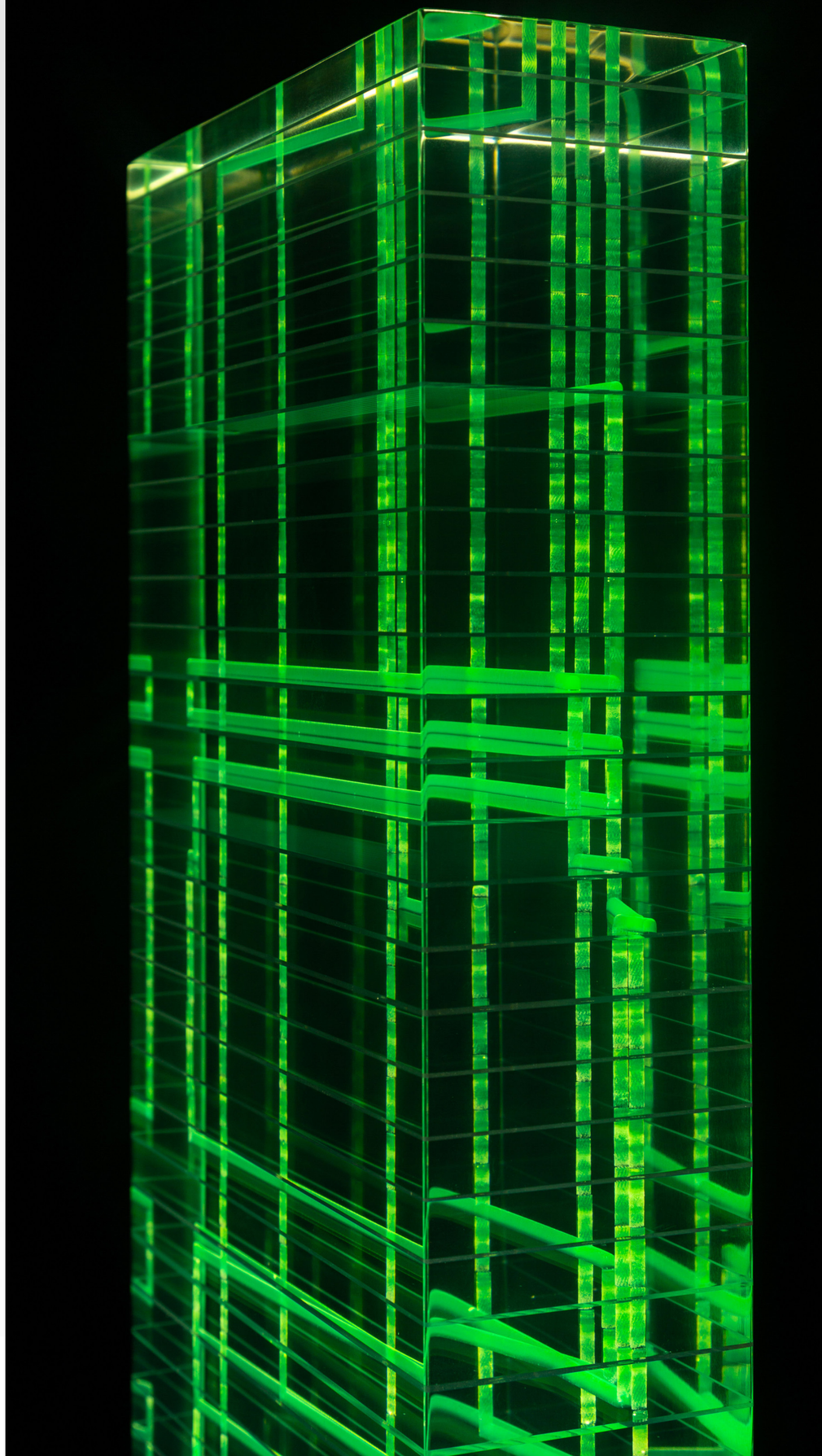
6.1.1 Context

My Path was created in The Power Object class tutored by Charles Michalsen and Hans Sagan. This was my first iteration on the project evolution and exploration into visualizing my digital identity from the aforementioned available datasets from my Google apps on my smartphone. In this class, we posed the question of where we come from. I had recently arrived in Norway after spending a few months moving from Oakland California. That summer was spent driving the length of the continental United States from California to New York by myself. I was constantly on Google Maps trying to figure out my next move and also alert friends and family to my location in case something went wrong. There are still large areas of America that have limited or no phone service. Specifically, US Route 50 through Nevada which advertises itself as the "Loneliest Highway in America". This is when I started to get more familiar with the tracking my phone was doing of my movement. During this trip, I compared my Google Map history to my known location and analyzed both the path and the destination to decide where my next move would be. The main highways that run through the United States are good for moving fast, but the smaller highways and rural roads offer more scenic exploring. I knew it would be a long time before I would be able to return, so I tried to make the most of the situation. Google maps let me know where to find gas stations, grocery stores, and places to camp. Within each location, on the map, I could explore hiking routes and read tips from the reviews for things to check out. While this became a daily routine, I noticed the Google Map application was keeping records of my movement even when no phone service was available. I was able to retrace my steps through the entire trip and view where I had stopped to take photos. (Figure 10). While the spontaneous planning for my next move was up to me, the application was tracking my location and sharing the information with my Google Photo archive on its own.

Stephen Cartwright's *Location Project* (Figure 11 and 12) is a visual representation of movement over space and time in a physical form. Similar to the tracking I was doing on my trip, Cartwright has been self-tracking himself and his family members and compiling this data to create his visual representations. His project becomes a meaningful representation of data visualization with a focus on a destination that has been cross-referenced with a specific time in a linear chart. *"Tracking information and location somehow solidifies into existence the ephemeral things in life."* Stephan Cartwright. (Leavitt, 2019).

10 / My Google Photo Map and Corrosponding Photos, 2019





11 / 12 / *Location Project,* Stephen Cartwright *2*019 (Cartwright, 2019)

13 / *A Line Made By Walking*, Richarrd Long 1967 (Tate, 2007)

Google Maps marked my locations but also revealed the paths I had taken. Richard Long explored the concept of repeated movement in a physical environment throughout his artistic career. His earlier piece *A Line Made by Walking* documents his repeated movement through a field (Figure 13). The repetition of movement transformed the environment to show his path. This was one of his first instances that later led to his work using walking as his artistic medium. In Long's work, a path is created through repetition and use. The more a path is used the more clearly it reveals itself in nature. Burgon, 2012).

14 / My Path, 2019

6.1.2 Design Process and Description

My Path is a physical representation of my movement in a period of one week (Figure 14). The location data was collected through Google Maps on my iPhone and compared to notes taken from when I reached a specific endpoint. Each destination was marked with a pin on a flat black plane. My movement throughout the week was represented by a single gold wire that was threaded in order starting from the first day. The materials for the locations and movement were chosen to give a sense of importance and value. Any other information was concealed by using black. The information presented represents a simplified visualization of my raw location data.

6.1.3 Findings and Discussion

The process of iterative design gives importance to each step of the visualizing process. (See *3.2.1 Cycles of Simplification)*. A critical reflection became an overarching theme for tracking my location. Since this was my first exploration this realization became very profound and has influenced the rest of my work throughout the iterative process. Through the idea presented in the hermeneutics of design, we don't always know what we are trying to achieve until we reach that point. (See *5. Iterative Exploration).* It becomes part of the process of designing, but more importantly, it is also the process towards understanding. (Snodgrass and Coyne, 1996).

When I first started tracking my location I thought it would be a mess of destinations strewn throughout the Bergen area. The truth was something more interesting. What started to reveal itself in only a short matter of time was that there was a very clear pattern forming. Maybe it's human nature to think of myself as unique and interesting in my behavior. The reality is that it was extremely predictable. I perform the same tasks and visit the same stores in an almost ritualistic way. The movement in this iteration shows a clear pattern. You can make assumptions about where my home is, where my school is located, or where I get my groceries. My movement in this matter becomes predictable. While it shows patterns in my movement, the viewer is left to assume the rest of the story. Any experiences, memories, or actions taken within these locations are not clear.

6.2 The Right to Disappear

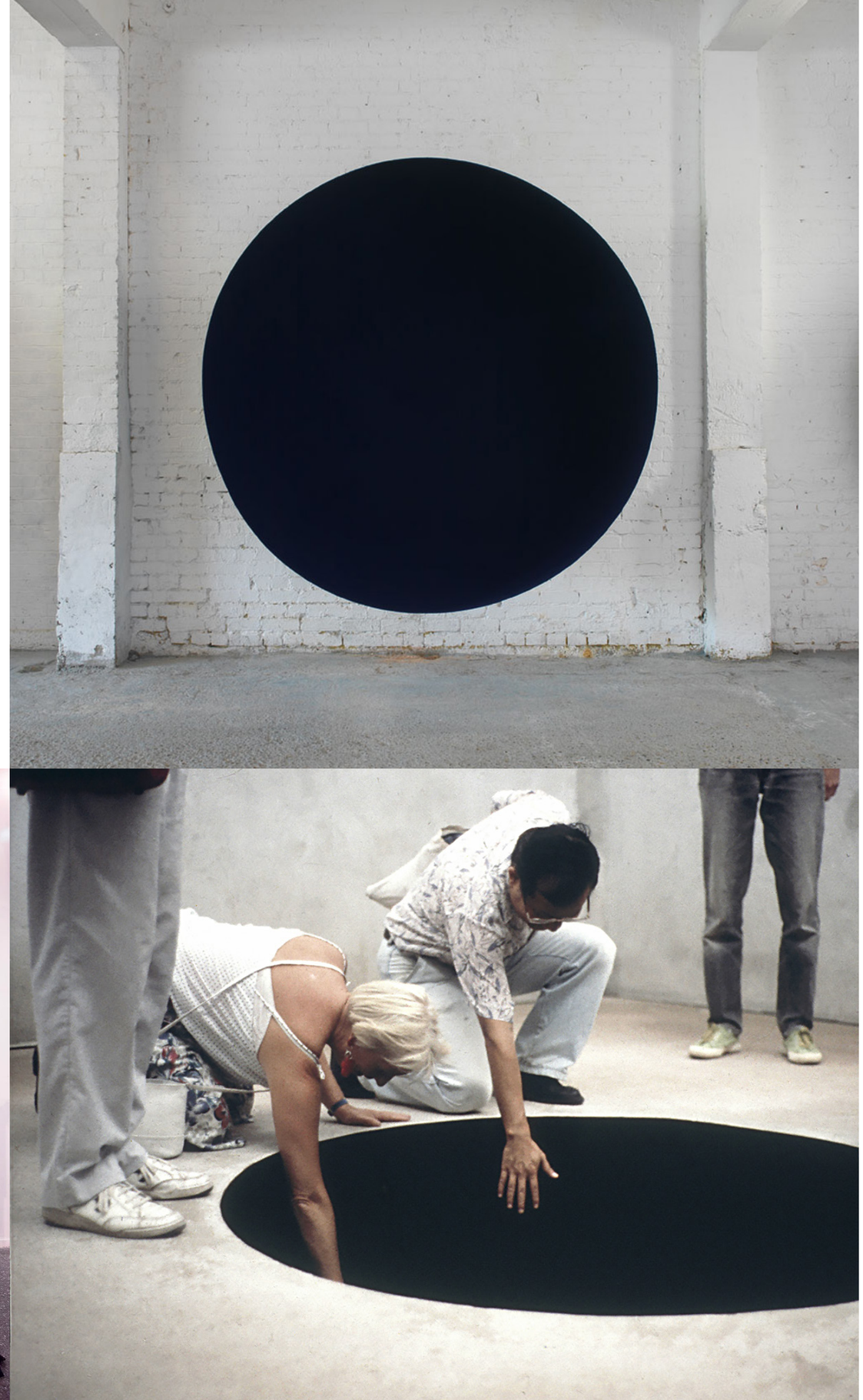
6.2.1 The Context

The idea for this iteration came about from reading through the GDPR legislation for *The Right to Erasure,* which is also known as the right to be forgotten. The actual legislation within the GDPR contains an article that gives the option to be forgotten or erased by request. *(Art. 17 GDPR – Right to erasure,* 2018). The larger question is if this is even possible. The complimenting article from the GDPR provides the ability to access our data. The idea is that we can use this legislation as a means to request to remove our personal data from a specific organization. The interconnectedness of the internet, the knowledge of your data existing in the first place, and the trust for the organization to delete your data pose serious concerns for this article of legislation. (GDPR.EU, 2018).

I Agree (2018) was designed by Dima Yarovinsky (Figure 15). It explores the visualization of the "Terms of Service" from various popular web applications like Facebook, Instagram, and SnapChat. His design exposes in a literal and critical manner the absurdly long length of these standard agreements that are rarely read. Each "Terms of Service" is written on a long flowing piece of paper with a simple description at the end stating the word count and the average length of time it would take to read the document. He points to the issue that we rarely read these documents and in general have little idea of what we are agreeing to. (Taggart, 2018).

The information regarding our online privacy and rights is hiding in plain sight. While searching for ways of concealing information I started looking at the technology and controversy surrounding the darkest pigments available. Vantablack, which stands for "Vertically Aligned Nano Tube Technology", was created by Surrey Nanosystems to absorb 99.965 percent of light. This was not made as an artistic endeavor but a scientific exploration within the tech industry. Currently, it is only licensed to Anish Kapoor for use in the arts. (Le, n.d.). His interest in creating a lack of space is evident in his work. "That's what I am interested in: the void, the moment when it isn't a hole. It is a space full of what isn't there." – Anish Kapoor (Wolfe, 2020) (figure 16 and 17). What caught my attention was his reaction to what isn't there. While the Right to Be Forgotten exists, its lack of awareness and protection leads to the idea that it acts more like something that isn't here, or in other words something that is hiding. The darkness he creates in his work creates a captivating and surreal experience that questions what is really there. Stuart Simple was able to recreate his version of Vantablack that he calls Black 3.0. It was released to the market with a waiver that clearly states it is available to anyone in the world besides Anish Kapoor. (Guardian, 2019).

15 / I Agree, Dima Yarovinsky (Yarov, 2018)



16 / Void, Anish Kapoor 1989 (Kapoor n.d.)

17 / Descent into Limbo, Anish Kapoor 1992 (Kapoor n.d.)

6.2.2 Process and Description

The purpose of this iteration was to create a physical representation of the legislation for *Article 17: Right to Be Forgotten of the GDPR*. Through the research for this iteration of my project I decided to change the name to *The Right to Disappear.* This had a better representation for making the legislation physically hide in plain sight. The text was taken directly from the article and placed into a typical publication layout for a book. The text was then manipulated to give a wave-like appearance that is common for Captcha and printed with black ink onto black paper with a Risograph. The Captcha is a simple online test to prove the viewer is human and not a computer program. (Captcha, n.d.). The pages were bound into an accordion fold which is a typical method of compacting a large amount of text into a website that allows for the content to be hidden or revealed with a simple interaction of unfolding. The cover of the book was painted with Stuart Semple's Black3.0 acrylic paint. When viewing there is no indication of the content within the book. There is no directional indication of which is the cover, which page has any content on it, or even what the book contains at all. Trying to physically read the book is a challenge. When you open the book as a typical person would, the pages fall out creating a physical challenge to manage and read. The final result is a book that is just larger than the usual pocket that gives the representation of the Right to Disappear (Figure 19).

6.2.3 Findings and Discussion

The phrasing of the title for the Right to Be Forgotten invokes a feeling of being able to vanish or disappear, but the wording within the legislation is more carefully chosen. The use of the word forgotten implies that the only control you can have over the collection of your data is to try to react without prevention through choice. The larger critical question is if it is even possible to truly be forgotten? The responsibility lies on the individual to take the initiative to be forgotten. There is also little insight into what collections exist, what data was removed, and whether you can trust the organization to forget after the request. If we want to move towards having control of our data-collection we would need to have never appeared in the first place.

Online there are tactics to hide this information in plain sight. Tiny links can be placed in the footer, simple statements can be buried within massive in Terms of Service agreements, or live deep within a multilayered account section for example. When these methods are performed in a physical form the normalization is, perhaps, dissolved. This can allow for a critical reflection as these methods become less familiar to us when confronted by its physical representation.

If the word forgotten is replaced by the word disappear the iteration becomes more powerful. This thought came through the contemplation of assembling the book. In the act of thinking about ways of hiding in plain sight, the focus became less about forgetting and more about disappearing. The information is there, but you need to understand how to access it. Disappearing changes to something that can be controlled from not only the past tense but also before and during data collection. It gives an impression of being able to opt-out. This iteration started as a personal project that moves to something to ask the audience; would you like to be able to be forgotten or would you like to be able to disappear?

18 / *Right to Be Dissapear,* 2019

6.3 The Hotdog

6.3.1 Context

I have been using Instagram since it was first made available in the United States. The smartphone application was only a few weeks old when I added the app to my phone. This was back in the fall of 2010. Since then, I have posted over 2,000 images and over 100 videos. In 2012, after only being around for a few years, Instagram was acquired by Facebook for the sum of USD $1,000,000,000.00. (Rusli, 2012). Ever since Facebook has worked to merge their apps. This has raised concerns about privacy and security as the apps, which were previously separate, will begin integrating user's data. (Isaac, 2019). I requested my data from Instagram and received a folder containing every post, comment, story, like, search, and most interesting a file that logs a time and location stamp with every post.

Images posted to Instagram are compressed and cropped to fit into their size restrictions that maximize at 1080 x 1080 pixels. Hito Steyerl talks about the transformation of the image in the process of uploading and downloading in her essay In Defence of the Poor Image. She describes this transformation as a way to shift the permanence of the original to something transient in the copy which is temporary. (Steyerl, 2009).

{"caption": "Sorry I haven't been Instagram-ming my Norway experience. I've been busy.", "taken_at": "2019-09-07T01:16:07+00:00", "path": "photos/201909/1cfd355ee1feb-04d3ae2a45cc58855c1.jpg"},

While looking through my downloaded data from Instagram, the last image I had uploaded was of a hotdog from Trekroneren in Bergen, Norway. It is a small unassuming stand next to the highly touristy area. The local hotdog is a reindeer sausage with lingonberry, mustard, and fried onions as toppings. Food can become a symbol of a location and culture. There is the famous Chicago-dog that comes with a pickle spear, neon green relish, celery salt, and the mysterious sports-pepper (Figure 19). It is more than just a mundane hotdog in its iconic status. It represents a culture of a city that is only imitated outside of the location. It also becomes something unique in its portrayal of that location that can only be considered an imitation outside of a specific place. (Spina, 2016)

6.3.2 Process and Design

My original idea for this iteration was to start linking my social media behavior to my purchases and see if I could notice any pattern. This didn't work out because my social media activity was low and I don't tend to shop that much. A majority of the activity were semi-frequent trips to the same grocery store. I took a step back from the concept of forcing an outcome and decided to see what already existed in my Instagram account. The last post I had made in weeks was from a late-night hotdog from Trekroneren in the Bergen Sentrum (Figure 20). The post in itself was done without much thought. It was a quick message to friends back home to say that everything is fine and I found a similar iconic hotdog to the Chicago Dog or San Francisco Mission Dog. To regain permanence the image was taken from Instagram and made into a five-color silkscreen (Figure 17).

19 / *Chistyle Hot Dog*, Jeff Zimmermann 2018 (Zimmermann, 2018)

20 / Original Instagram Post, 2019

21 / *The Hotdog*, 2019

6.3.3 Findings and Discussion

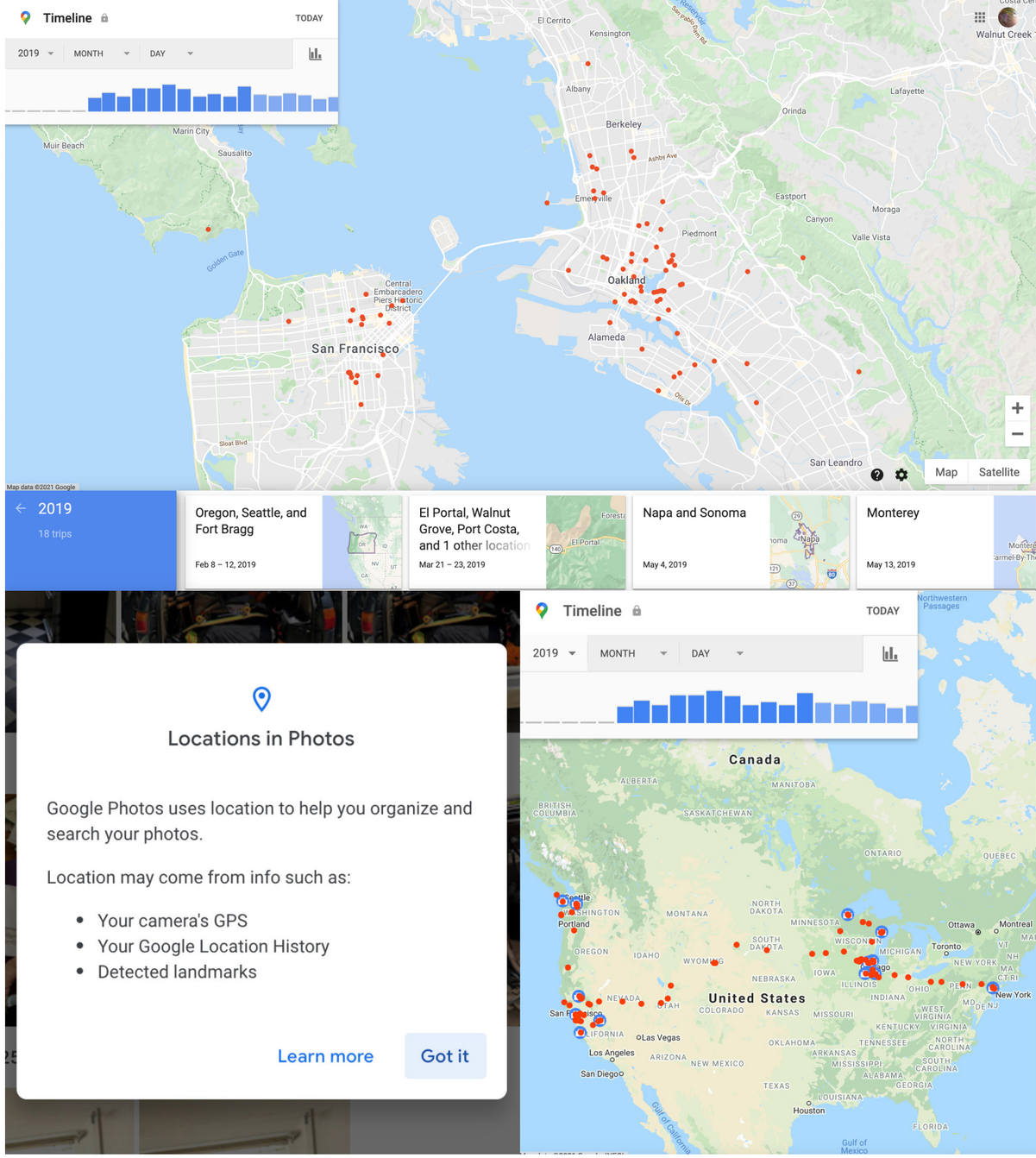
The Hotdog moved from the original experience and photograph, to a digital form as a post on Instagram, and then back to a physical form as a printed piece. In each phase, there was a transformation. The original image was a hotdog which to me has the context of a location and community affiliation. This context was the intention of creating the post on Instagram. Once the image was uploaded it became a conscious addition to my digital identity. The part of my identity I could control was the image to upload when to upload it, what to write on it, and who to share it with. This gave the raw datasets to Instagram, and inherently Facebook, to add to my profile. The image itself became something seen quickly in the Instagram feed. The feed is based on algorithms that dictate what you view with the main purpose of encouraging interaction for the app. Once the algorithm is in charge it becomes a competition for exposure that is outside of whatever original intention you had. (Constine, 2018). Taking the image from Instagram and making a screen-printed iteration brings another transformation of the image. The permanence from making a screen-printed iteration gives permanence. The image has been manipulated, distorted, and cropped from its original state. The craftsmanship of the screen-printing process also gives a sense of value to something that was previously given away. The original image was mundane and impulsive, but now after being printed it could be considered intentional and I gave it value.

6.4 Google Map Globes

6.4.1 Context

People have been mapping the world to make sense of it since the beginning of time. It offers a perspective for understanding our world from subjective experiences. Any map we create will reflect distortions that reveal our prejudices, status, and assumptions. (Hobley, Alastair, Nixon, Schellenberg, 2010). The early Romans would use the globe as a symbol of their imperialistic power. In the Renaissance period, the globe represented world dominance. This was in context to the competing conquest of European nations to colonize the planet. The globe became a status symbol that represented everything a kingdom owned or felt entitled to. The depiction on the globe could be the earth or the heavens. Both were something royalty felt like they owned and both distorted to reflect the dominance of the imposing owners (Figure 22). (Lippincott, 2002).

22 / *Armada Portrait*, 1588 (Royal Museums Greenwich n.d.)



23 / Google Map Timeline

The race to map the earth has since moved to the Tech Industry. Within the account section for Google Maps is a collection of information called My Timeline (Figure 19). The Google Timeline is a feature that allows you to see where Google has tracked you for designated periods of time. It is a result of the data exhaust Google has been collecting since their release of their mapping project which came about after they acquired Keyhole, a CIA-funded Satellite company. (Zuboff, 2019, pg. 141). You can view your movement across the world with marked locations, location details like date and time, and even photos you have taken that correspond to those locations if you have uploaded anything to the Google Photos application (Figure 23). The result is a comprehensive diary of your movement.

6.4.2 Process and Description

Google Map Globes are an experiment which is trying to represent my Google Timeline as a series of globes (Figure 24). The Timeline was broken into three pieces. Each globe is minimized to portray only the world I know. The map becomes distorted and incomplete as it winds up only showing a small piece of the planet. The first piece represents one week of location tracking taken directly from Google Timeline. The following move up in size with the middle being one month and the largest globe representing one year (Figure 24).

As most people are unaware of their location tracking the globes have been painted black. The map information lies hidden with a transparent ultraviolet reactive pigment. To reveal the map-information you need to look at them with ultraviolet light (Figure 25).

6.4.3 Findings and Discussion

When I take my data out of Google Timeline and place it onto a physical globe I am allowing the viewer to become the surveiller. There is a placement of roles that happen when this exchange is given. The viewer becomes the one in power over me as they can see my personal data. They may create assumptions about who I am by the locations available. The patterns revealed by the placement of specific locations show where I spend most of my time including vacations or where I have lived. The viewer is allowed to remove my privacy and obtain possession of the information.

Our data is available to be viewed if you know how to access it. With the right tools and knowledge, anyone can access our private information. While on the surface there may seem like there is nothing there, the reality is that there is information hiding in plain sight. By hiding the information with ultraviolet reactive pigment the representation of this aspect which is common in the digital world is brought to a physical level.

24 / *Google Map Globes,* 2020

25 / *Google Map Globes,* 2020. Activated by UV Light

26 / *L'esprit de Locarno,* Max Ernst, 1929 (Art Basel n.d.)

6.5 Reassembling Digital Reality

6.5.1 Context

In the late 2000's Google decided to start collecting advertising terms from their users based on their search terms. The idea was that this form of catering advertising would result in something more interesting for the users and prevent advertisers from manipulating their search algorithms. The search terms collected were assigned to a user and then sold to advertisers for revenue. The ads could then be "targeted" based on specific data that has been collected. (Zuboff, 2019, p. 71). If you have a Google profile you can view your assigned advertising terms through managing your Google Account and looking at your Ad Personalization (Figure 23). These advertising words are updated frequently and give a glimpse into a reflection of yourself that lives within this realm.

The words attributed to a user's Google behavior can seem unreal. In surrealism, the artist seeks the surreal by moving from the exterior and interior worlds. By blending these two worlds the work becomes almost dreamlike. (Ernst et al., 2008, p. 18). The surrealist artists worked with words and images in an attempt to reveal unexpected analogies. In its essence, it was a revolt towards the current state of art at the time. Max Ernst, who was famous for introducing the style of collage, created an exercise in *A Book of Surrealist Games* called *"Re-assembling Reality".* Within this exercise, the participant is asked to collect and rearrange various images of the same look to see if they could create something illusionistic (Figure 26). ("Brotchie, 1995 p. 10, 60).

6.5.2 Process and Description

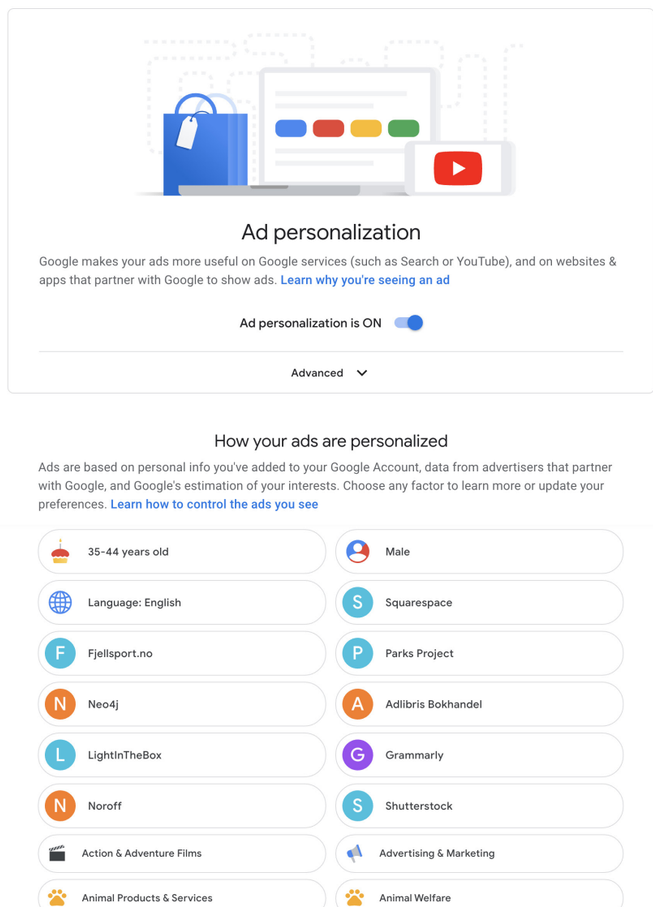
Reassembling Digital Reality (Figures 28, 29, 30, and 31) is an iterative exercise that combines my Google Ad words with an exercise from Max Ernst for collage called *Re-assembling Reality.* ("Brotchie, 1995 p. 60). The idea is to be able to make sense of the words chosen for me by Google and assemble them into visuals (Figure 27). Before starting this exploration I created a series of steps to try to minimize my influence. The steps also allow for this exercise to be shared with other people willing to see what critical reflection they can get out of it themselves. Since the Google Ad words (Figure 27) change frequently this iteration can be an ongoing exercise.

Reassembling Reality Steps

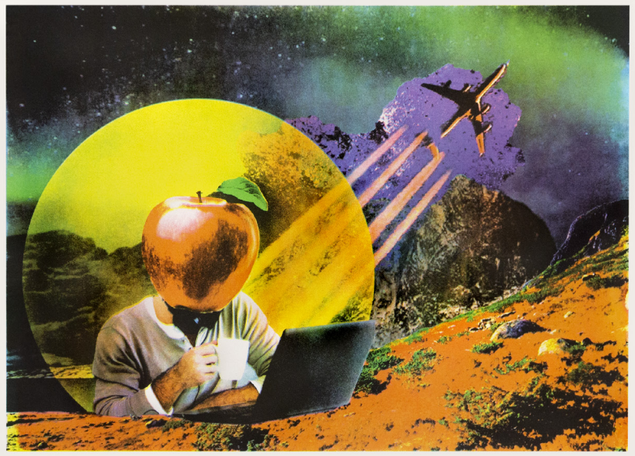
1. Go to your Google account and view your Ad Settings under Data and Personalization. From here take the first 6-8 ad words that appear under the top advertisers. The top advertisers are the larger blocks above the adwords which are smaller in the list.
2. From a web browser, preferably Google Chrome, image search or shop each term you received from your Google Ad profile. Select any image that shares a similar look and feel, especially anything from targeted advertising or recommendations.
3. Assemble the images into a landscape and scenario.
4. Remove the collage from the digital space by screen printing them. Start with a four-color process of cyan, magenta, yellow, and black. Use more color layers if necessary.

6.5.3 Findings and Discussion

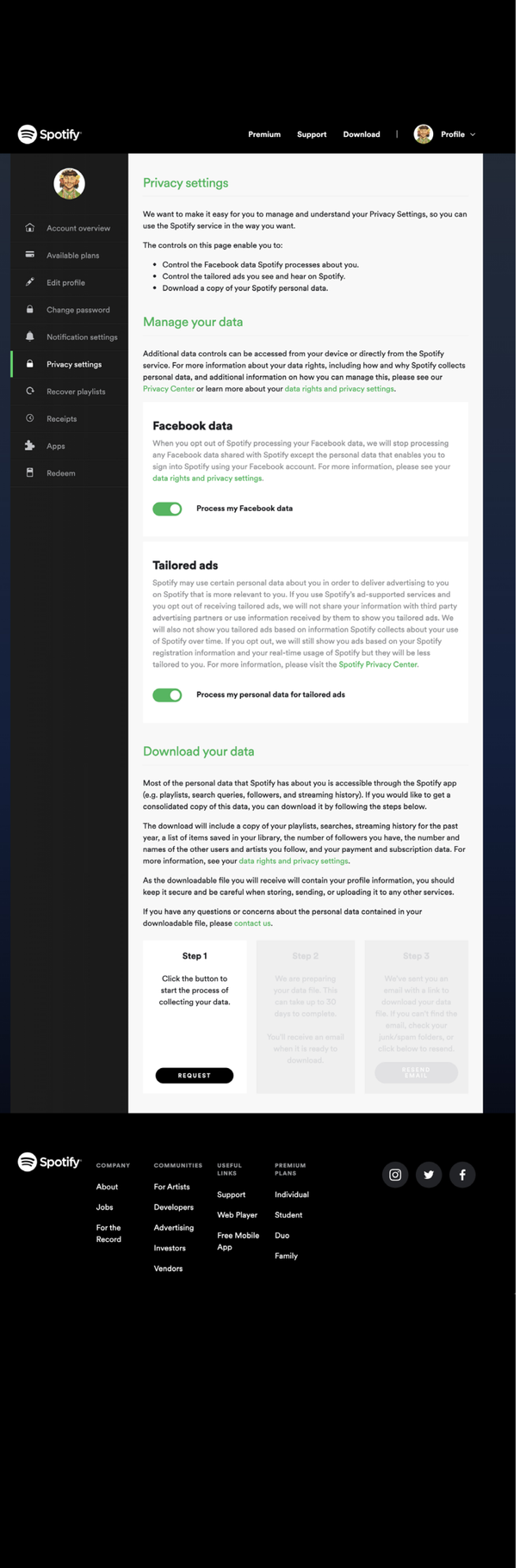
The advertising words Google chose for me at first seem like someone else. In general, they are not the words I would choose to describe who I am or what I represent as a person. They were chosen through algorithms based on my behavior by interacting with Google products. If I download my data from Google Takeout I can only see the raw data. They do not provide the behavior predictions used to create this advertisement targeting profile. The purpose of creating the specific steps when starting the collage process was to minimize my interference into the reflection process. It would be easy to only select the words that seem the least insulting or misleading to work with. Though the true purpose of this exploration is to view myself from my digital identity and not what I think my digital identity is. The result at first glance is hard to make sense of. It becomes a confusing and distorted self-portrait. The result is surreal more than real.



27 / Google Ad Personalization



28 / 29 / 30 / 31 / *Reassembling Digital Reality,* 2020



32 / Spotify Privacy Settings

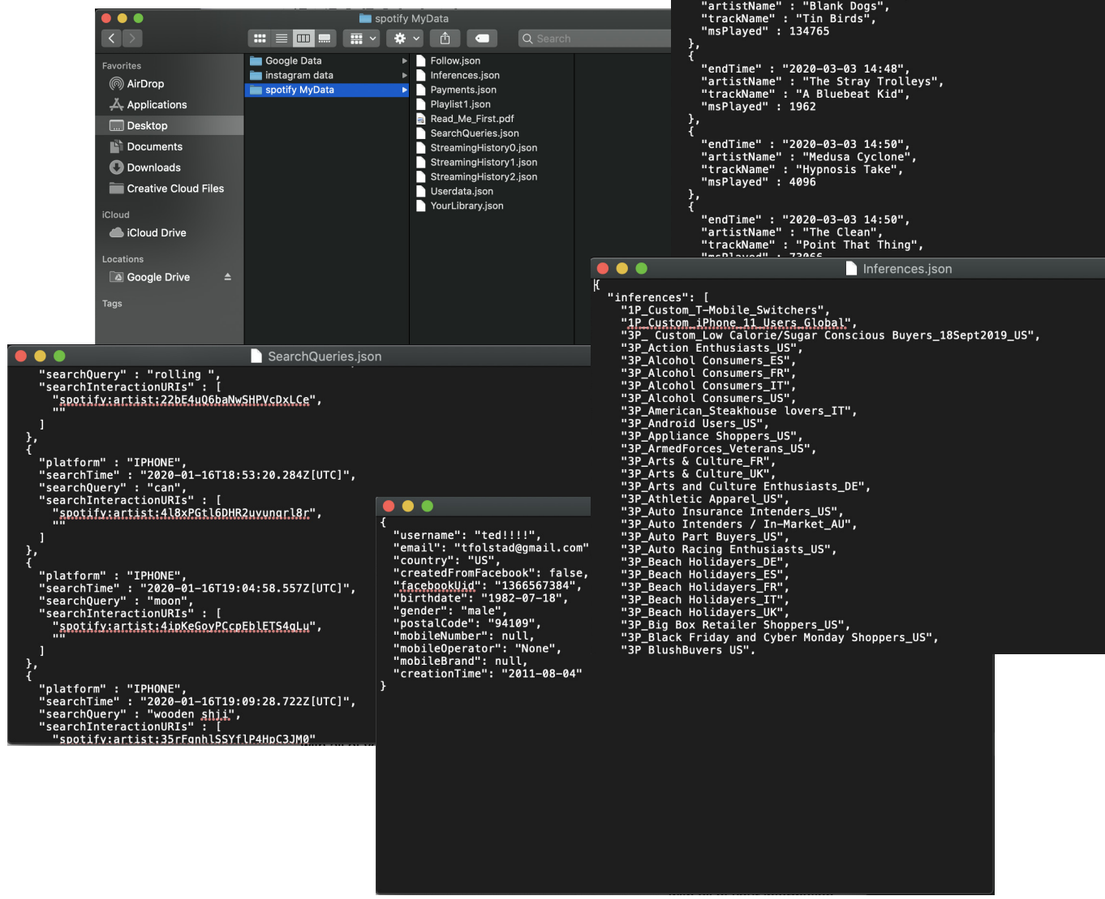
6.6 Spotify Digital Diary

6.6.1 Context

The amount of data that has been collected on ourselves over the years has been described as a digital diary. It is the result of the severity of our recorded surveillance and the permanence of our data. While a diary in its true form is a conscious tracking of our lives, our online diary exists with or without our knowledge. (Zuboff, 2019). A diary written by ourselves can contain whatever perspective we feel like documenting at the moment, but a digital diary only allows for a recording of our behavior at the moment. The assumptions created from this document are left open for interpretation. In this iteration, I sought out to explore what my digital diary would look like.

Buried within the privacy settings in my Spotify account section, I found the ability to request to download your data profile (Figure 32). The button is hidden within the website and the request can take up to thirty days to complete. When the request is complete you are emailed a download link with all of your information. My actual request only took nine days but included one year's worth of data collection from Spotify. The total of files was roughly 4MB of raw text documents. This included every song I had played with the time and duration of the play along with my adword targeting terms or inferences, search queries, and user data.

I was shocked by the size and detail of this record. I have been on Spotify premium since 2014, which means that I have seven of these volumes total. Never had a diary before, so, I thought it would be interesting to visualize my data into a digital diary to see what critical reflection could be invited.



33 / Spotify Data Download Contents

6.6.2 Design Process and Description

The dataset provided by Spotify from my request included various folders which included raw data files with various recordings of my behavior (Figure 33). Everything I had done from the previous year was laid out in organized buckets. The files were laid out into a basic formatting book formatting with InDesign. The contents reached over 2,100 pages when done. The contents needed to be divided into 5 volumes to be printed. There were no chapters and the organization of the data files was used to plug in the information. The book starts with "Dear diary," and then jumps into the raw data. Each raw data file after the other in a two-column 9pt font using Proxima Nova, the corporate Identity font for Spotify. An easy to ready and plain san serif font available for free from Google Fonts.

I wanted to keep the printing in a cheap and typically corporate fashion. At the same time, I researched the branding guidelines for Spotify. The invasiveness and thoroughness of this surveillance should be owned by the company responsible. They had just recently undergone a brand refresh where the core principles of the company were now reflected more cohesively throughout the company. The idea was to give their designers more flexibility through a rigid design system. (Spotify, 2020b). The contents of the book were displayed clearly onto the cover. To keep the content safe a lock mechanism was adjusted from a diary I found at a bookstore.

Spotify Digital Diary, 2020

6.6.3 Findings and Discussion

The first thing that can be noticed from the books is their size. In person, they weigh at least a few kilos in total. When scrolling through the pages the content is monotonous and endless. This made me wonder about the environmental impact our data collection has. Like I mentioned before in the 5.6.1 Context I have been a premium member of Spotify for seven years. That means the amount of content would roughly be 28MB for just me alone. Spotify has over 345,000,000 regular users as of 2021. (Porter, 2021). All of this data needs to be stored on servers in data centers. These centers use a considerable amount of electricity to function. As the collection of data grows from internet use, so will the massive consumption of energy and its impact on our environment. (Whitehead et al., 2014). The scale of just one year of data collection from Spotify brings up the question of if this is even necessary. Spotify does not specify what they use this data for, but the sheer size makes me question if it is worth the environmental impact.

In the data set provided by Spotify, there was a file called Inferences (Figure 34). Within this file was a list of terms that could be applied to my profile for advertising.

“We draw certain inferences about your interests and preferences based on your usage of the Spotify service and using data obtained from our advertisers and other advertising partners. This includes a list of market segments with which you are currently associated. Depending on your settings, this data may be used to serve interest-based advertising to you within the Spotify service.” (Spotify, 2021). Some of the Inferences could be me, some could be anyone, but some were just plain wrong. There are descriptions like “Cruise Vacationer”, “Eyeliner buyer”, and “Registered Republican”. If this is a reflection into who I am as a person then I am truly doomed. While I can reflect onto this digital identity to see distortions, these are very extreme examples. The questions this brings up for me are the usefulness of this surveillance system. The environmental impact of data collection, combined with the absurdity of the Inferences, makes me critical of the justification for this data collection in the first place. This view of me shows a fragmentation and distortion that couldn’t possibly be used effectively. The existence of this iteration in all of its folly could hold a mirror back up to the data itself. If this was a visualization of my identity, it also became a visualization of data collection’s identity. A corporate wrapping surrounding an oversized and questionably useful collection of information.

34 / Spotify Inferences File

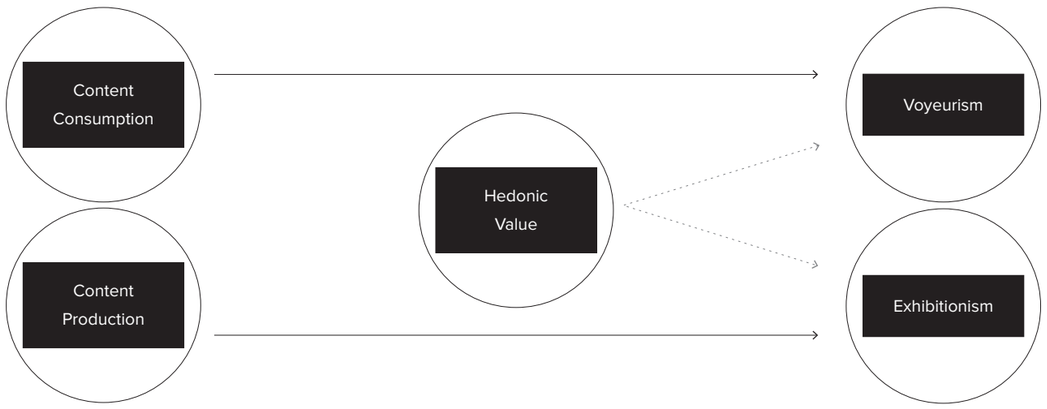
6.7 Instagram Stories

6.7.1 Context

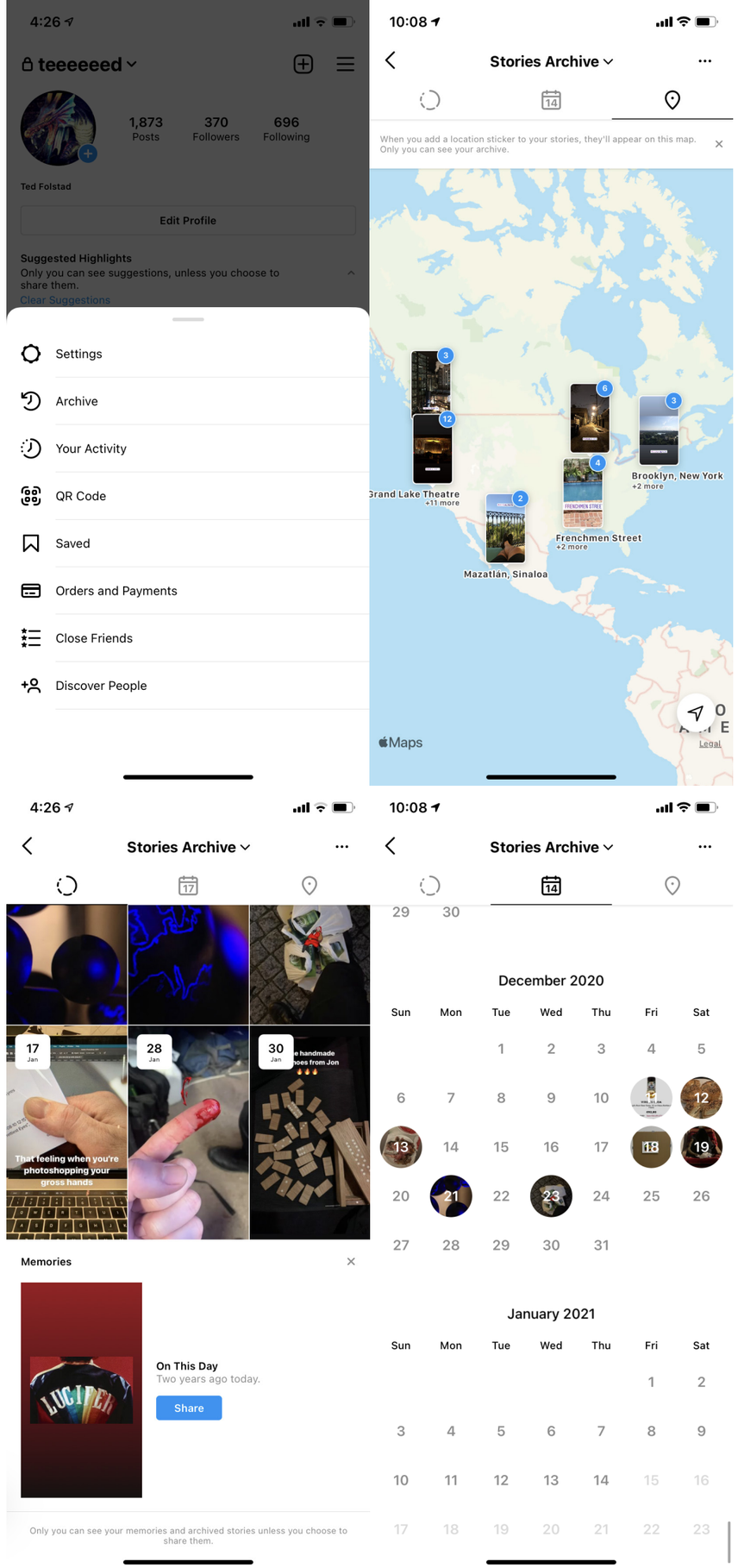
Instagram, the social photo-sharing application, released a new feature in 2016 called Instagram Stories. This was a response to the then popular application called SnapChat. The basic idea was that you could create a channel through your profile where you could share fifteen-second videos or photos, and add a variety of fun filters or text overlays. These posts could be viewed by your followers or from your profile for only twenty-four hours after posting. This new instant feature was counter to the original concept of Instagram which was more curated and intentional. It was giving a new angle to the product which was spontaneous and would be scrutinized at a lower level than the usual Instagram Posts. (Constine, 2016a).

While going through the steps to request my data from Instagram I noticed that there was a section of my profile I never explored before. By going into my account profile I was able to view an archive of my Stories going back to the very first one. (Figure 35). This was a shocking revelation. When Instagram first unveiled this feature they gave the idea that when the Stories disappeared they were gone forever. Meanwhile, without my awareness, they kept a detailed archive that was available for me to access within my account. The map feature was recently published under a celebrated birthday release which also included anti-bullying features and enhanced emojis. (Constine, 2016b). While contemplating how my trust in this application was damaged in the name of a ten-year birthday celebration, I began to wonder what had shifted in the desire to post on Instagram over time.

Newer theories surrounding why people participate in social media generally point out narcissistic tendencies, but more specifically, our voyeuristic and exhibitionistic tendencies. (Figure 36). These tendencies are adapting from their previous connotation with sexual fetishism and moving into a social platform for a more simple hedonic value. This value of posting and viewing gives the participants a perspective into their social standings. This is where they can compare themselves to others in society for validation. (Mantymaki and Islam, 2014). This social comparison adds a level to the reflection process of this project. My social insecurities, enjoyment, interests, and moodiness can be analyzed from my digital trail of archived stories. If my Instagram Stories were spontaneous then they could be a more honest reflection into the intricate workings of my private self.



36 / *User's Degree of Creating Content on a SNS has Positive Effect on Exhibitionism* (Mantymaki and Islam, 2014)



35 / Instagram Stories Archive

6.7.2 Design Process and Description

The archive from my Instagram account gave me all the stories I had posted going back to 2017. I decided to use the previous year of 2020 as a dataset to work from. What I found alluring about this time period was the shift in content from what seemed to be my usual theme of nonsense and silliness. In March of 2020, Norway went into a lockdown to prevent the spread of the Coronavirus. The amount of posts I made slowed down at first. Then in May massive demonstrations spread across the United States. As I sat on my sofa isolated from the outside world I watched neighborhoods I used to live in burn over social media. Somehow in this unusual circumstance, I still found content worthy of using in my Stories. In short, it was a very news-heavy year, but with very limited human interaction. I thought it might be interesting to see if I could analyze the Stories from this time period because they have so much emotional impact on a personal level.

36 / Booster Bag (Security Tag Removers, 2012)

Each Story from my Instagram from the year 2020 was laid out into a series of cards printed using Risograph with a classic cyan, magenta, yellow, and black process. I wanted to explore what it would be like to mass produce the Stories. There felt like the cycle of physical, to digital, and back to physical could also include scale. *(See 3.2.4 Developing Distorted and Fragmented Reflections).* The original Stories felt private before knowing they were archived. Now that I knew they were living digitally in storage somewhere in the world, they no longer felt instant or spontaneous. They became a product of me that almost felt like it was for sale and no longer my property.

While printing the cards I was struggling with what the next step was going to be. With working through the process of reassessment I came across the concept of Faraday Cages. In general, a Faraday Cage is a structure that blocks electromagnetic fields. (Chandler, 2011). They can be used as a form of protection to prevent items from detection by electronic devices, but also a sophisticated device for shoplifting. Thieves in the United States carry a “Booster Bag”. These bags, which are usually lined with tin foil, can block the alarm tags from being detected by security systems (Figure 36). (Security Tag Removers, 2012). It may have been the rampant looting footage I was watching at the time that inspired the idea. The thought of wrapping the cards in tin foil could be used as a method to regain privacy of the content. It would remove the Stories from Instagram and conceal the contents until the viewer was allowed access. These wrapped cards were then placed into a discreet black box which also gives no clue to the actual contents.

Instagram Stories

6.7.3 Findings and Discussion

2020 was a tumultuous year. Especially for Americans like me who have lived most of my life in Milwaukee, Minneapolis, Madison, Denver, San Francisco, and Oakland. These cities became epicenters for riots throughout the summer. *("'Absolute Chaos' in Minneapolis as Protests Grow Across U.S.,"* 2020). Looking back on the emotions that were running high I could tell by the Stories I was holding back. The perspectives of being a voyeur or exhibitionist give insight into my intentions towards posting. They give an impression of my personality that is usually left out of raw data. (Mantymaki and Islam, 2014). Out of all the Stories I posted that year I only made two political posts. At the time I didn't feel comfortable using Instagram to voice opinions because I wasn't there in person. I didn't want to make the event about myself and I didn't feel comfortable acting as an ambassador to the issues for Norwegians. In this sense, I was acting as a voyeur trying to understand the severity and stay updated as the events unfolded.

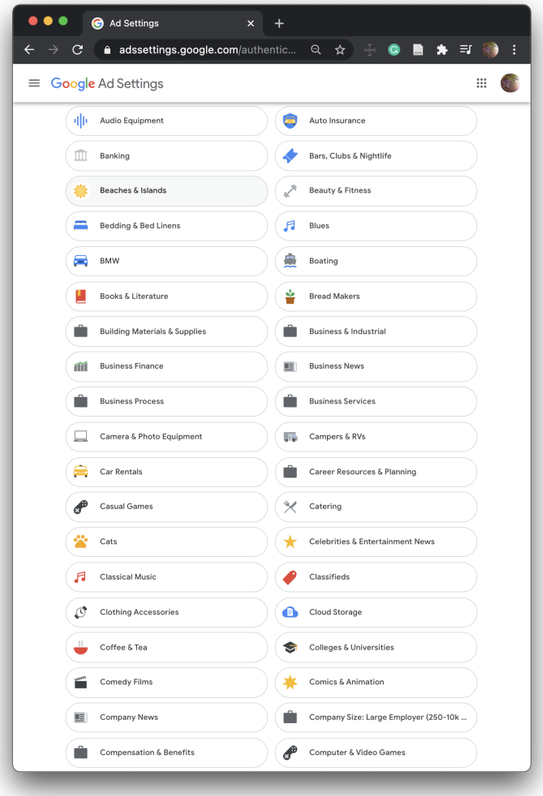
On the other hand, I made six posts that reflected the uncomfortableness I felt venturing back out into the world after lockdown. This felt like an act of exhibitionism that was searching for validation that everything was going to be okay. It could also be a way of processing the strangeness of our new normalities at the time. Discarded face masks, endless walks, and protective barriers will forever remind me of the Global Pandemic of 2020. The rest of my Stories feel like my usual theme of things I find interesting enough to post online. In an exhibitionistic way, they could be a way of saying everything is fine without having to tell people directly. Social Media allows for a connectedness that can span continents. If I stopped posting I would get an occasional message asking if everything is alright. In this reflection, I started to realize that I am using Instagram to maintain my social life while in isolation from the Coronavirus lockdown. *"Social cooperation is our key for survival and reproduction. It is not enough for individual men and women to know the whereabouts of lions and bison. It's much more important for them to know who in their band hates whom, who is sleeping with whom, who is honest, and who is a cheat."* (Harari, 2014, p. 19). This social cooperation could be translated into our social media behavior. While living in 2020 with minimal physical interaction my social behavior became mostly digital. While the amount of Stories I created were lower in numbers than in previous years, I think the reflection it gives into the time period was much larger.

The reflection from my personal standpoint into this iteration still feels fragmented. When I look back to where my mental state was at the time I can sense how guarded they were. They don't reflect an accurate portrayal of the moment, but more like a portrayal I am okay with the public seeing. This was made more clear through producing over six hundred copies with a Risograph. In previous iterations when the information was taken from being physical to digital and back again there was a feeling of ownership that was gained from the final step. *(See 3.2.4 Developing Distorted and Fragmented Reflections).* The mass production aspect changed that. Instead of a feeling of ownership I began to question their uniqueness. They became less precious and more like clutter. By packaging them into faraday safe wrappers and unmarked black boxes the iteration became a joke on itself. The hint that there was something valuable inside would only lead to disappointment when the viewer realizes there are a series of low-budget cards displaying an impulsive exhibitionistic moment from my past. I think this reflection leads to a question of the value of these Stories which will be addressed in *(see 7.3 Critical Reflection of the Purpose of Data Collection).*

7. Findings and Discussion

7.1 Findings and Discussion from the Iterative Exploration

"The images detached from every aspect of life merge into a common stream in which the unity of that life can no longer be recovered. Fragmented views of reality regroup themselves into a new unity as a separate pseudo-world that can only be looked at. The specialization of images of the world has culminated in a world of autonomized images where even the deceivers are deceived. The spectacle is a concrete inversion of life, an autonomous movement of the nonliving." (Debord, 1970, p. 12, #2). We could look at this idea of a common stream as our collective accumulation of acquired data through the Surveillance Economy. What is collected from us creates this fragmented and distorted mirror to look at our world. The iterative exploration process has allowed this world to be viewed in various physical manifestations. The resulting iterations are unique in their visualization, but also share similarities in their reflections. Each one adds towards building upon the last towards uncovering the mysterious entity that is our visual identity. (See *6 Iterative Exploration).* These similarities that are shared generally reveal the incomplete insight into our reflection. As we can see, for example, in the Inferences from Spotify or the Google Adwords (Figure 34 and 37) the resulting assumption of ourselves is so distorted it is almost offensive. Visualizing these assumptions lead to the thought that the organizations involved in our collection are trying to understand us, but it is not an accurate representation. The datasets used were digitized from my physical behavior. When taking this data from the digital form into a physical form the absurdity of the actual data collection and its applications became apparent. This realization through this project is a finding worth expressing to the public. If we are going to question the invasiveness of Surveillance Capitalism we should also question the purpose of its uses by these organizations doing the collection.



37 / Google Ad Settings

7.2 The Incomplete Reflection

During the design process the iterative explorations move through a reflection on what happens when the information is taken from the physical, to digital, and back to physical. (See *4.2.4 Developing Distorted and Fragmented Reflections).* Within this process there is a shift in the meaning. Through each phase of transition details are lost as information is simplified in its recording. The distortion is carried out in the application while the fragmentation becomes apparent in the reflection. The resulting visualizations from this process seem bizarre at first. It was challenging at first to recognize how I could start with something as simple as using an application on my phone and wind up with any of the resulting iterative explorations. I was looking for what I perceived in myself in these explorations and was not seeing it. It was in analyzing this process where I could see what was happening to my reflection and could start to see where my digital identity was. While no single conclusion was found to visualizing my digital identity, I was able to understand why it felt so alien at first and why the iterations are reflections.

7.3 Critical Reflection of the Purpose of Data Collection

People seemed the most curious about how I acquired the data to work with. While this project was generally focused around my data and critical reflections, people have responded very strongly to the realization they have their own digital identity and can also access their data in the same way. In that awareness the iterative explorations bring about questions surrounding the purpose of the context. *(See 3. Context).* When Shoshana Zuboff discusses Data Exhaust she is referring to the economy based off of the questionably useful mining of Big Data. There is an entire industry dedicated to turning this waste product of the massive collection created by our online behavior into something useful. Usually, the resulting product is behavior predictions. (Zuboff, 2019, p. 69). The issue is when these predictions are viewed as a representation of our digital identity it becomes apparent how distorted they are. In the critical reflection of this the issue of whether or not this data and if the exhaust is truly worth anything. If this Data Exhaust is garbage, then should we consider this worth pursuing to recycle using data mining. We could also view this from an archaeological perspective where maybe our exhaust is viewed as a reflection of ourselves in modern times.

8. Conclusion

In this master's project, the research looked into applying design methodology to create representations of my digital identity. These representations were analyzed to see what they reveal about my digital identity.

In *3. Context* the idea that the surveillance economy has turned us into the product on the internet. Our personal information is collected by various forms, but in this project I focus on the smartphone. The invasiveness of data collection becomes apparent when the data sets are acquired by the various organizations that collected my data from my smartphone. The specifics of what data was used and how it was acquired is explained in the context sections for each iterative exploration. The visualizations created from this data shows how we create our digital identity. They also lead to discussion about the surveillance economy and its growing scale. While we may be aware that our data is collected, the specifics of what exactly is recorded and how it is used are not as obvious. An awareness of the scale and vulnerability we face as the lines of where are privacy start and end become apparent.

The topic of digital surveillance and the surveillance economy creates a large map. In the *4. Research through Design* chapter the process for artistic research is explained. Various processes were developed to simplify the research and the visualizations. This simplification became an ongoing process that developed into a cycle or reassessment *(4.2.1 Cycles of Simplification).* With such a large map of possibilities within this topic the amount of connections became overwhelming in the early stages. By analyzing what was happening in the disconnections the design process was able to view the visualizations from more angles. The research moved together with the developing Method and Methodology in the exploration. This process in the research is explained in more depth in the following chapter *8.1 The Distorted and Fragmented Reflection* and *8.2 An Ongoing Process of Reflection*.

A mixture of Surrealism and Discursive Design was used along with a newly created methodology for reflection to use design as a tool for understanding. The resulting mixture led to a process of Iterative Exploration towards visualization. Each iteration was given its own explanation of context, process, and discussion (See *6.1 Iterative Exploration).* This iterative process allowed each exploration to build off of the previous in gained process, methodology, and context. It is difficult to say if the iterations could ever reach the point of conclusion, but the attempts in themselves lead to a better understanding from my perspective. The visualizations became fragmented and distorted reflections. When looking at the overall reflection in *7. Findings and Discussion,* this distortion and fragmentation is something that should be embraced in the design process. This is discussed in more depth in the following chapter.

8.1 The Distorted and Fragmented Reflection

In this project, design methodology was used to create a series of iterative explorations that attempted to visualize my digital identity. Each of these iterations built upon the previous towards understanding this unknown entity. In the beginning, I struggled to narrow down the scope of possibilities. With so many connections made to the core of the topic, I began to analyze the disconnections instead. Later on, I noticed that this was a theme that was going to carry through the master's project. It was these disconnections that allowed for my input as a critical reflection. This unknown area that was being examined was also inherent in the fragmentation of my digital identity. It was analyzing these disconnections along with the process of simplification and reassessment that gave the most insight.

Although the iterations are interesting on their own, this depth added by the process is what I think makes them more interesting. Each iteration shows an aspect of the absurdity that exists in how we

relate to technology. Without the process and the theory behind the methodology, the absurdity could be taken as a shallow representation. Surrealism allows for the imagination to shape the outcome, while Discursive Design adds to the reflective qualities by focusing on the discussion surrounding it. There needed to be a balance between absurd and topical for the reflection to gain depth. It is that middle area where things might be unknown that should be explored.

8.2 An Ongoing Process of Reflection

There is no right or wrong answer when attempting to visualize the unknown. Each exploratory iteration was set through a process of reassessment until a reflection was achieved. Some iterations were more arduous in this process than others. In the end, each visualization reached this point of giving a critical reflection. The process became an integral part of the iterations' reflection, therefore any attempt, whether quickly successful or not, provides insight. While these processes developed helped me get to this point, there is still more to understand when it comes to where my interest in the topic lies and when an exploration feels complete. In the act of creation, I was not always aware of what was happening. I relied on my instincts to dictate when an exploration was complete or needed to go through a process or reassessment. These instincts will undoubtedly develop into more processes as this continues.

The iterations so far lean towards understanding the difference between the perception of what my digital identity is and what it could be. There is a border between our physical identity and the digital identity. I could sense in the reflections that something was happening when the data was moving between physical to digital and back to physical. It would be worthwhile to spend more time exploring what specifically is happening in this transition and where this border lies. If we want a better understanding of our digital identity we should know where our physical identity ends and the digital identity begins.

8.3 Expansion of Data Sources for Future Exploration

To build the data to explore my digital Identity I focused on the smartphone. It has earned the nickname of Little Brother by being the unassuming spy we carry with us almost everywhere and interact with throughout our day. Though, it is not the only form of Little Brother surveillance available. ATM Machines, facial scanning, bank cards, key fobs, BlueTooth readers, and so on are examples of digital surveillance that capture our data and build into our digital identity. The technology is so invasive and intertwined with our daily lives the list goes on and on. I think one of the values of this project is the awareness of the level of surveillance we are exposed to. Especially when the surveillance is in a discreet way. The visualization of digital identity might never be complete, but it can create awareness around the topic of digital surveillance. Whether or not this awareness can influence change might be grandiose, but the discussion it can inspire is the most important part.

"The images detached from every aspect of life merge into a common stream in which the unity of that life can no longer be recovered. Fragmented views of reality regroup themselves into a new unity as a separate pseudo-world that can only be looked at. The specialization of images of the world has culminated in a world of autonomized images where even the deceivers are deceived. The spectacle is a concrete inversion of life, an autonomous movement of the nonliving."

(Debord, 1970, p. 12)

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