

# SHIFT.

An alternate future for  
experiencing reality in digital imagery

## Abstract.

A picture is worth 1000 words. Great visuals can enhance, dramatize and even bend the narrative. From historical photos to modern-day digital images made of millions of pixels, images have always been instrumental in shaping our visual understanding of the world around us. As much as they have been instrumental in shaping reality, easy access to image manipulation has also resulted in widespread misinformation. When anything can be faked, honest representation of reality in images has become a hard problem to crack.

After multiple design explorations, I realized a need for a fundamental change in our interaction with images. The thesis resulted in building an alternate landscape for digital imagery called SHIFT, where images are connected entities that become an access point to multiple perspectives and alternate realities. It is not an attempt to challenge image manipulation technology but to use images as a means to develop a more informed understanding of the reality they represent.

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# Prologue.

'Photos never lie' - when I look back, that was my childhood, much before the digital society and app culture where everyone around walks with a smartphone camera. It was a time when photos were honest in representing reality. They used to be my trustable source to know about the people I never met, places I have never been to, and events I never could experience. As I grew up, I encountered multiple instances where the same images I used to trust once started to challenge me. Never before has it been easier to create imagery, and never before has it been more accessible to fake anything. Growing up with technology has made life easier for me, as I learned how not to trust what I see completely. But for people who grew up trusting their visual senses, it has become a hard thing to comprehend. If my grandma were alive today, she would have told me to make photos believable again.

# 1. Introduction.

Visual imagery forms an integral part of our everyday record keeping. We use them to capture our memories, share our emotions, and have a visual understanding of people, events, and moments. In many instances, these snapshots are also our sole reference towards a reality we couldn't experience in person. The sheer number of photos we take every day shows how much our understanding of everyday life is shaped by still imagery. According to Keypoint Intelligence analysts, In 2021, humanity will take 1.4 trillion photos. That is an average of 183 photos per person (including kids) (Mylio, 2021). The vast amount of content generated has opened up new frontiers and opportunities. Never has it been easier to be creative with images.

Yet, they are also one of the easily accessible sources of misinformation and misinterpretation. Photo manipulation might be as old as photography itself, but modern technology has made it common and easy to do. "The ubiquitous availability of easy-to-use software for editing digital images brought about by rapid technological advances of the 21st century has dramatically decreased the time, cost, effort, and skill required to fabricate convincing visual forgeries." (Shen. C et al., 2019). If you use social media, the chances are that you see or forward some of the more than billions of images, and it becomes an arduous task to decide which among them can be trusted and which cannot be.

While one part of the solution focuses on content verification tools, it has become equally important to build a media literate generation. "Ultimately, one of the best lines of defense and someone who needs to be

empowered is the viewer." (Thomson. T.J. et al., 2020). Instead, Industry has majorly been focusing on technological interventions like blockchain, neural filters, A.I., etc. But they rarely touch upon the factors like context the image represents, the narrative it shapes, and the reality it thus defines. As a design intervention towards a media literate future, we need tools that empower the viewers to develop an informed understanding of the images they come across. For now, the best approach might be to learn by designing an image experience first hand. Hence, this project will describe the process and learning of one such attempt to rethink a very specific type of image: *images that are representations of reality*.

## Defining vocabulary

Through out the project, I felt the need to define new meanings and labels to draw the line between overlapping terms, and represent a deeper and specific meaning to broader terms.

**Images** - I use the term 'images' as an umbrella term synonymously with pictures, photos, visual imagery, digital imagery, still imagery, etc. While recognizing that there is a wider meaning to it, in the context of the exploration, all these stand for 'digital images as a representation of a reality'.

**People** - General public, and used when I make an informed observation about the general public.

**Participant(s)** - People who were involved in different phases of the project and used when I point to insights I learned from them.

## 2. Background.

This section talks about the initial struggles I had while navigating the complex and philosophical problem space of designing for reality. It gives a brief overview of why I shifted my focus early on in the project towards digital imagery and its effect on our understanding of reality. It also gives an overview of relevant commercial projects that emphasize the challenges we face with digital imagery.

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### 2.1 Understanding reality.

As a first step, I tried to understand what it means to design for reality and find what could be an aspect of reality that interests me. The word "reality" itself creates confusion as it often has a broader interpretation and is very subjective in how people perceive it. What motivated me was how our closeness to technology could alter these perceptions and our understanding of reality. My father used to jokingly say to his internet engrossed son that he might have to be inside my screen to have a conversation in my childhood. His observation feels like a Deja Vu at a time when technology has become a mediator in our understanding of the world.

In simple terms, and my understanding, reality is how we describe the world: how the world seems to us. Reading through what philosophers explain about reality, Borgmann (1995) suggests the idea of commanding or genuine presences as characterizing the real - when you perceive that something is rooted in a larger context of which it is revelatory. According to Prof. Craig Holdridge (2015) of Nature institute, "A leaf in the fall, loosed from its tree and floating through the air, is revelatory of the whole context of wind and the temperature at that moment." (Holdridge, C, 2015) This raises the question of how will technology be revelatory of the whole context when they mediate our engagement with the world- or should they be? According to Ihde (1979), this technological mediation always strengthens specific aspects of the reality perceived and weakens others (Verbeek, P.P, 2005). This makes me wonder what actions of technology weaken our perception of reality. The breadth of the word technology also started to confuse me and raised many

questions in my mind - Am I talking about a physical or digital form of technology here? Is it a platform or a device? This made me realize that I had to focus early on in the project and define the boundaries of technology and explore what aspects of reality is this challenging.

### 2.2 Representing Reality.

It was difficult to strike a conversation by just talking about 'reality' and how 'technology' affects it. During the initial discussions with my classmates and tutors, I felt like the conversations were going philosophical without having a shared narrative to focus on. But one thing I noticed that most of them communicated about reality through a representation of it - like how graphics, photography, written records, news, etc., shape reality. This pushed me to see what are the representations of reality in our everyday life. This also posed some questions on whether my focus should be on accurate and inaccurate representations of reality. "No representation of the world is either complete or permanent. Rather, any description is a snapshot of historical processes in which differing viewpoints, local contingencies, and multiple interests have been temporarily reconciled" (Gerson & Star 1986).

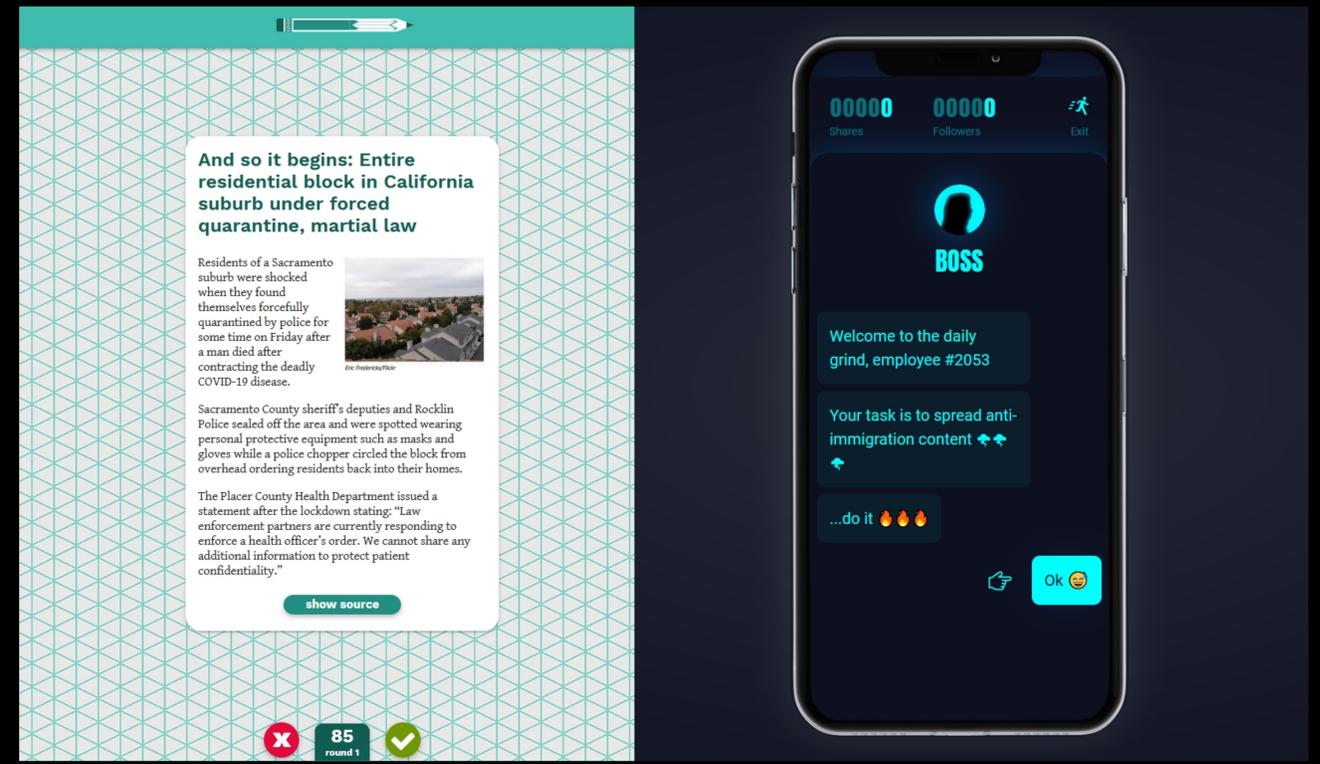
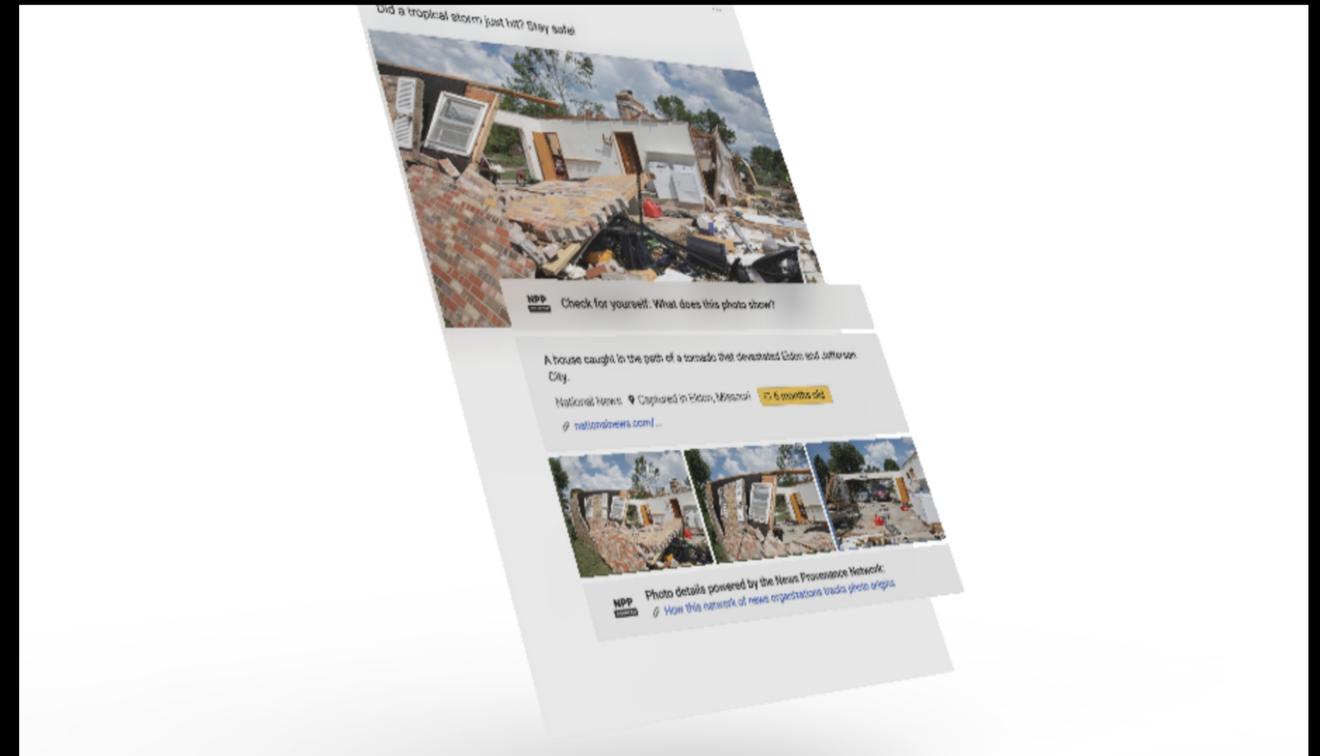
During my conversation with Heather Wiltse, she pointed that, "All representations are just that - representations - which means that some aspects are included and some not (eg: a map is not the territory). Now, of course, representations can be better and worse, and some can be intentionally designed to be deceptive." This forced me to think about this inherent gap between reality and its representations. Alternately, this threw some light into defining the boundaries of technology in my exploration - 'it is an entity that represents the reality.' As anticipated, earlier conversations gave me a philosophical perspective of the topic. Still, as a designer, I wanted an approach that lets me think and

talk in terms of the tangibles. As a first step towards this, I tried to define the representation of reality that I want to work with.

### 2.3 Images representing reality.

Of all the representations around us, digital imagery posed an exciting space to explore. It is widespread and has a deeper impact on our mental construct of the world around us. We see, think, and communicate through images, and research shows that we have a strong bias toward believing what we see in pictures (Newman, E. 2019) . As Eryn Newman (2018) puts it, "It doesn't matter what the claim is about, as long as there is a related photograph with it, it will nudge people toward believing it". Images or image manipulation could also be seen as a significant contributor to misinformation campaigns and propaganda machinery. The use of the doctored images is a deceptively simple technique often used to spread misinformation campaigns during elections ("The Big Loophole That Helped Russia Exploit Facebook: Doctored Photos", 2018).

Another interesting aspect is how our understanding of the past is also challenged by image manipulation. In the documentary LAST DANCE, producers used a deep fake of Kenny Mané by superimposing his mouth onto footage of his 38-year-old face and making it appear like a prophecy of the documentary to come ("An ESPN Commercial Hints at Advertising's Deepfake Future", 2020). Even though made for entertainment purposes, this showed flashes of a future we might have to encounter and even live with. As Dr. Kim Wade (2019) puts it, "The act of routinely enhancing images could change our perspective of the past and ultimately, our relationship with reality" ("A.I. Is Changing How You See the World", 2019). It will be worthwhile to look at a future where every image we see will have to be critically looked at. "Asking our loved ones on phone to provide authentication might be at odds with our



(TOP) Young Kenny Mane (L) merged with old Kenny Mane (R) used in ESPN documentary The Last Dance. © ESPN

(TOP) Prototype of News Provenance Project by The New York Times that provide provenance information of visual imagery. © The New York Times

(BOTTOM) Screenshot from Channel 4 broadcast of Deepfake Queen. © Channel 4

(BOTTOM) Gamifying misinformation. (L) Factitious (R) Troll factory © Factitious © Troll Factory

sense of trust, but it may be the price we have to pay once the manipulated media gets democratized" (Kambhampati, S., 2019). All these observations pointed to the current relevance of the design space and an urgent design intervention needed to empower people to critically see through the images they come across.

#### 2.4 Why digital imagery?

The ubiquity of smartphones and the built-in cameras have helped us capture more photos than ever before. Internet culture has given people a mechanism to record and share their lives instantly: "The obsessive recording of our lives even seems to affect how we experience and remember the world. We see more moments through the camera, and we spend even more time looking at our phones, watching the lives of others" (Stephane Lavoie, 2018). Images thus form an essential element that shapes our understanding of the real world. Unlike video, photos doesn't need the hassle of rewinding and pausing. As one of the participants mentioned during the later research, "Photos doesn't need an extra capture." This widespread presence coupled with easy access to the tools to manipulate images has started to challenge our perception. Reports point to majority of visual misinformation that people are exposed to involves simple forms of deception like out-of-context photos (Liza Fazio, 2020). The act of seeing an image is slowly becoming a confusing experience. A study by Adobe says that the public's trust in the photos they see online has been significantly harmed (Adobe, 2020). For these reasons, I felt that focusing on digital imagery could help me reach a broader audience with a troubling understanding of the images they see.

#### 2.5 From dysmorphia to deep fakes.

I started my desk research trying to understand how our relationship with visual imagery has changed over time and what challenges that has brought to our

understanding of the world around. I was specifically interested in seeing how image manipulation culture has evolved and its societal implication. To my surprise, its impact on our behavior and social habits was even more deeper than its impacts on the larger society.

Before digital age, photography was a curated affair and photos were taken sparingly during special events and celebrations. Digital photography and advent of social media has resulted in a culture that is immersed in constantly viewing images of ourselves and others. The more people see their image, the more they scrutinize the details and obsess over them, an excessive preoccupation which can lead to "Body Dysmorphic Disorder" ("Social media filters mess with our perceptions so much, there's now a name for it", 2018). It was no wonder, when one of the participants I interviewed pointed to the 'boring reality' as the reason for Instagram craze. Researches in media psychology also point to a standardization of aesthetics and behavior and its direct effect on body image in adolescent girls (Kleemans, M., Daalmans, S., Carbaat, I. and Anschuts, D. 2016). Even though this was not the focus in my further exploration, it gave an alternate lens to look at my problem space. This also reinforced my belief that the solution should advocate a behavioral change towards our image viewing habits.

"This person does not exist" - For me it was difficult to comprehend what that even meant till I had a course in machine learning and Generative Adversarial Networks. I was totally in awe when I first learned that AI can generate faces of people that never existed. I even used a few of them during the research interviews to find how much it challenges our visual cortex (4.2.1 Developing critical eye). Even when perplexed by the possibility of AI, I was also troubled by the realization that one day I will have to be skeptical about my visual senses.

But it didn't take much time. On the Christmas eve of 2020, Channel 4 broadcasted a warning

about misinformation through a deep fake of Queen Elizabeth ("Deepfake Queen to deliver Channel 4's Alternative Christmas Message", 2020). According to Katy Cook (2019), CEO of Centre for Technology awareness, "To tell us that we can't believe what we see before our eyes is at odds with our evolution, where we rely on sight as primary means of gathering information." Even though the project is not explicitly focusing on solving for deepfake, it made me realize how profound is the fact that our perceptions are challenged. Yet, we predominantly rely on our senses to understand the images. Just like we have technology that helps us see elements that are invisible to our naked eye, we need new tools that help us see through the images we come across.

#### 2.6 Tackling visual misinformation.

Even though manipulated images have become a regular sight in our social feeds, the history of image manipulation dates back to the days we invented cameras. Hany Farid (2009) recounts, "Photography lost its innocence many years ago. In as early as the 1860s, photographs were already being manipulated, only a few decades after Niepce created the first photograph in 1814." From the iconic portrait of historical figures to magazine covers and scientific publications, manipulated photos have been able to make their presence felt in our history ("Photo tampering throughout history, n.d"). A study by Dr. M Sacchi, Franca Agnoli, and Elizabeth Loftus (2007) shows that doctored photographs of past public events can alter people's memory of the event. If "viewing modified images affected not only the way people remember past public events but also their attitudes and behavioral intentions" (Agnoli., F., 2007), then what actions are needed to encourage people to look at the images critically?

#### Photo Journalism

Previous work in the field of photojournalism offers some fresh approaches towards visual

misinformation. The New York Times created News Provenance Project to explore solutions to issues of misinformation around visual journalism. Even when news organizations provide background information learned and verified during reporting, it is often stripped of that context as the news travels across the web (News Provenance Project, 2019). With IBM, they explored blockchain to store contextual information with a photo that would provide additional information when a person views it. In their work, designers at the NYT focused on providing contextual information of photos captured by a news photographer. When anyone with a smartphone can be the newsmaker, it would be interesting to see how the photo provenance is applied to content generated by everyday social media users.

#### Media Literacy

When we are exposed to misinformed content more often, educating the viewers to fact-check and spot misinformation has become pivotal. Gamifying education is a fun approach towards promoting media-aware behavior. Most of these seem to be aimed at students and range from putting users in the shoes of fake news generators to simulating what it's like to be a broadcast reporter deciding which sources to trust ("Factually: Games to teach media literacy," 2019). Bad news is a game developed by researchers at the University of Cambridge and the Dutch media group Drog. It tasks players to understand this propaganda and fake news while creating and sharing it. Factitious is a tinder-like game that asks users to swipe left or right based on if the article is real or fake. Even when the gamified approach confers a psychological resistance against misinformation (Roozenbeek, J. et al., 2019), the path seemed to have limited application towards visuals.

Center for Advanced Virtuality at MIT devised an alternate approach by illustrating the possibility of deep fake technology by

reimagining a historical event. In the event of moon disaster is an immersive art project that invites people into alternative history, showing how new technologies can bend, redirect and obfuscate the truth around us (In the event of moon disaster, 2019).

### Media labelling

The broader spread of misinformed content through social media has prompted the industry houses to invest in policies, resources, and products that could regularly remove content that violates this (Reuters, 2019). Misinformation labels are a straightforward solution, like, user applied labels in Reddit, fact-checker overlay labels in Instagram, manipulated media labels in Twitter, etc. Even though this approach seems effective to an extent, analysis reveals a deep division in user attitudes about platform labeling interventions for visual information, which are perceived by many as overly paternalistic, biased, and punitive (Saltz, E. et al., 2020). There have also been reports of fake news screener algorithms targeting genuine creative content ("Instagram Launched an Algorithm to Fight Fake News. But Is It Censoring Digital Artists?", 2020).

All these serve as reminders that there is still work needed to bring back the honesty into digital imagery. There is a bigger question of what intervention is ideal. *Is it at the point of creation or the moment when you see it? What if we have to fundamentally change the way we 'see' images?*

### 2.7 Design goals.

The goal of my thesis is to develop tools that could help the next generation build an informed understanding of images they come across. In a world of technology mediated realities, I believe it is our responsibility as designers to create objects that empower people to be more responsible for their own realities. This will propose an alternative, where ethics could be seen as a human

prerogative and an object property. Some design challenges I have identified are:

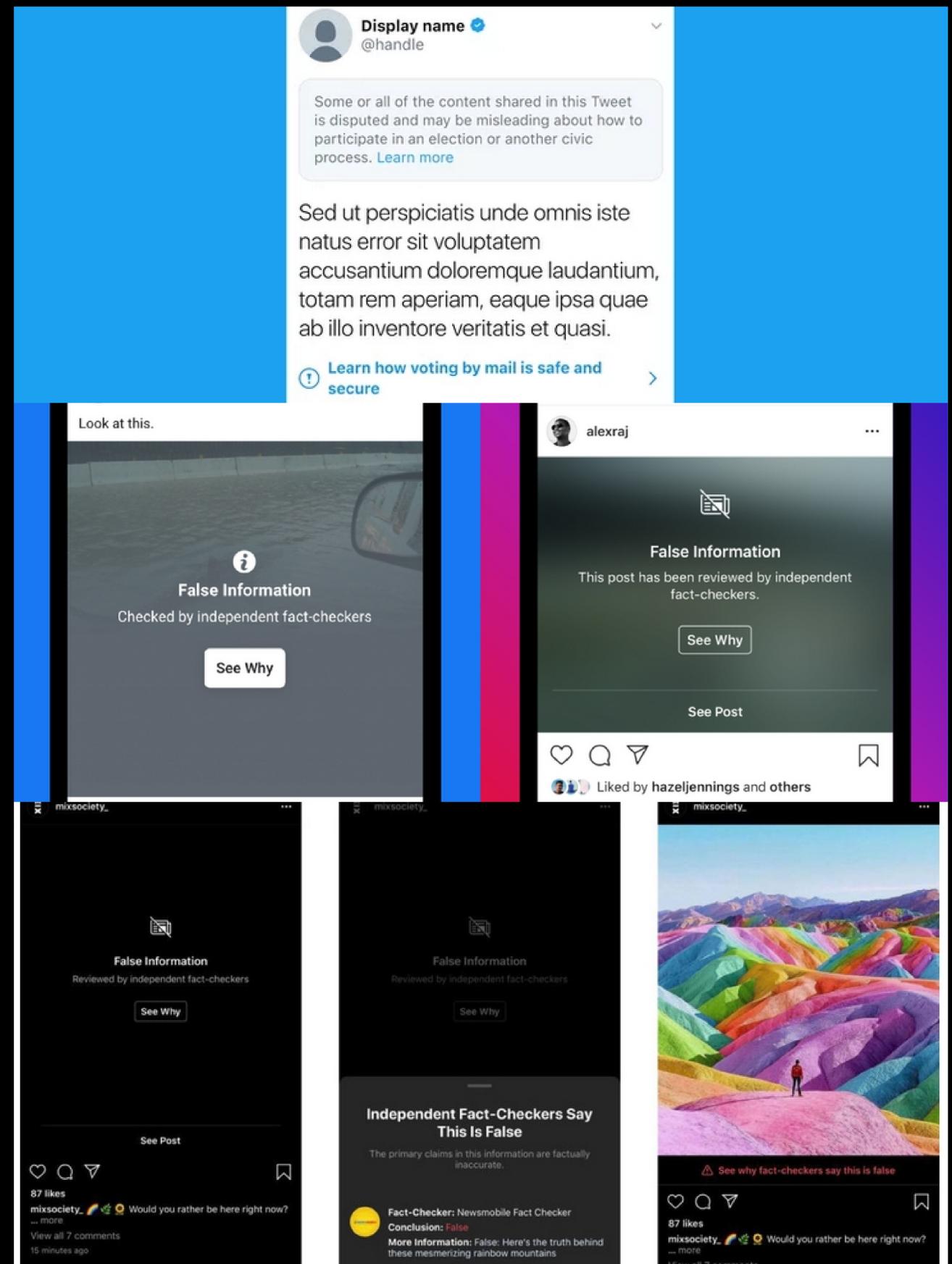
- *How might we design images that are morally responsible for the user's perceptions?*

- *How can we encourage people to be open to experiencing different realities?*

- *How can we have meaningful dialogues with these images that mediate our reality?*

### 2.8 Learning goals.

I am looking forward to this thesis as a way to push me out of my comfort zone. As a student, I have this unique opportunity to take a topic that I know is exciting to work, yet it can challenge my perspectives. When everything you come across is new, I hope to rely on the research to channel my thoughts and shape the outcome.



(TOP) Twitter labelling of false information. (MIDDLE) Instagram labelling. (BOTTOM) Instagram censoring of digital art. © Toby Harriman

## 3. Framing.

This section defines the initial initial research questions I framed from the desk research and the methodology I expect to follow in the further exploration.

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### 3.1 Expected design methods.

Due to the complexity and philosophical nature of the topic, the project can lay heavy emphasis on theory and push me to read more. However, I have decided to tackle this through more making and user engagements, but less theory. Due to pandemic restrictions, most of my engagements will happen remotely. I want to take this as an opportunity to explore the possibility of collaborative platforms and video conferencing applications to engage with a broader audience.

I intend to start with heavy emphasize on research to gather interesting insights that could surprise me and drive my curiosity. I would like to approach the project through iterative cycles of research, followed by prototyping, engaging and reflecting. Through out the process, I want to constantly question how we perceive reality through still imagery. I will be actively documenting my project through out the process to stimulate constant reflection. For my final documentation, I hope to gather these reflections and create a video to engage in continued conversation.

### 3.2 Hypothesis.

Before starting the research, I came up with a few assumptions based on my experience and what I learned during the desk research. This became the basis for the research questions I wanted to ask and the discussion structure that was used for the interviews. I grouped these hypotheses into 3 areas:

*Shared reality - I noticed that visual imagery was once a common denominator to what we perceived as real. Our understanding of historical events or*

*even our past childhood are based on the images that represented those narrations. Since this is being challenged, we need to develop a shared understanding of reality - we need a consensus for the images we create or consume.*

*Perspectives - People are driven by curiosity, but there is a lack of tools to drive this curiosity to understand different perspectives.*

*Innocence and honesty - There is a lack of innocence and honesty in the images we create. We need practices that help us build these values back into image generation.*

## 4. Research.

This sections describes how I gathered user insights to understand the nuances of user behaviors with images. It also gives a detailed account of my conversation with experts in the field of AI and photojournalism. Towards the end, I also talk about how I shifted my focus to a new context to get a fresh perspective on my research.

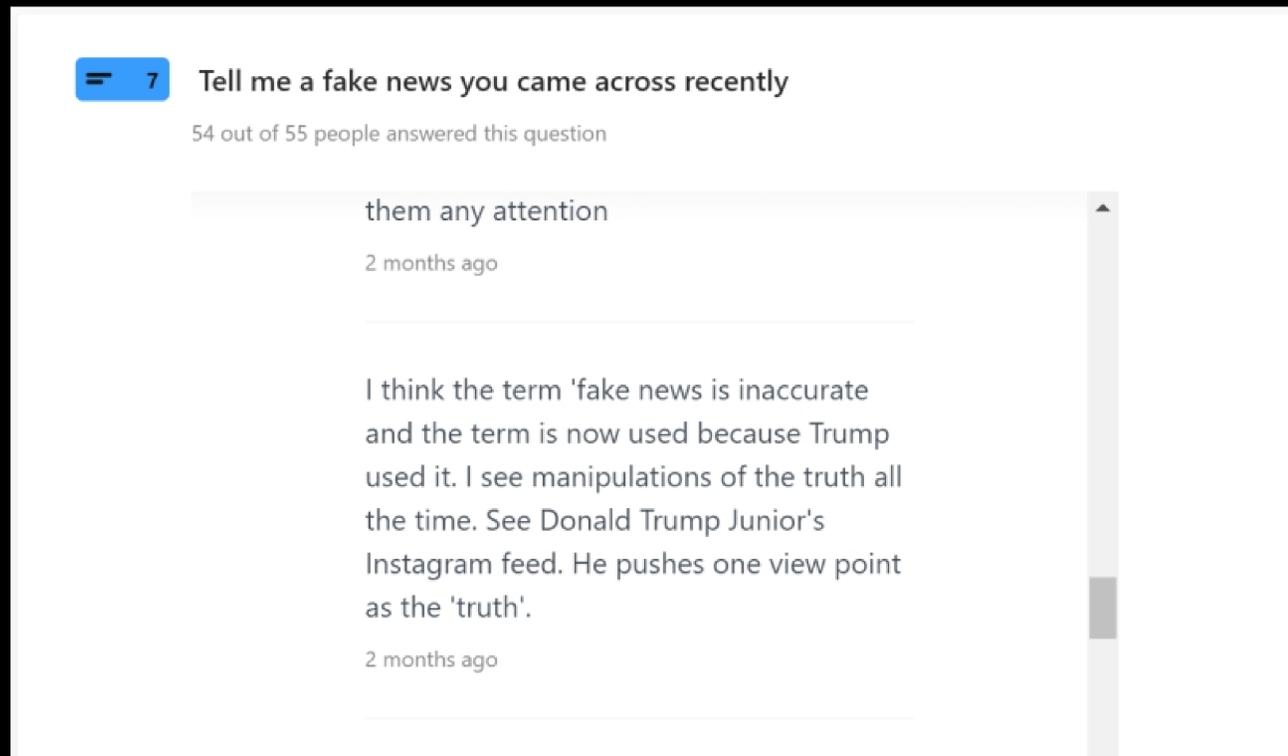
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### 4.1 What-is survey.

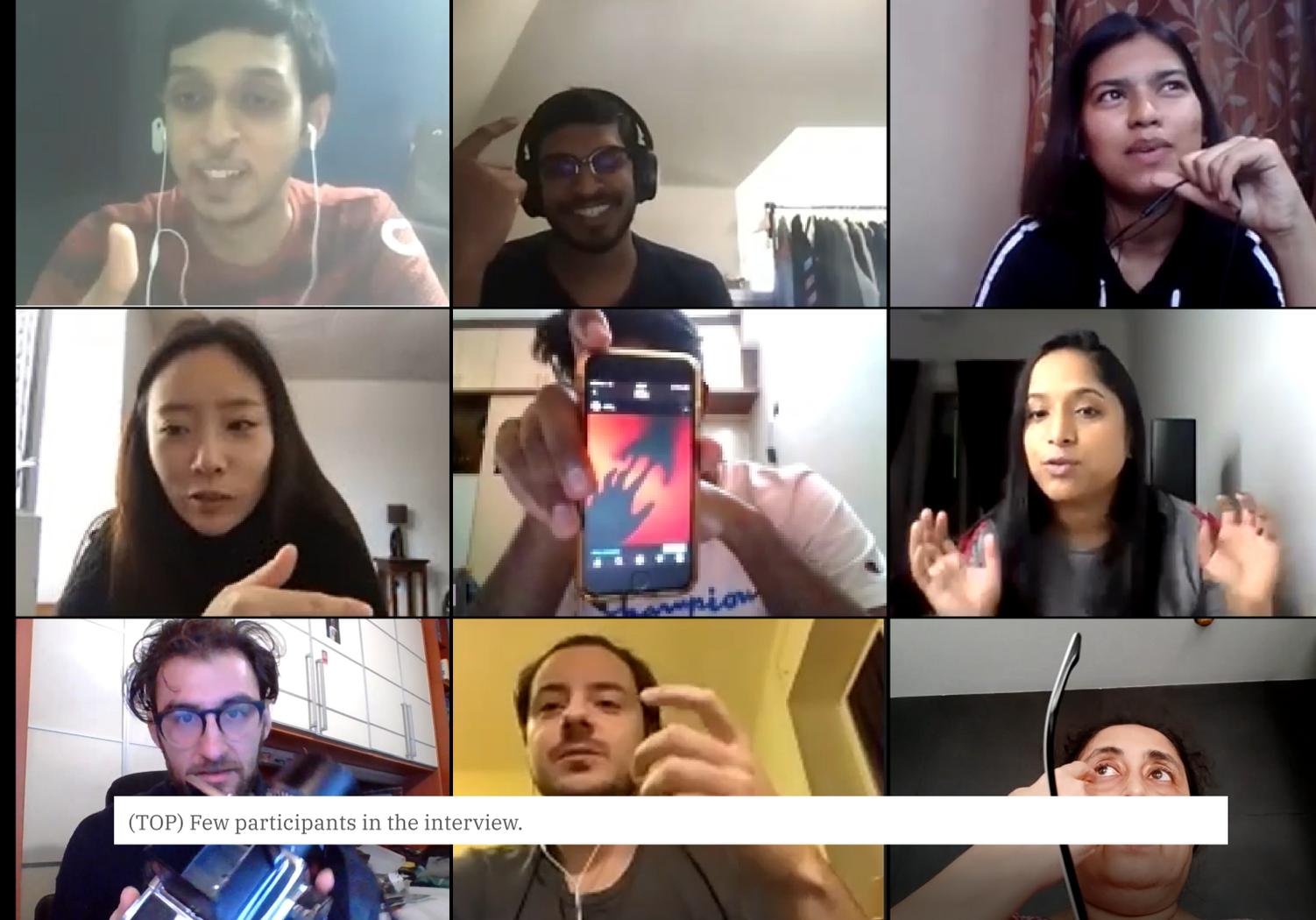
In order to understand how people interact with images in their daily life, I first needed to understand what kind of relationship they form with visual media. I also wanted to check how people behave around the fake/dishonest encounters they come across as well as what they believe could be faked/misinformed in the future. For this, I made a type form survey and shared it with friends, family and their extended circle, as it was the quickest way to gather maximum guaranteed response. The questionnaire asked participants few open ended questions about the last time they felt good in a photograph, what they will do when they see an image or photo or video they believe is not true and their speculation about what could be faked in 10 years time. I got 54 responses over a 5 days time.

Most of the respondents didn't find it hard to recollect a moment when they were pleased about the way they looked. For some it was the connection to a moment in the past that made it look good, while for others it was the environment or the influence of a professional photographer that made them look good. It was interesting to note that very few respondents pointed to the device that captured the moment. This gave me an initial hint that physical device that captures the memory need not be the focal point of my research.

What surprised me was how the participants were aware of the 'not true' encounters they come across and how profound is its occurrence in everyday life. Almost 90 percent respondents mentioned that they come across fake photos once in a while of which around 35 percent mentioned that they



(TOP) One of the few responses during the Typeform survey.



(TOP) Few participants in the interview.

encounter them everyday. When prompted about how they react to these encounters, most people said they will ignore them, except a few who said they might go an extra length by reading the comments, looking for a source or even reporting as fake. It was not clear whether this was due to them being unaware of the fact that they were seeing a fake or misrepresented image. But, this showed an interesting space to provoke a behavioral change towards the images we see everyday.

Most of the respondents also didn't find it hard to speculate what could the people be faking in social media in 10 years. One common theme that emerged was how people are faking their own lives now with some saying "People might be creating a fake life from scratch" or "What else is left to fake". This made me wonder, when we are blurring the line between the fake and real, It might not be about detecting what is fake or real

anymore - but more about how they hinder our decision making capability by challenging our perceptions.

#### 4.2 User interviews.

Interacting with visual media is an omnipresent experience. People have their own ways of interacting with these images they see everyday. This can give rise to a design solution that is easily relatable but also poses a problem of relying on the obvious and not considering enough alternatives. In order to broaden my perspective and challenge my understanding, I wanted to learn from extreme and mainstream users of image media. I was also inspired by what my mentor Jure Martinec once said: "*Research should surprise you rather than supporting the obvious*".

I used straightforward research methods like

remote interviews and sacrificial concepts to provoke the participants. Direct access to people were limited due to Covid-19 restrictions, but this proved to be an advantage as it forced me to reach out to people who were in different part of the world. Over the span of two weeks, I interviewed 9 people from Japan, China, India, UAE and USA in the age group of 18-30 years. In order to get diverse perspective and to capture a varied set of motivations, I carefully chose my user between two extreme use cases - people who never use social media platforms to someone who professionally work on social media platforms, like an influencer. In order to direct the discussion to validate my hypothesis, I made a discussion structure [ref. Appendix] with questions and provocations around 4 themes:

- *What is people's relationship with images?*

- *How do they behave around dishonest encounters?*

- *What is the role of technology in their understanding of reality?*

- *What factors make people believe in the images they see online?*

As a first step, I created a discussion structure [ref. appendix] around the four themes that I wanted to investigate deeper. It consisted of several specific questions that could be potential conversation starters to lead me to exciting stories about encounters with images. To get access to broader stories, I made it a point to formulate open-ended questions. It was also essential to reflect on each interview and rework the discussion structure. Discussion structure thus became a living entity that metamorphosed during the research phase.



question the images only when they know they are misinformed (see 4.2.1 developing a critical eye). To me, this emphasized the point that apart from creating images that are accurate records of the ground reality, we also need ways to bring a behavioral change in how we interact with images.

He also explained how amateur investigators like Propublica and Bellingcat do critical investigations on images to counter misinformation campaigns. I was excited about the investigation possibilities with images even though I was doubtful whether this could be practiced as an everyday ritual. But when he explained how people also form an informant base in the journalist circle, I could see this as an activity that is also crowd-driven. It is almost like gathering multiple perspectives of the people who experience the events first hand that creates a more informed and scrutinized narrative. What excited me, even more, was the engagement of people present at the moment of capture to tell the story of the image. I wonder whether images could be a portal to alternate perspectives of people present who experienced the moment of capture.

#### 4.4 Analogous inspirations

In order to get a fresh perspective on my research, I also looked at analogous inspirations or different contexts where people alter reality: a cosmetic surgeon who alters a different person reality, people who actively change their own reality like someone who experienced psychedelics, people who live in a different reality like a color-blind or synesthete, a researcher who works with techno psychedelics and an award-winning visual effects director who creates illusion to make us believe in reality. Rather than asking them specific questions, I triggered the conversation with examples to get a sneak peek of what everyday experiences are when you live in a different reality.

I noticed that people naturally develop a defense mechanism when their perceptions

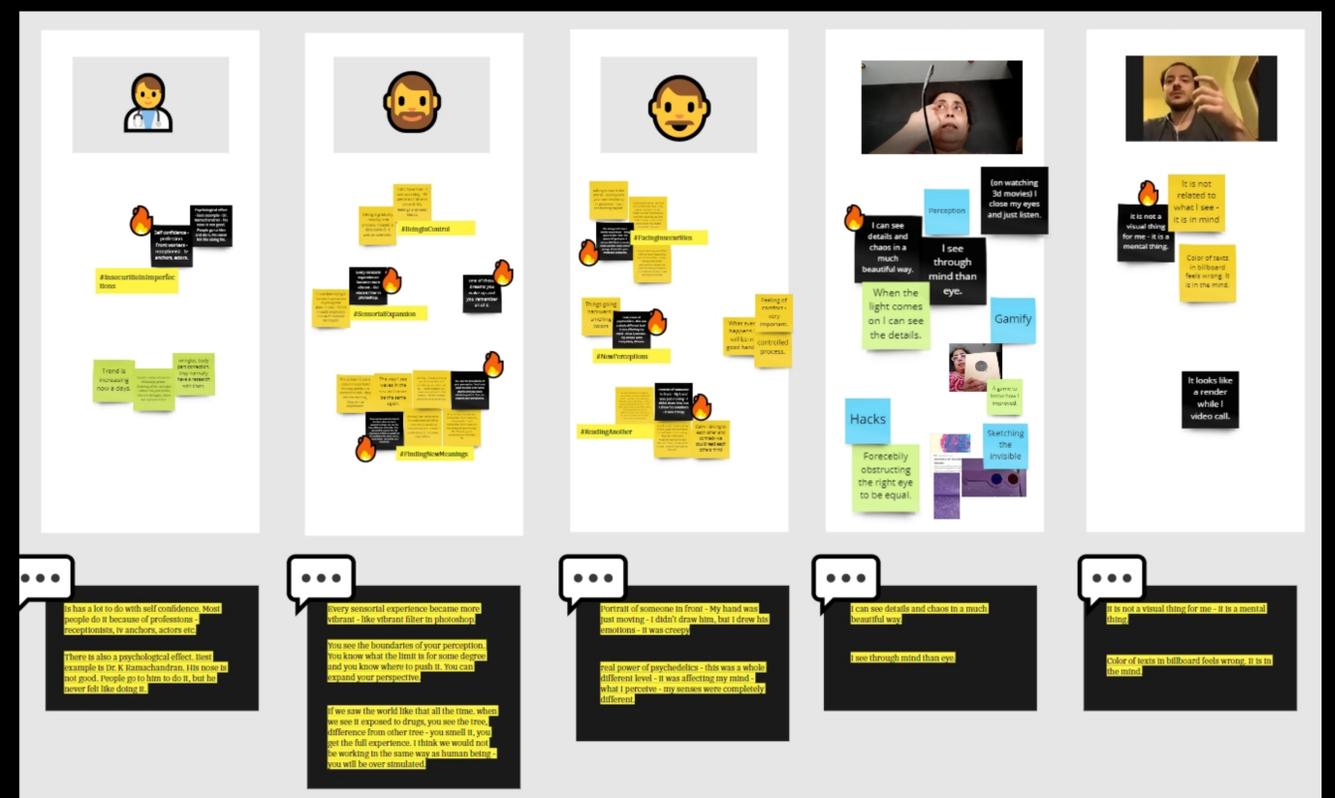
are challenged. A color blind person pointed to how he finds alternate ways to represent an object because his reality is devoid of color. For example, in order to narrate an experience with a red car, he uses other representations like the model name or place which also shows a natural attention to alternate details. Or as a person with lazy eyes (or lower depth perception) mentioned during the interview, how she saw details rather than the whole. Even though this was taking me to the rabbit hole of perception, but it was a stronger revelation how different sensory understanding can help people see images in different ways and see things which we never saw. *This made me question whether it is possible see the same image through a different person's eyes?*

I was new to the term 'psychedelic technologies' and it was interesting to learn how scientists use VR to experience mystical-type experience comparable to Psychedelics. This took me back to a 1960's experiment at International Foundation for Advanced Studies where technologists wanted to create machines that could transform consciousness in the same way that drugs did ("The Era of Fake Video Begins", 2018). I could draw a direct connection here with experiencing digital images when Dr. Olivia pointed to the importance of psychedelics in changing rigid thinking. According to her, all disorders are characterized by rigid thinking and psychedelics helps people to skip a sense of ego and makes it easier to accept a different reality. This was also mentioned by participants who had psychedelic experience as they narrated how it helped them let go of the rigid thinking and see deeper meaning in otherwise mundane visuals. *This made me wonder whether digital images could prompt people to see beyond what they normally see and look for alternate perspectives.*

I was also inspired by the application of visual effects in movie production as VFX artists use illusion as a means to shape a narrative. I was fortunate to have a meeting with Biju Dhanapalan, who is a leading VFX director in

Indian, English, French, and Hollywood productions. During our conversation, he was quick to point out the relevance of the topic in the history of image-making. According to him, pictures can never represent the truth as they always skip what happened beyond the frame, but they can probably come closer to telling the truth. In his own experience, it doesn't matter whether you tell the truth in visual effects as you can always recreate a moment in a different setup. As he explained, "You cling on to certain aspects of the reality and you create that aspect across time and it gets recreated in people's minds. You don't have to show reality as people have a tendency to extrapolate in all directions and time." *Perhaps the right question I should ask is whether it is necessary, to tell the truth. Can we rather design tools that could help people to extrapolate*

*the picture and construct an informed understanding of what is happening outside its frame.*



(TOP) Key quotes from analogous inspirations.



(TOP) One of the several empathy map created. (BOTTOM) Synthesized insights. [ref. Appendix].

# 5. Synthesis.

This section describes how I came up with different project direction through a detailed synthesis of user insights I gathered earlier. The section concludes with defining the design qualities that were used to narrow down the concept sketches later on in the process.

## 5.1 Interpreting the research

Research phase was exhaustive and pushed me to explore the breadth of the problem space, identify alternatives and to be inspired. But time and again I had to remind myself that this is not a research project and I have to narrow down my focus. Research presentation was a turning point where I could see that I had to articulate my findings in a simpler way. In order to bring clarity into my project and to define the scope and boundaries, I went back to resynthesize my findings.

I organized the most compelling quotes and stories, especially the ones that inspired and surprised me. These were further categorized to identify patterns and themes. It was also important to translate the themes to actionable insight statements - that will point the way forward. The ubiquity of digital images made developing insights a daunting task as it was easier to fall for the obvious. It was important to interpret the apparent from a different lens.

Resynthesizing the insights also gave me an opportunity to look at the user stories with a new vigor. I noticed that my initial learning were only trying to communicate an observation, but not necessarily giving me actionable statements. I created an empathy map populating the 'say-do' quadrants with user stories and 'think-feel' with my interpretations. These were later translated into needs that were particularly surprising or gave 'aha' moments. I came up with eight directions [see appendix], which were further narrowed down to 3 design opportunities.

## Active narrator

Images are often just representations of a narration. They are passive supporters of the content and not active storytellers.

### Context

Emily, a suspicious user (when seeing an image in a Twitter feed), needs to look out for sources to clarify what she sees because she doesn't trust the photos and feels most are skewed and are taken out of context.



## Untold story

Pictures are dynamic. They are often manipulated and change their form during their course of journey from one device to another. There is also a story to how the picture took its shape than what is in the picture.

### Context

A deceived person who has grown up trusting what she sees needs someone's help to better understand the images because she still believes what she sees is true.



## Expanding the frame

Images are two dimensional representation of a reality which is multi dimensional. A way to expand this is by capturing multiple perspectives and opinions understanding of time space and emotions.

### Context

A confused social media user needs to hear different perspectives because she believes she will be better informed when listening to different sides of a story.



### 5.2 Direction 1 - Active narrator

I noticed that for most research participants, images were part of the content that passively support a narrative. Even when it adds a visual dimension to a narrative they rarely see it as an entity that adds value. They also mentioned how they had to go through the hassle of looking for alternate sources to what they see because, even if the photos are legit, they could still be misinformed as they are often used out of context. This made me question the intentionality behind the presence of an image. Can we add more relevance to the picture so that it can become an active narrator of the context?

*How might we create images that viewers can actively engage with to have a closer understanding of the context?*

### 5.3 Direction 2 - Untold story

Images are often seen as static entities through which people form a narrative. But as picture travels from one device to another, they are often manipulated and change their form during their journey. This gives photos a dynamic character, which confuses people who have grown up with a single source of information like newspaper media and often need someone's help to see through the manipulation. We need tools that empower us to see the photos critically and discover new stories.

*How might we build and intuitive way to learn more about the untold stories of a picture?*

### 5.4 Direction 3 - Expanding the frame

Still photos are two-dimensional representations of a multi-dimensional reality. We interpret these realities often through the perspective of elements (subjects

and objects) in focus. But in a highly individualized world, we need to look beyond the focus points or salient elements of a picture (Adobe Research, 2020). A way to do this is by capturing multiple views and opinions that give a deeper understanding of time, space, and emotions.

*How might we bring multiple perspectives into our understanding of an image?*

### 5.5 Design Qualities

The three directions helped me narrow down the qualitative information to actionable statements. In order to conclude my synthesis, I also tried to articulate the qualities of interaction that is inherent in these direction. These qualities were also used later on to choose the ideas that stands for the design cause.

#### 5.5.1 Intentionality

Intentionality defines the quality of an image to stand for the context. It tries to answer the question - *Why is it present and part of the narrative?*

#### 5.5.2 Discoverability

Discoverability is the quality of an image to facilitate people to see behind the scenes to take more informed decisions. It answers the question - *What else is there for me to know?*

#### 5.5.3 Perspectivity

Perspectivity is the quality to see beyond the frames to take a stance. It answers the question - *How else can I see this?*

## 6. Ideation.

This section gives a detailed account of the brainstorming and cocreation workshops I did to refine the opportunities into clear points of inspiration. It concludes with how these ideas were used to create video prototypes to gather user reactions.

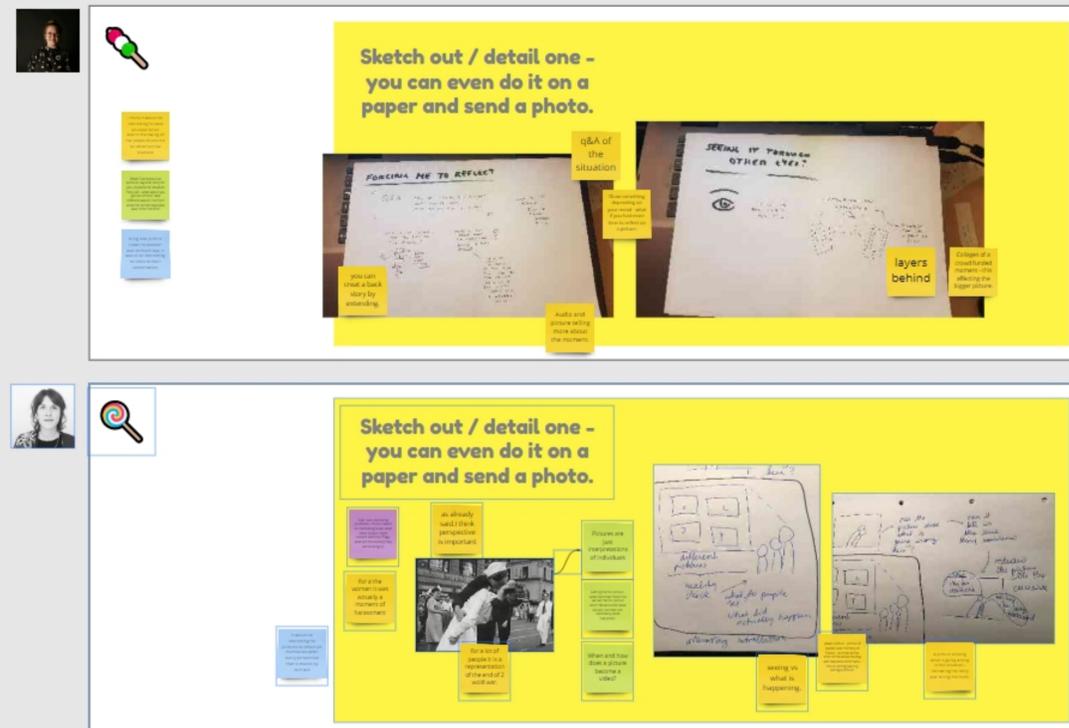
During the research phase, I scribbled my thoughts in the form of low-fi sacrificial concepts. Even though these helped me validated my initial hunch, I felt an urgent need to push me out of my thought biases and generate clear points of inspiration. In order to broaden my perspective and explore possible futures for image experience, I decided to engage people in my ideation process. I aimed not to focus on quality but to generate a staggering amount of creative ideas. I conducted 4 brainstorming sessions and 2 co-creation workshops with students from UID, people whom I interviewed and designers from IDEO and Arrival.

### 6.1 Brainstorming with class

Working remote had its benefits of easily reaching out to people, but at times it needed careful planning as remote workshops could easily result in confusions and boredom. In order to do a trial run and test the different How Might We questions, I conducted a brainstorming session with the class (MFA Ixd2) of 12 people over zoom. Idea was to generate provocative scenarios for the three questions with-in 30 minutes (10 minutes each). It resulted in a lot of interesting thoughts, but I also noticed that there was some fatigue and boredom as people moved towards the final question. For the next sessions I created a workshop structure including activities that encouraged discussion and also adding moments of break to reduce the fatigue [see appendix].

### 6.2 Co-creation workshops

Since most of the participants were not familiar with the design space, I gave a brief



(TOP) Participants of one of the workshops. (BOTTOM) Couple of stories built during the workshop [ref. Appendix].

description of the project and its current state. Miro was used as the brainstorming space and in order to familiarize people with the tool, I gave a small drawing and visualizing exercise. This was followed by the How Might We questions:

- How might we embed experiences of the moment and stories of the ground into images?

- How might we listen to the stories a picture has to say?

- How might we bring multiple perspectives to our understanding of an image?

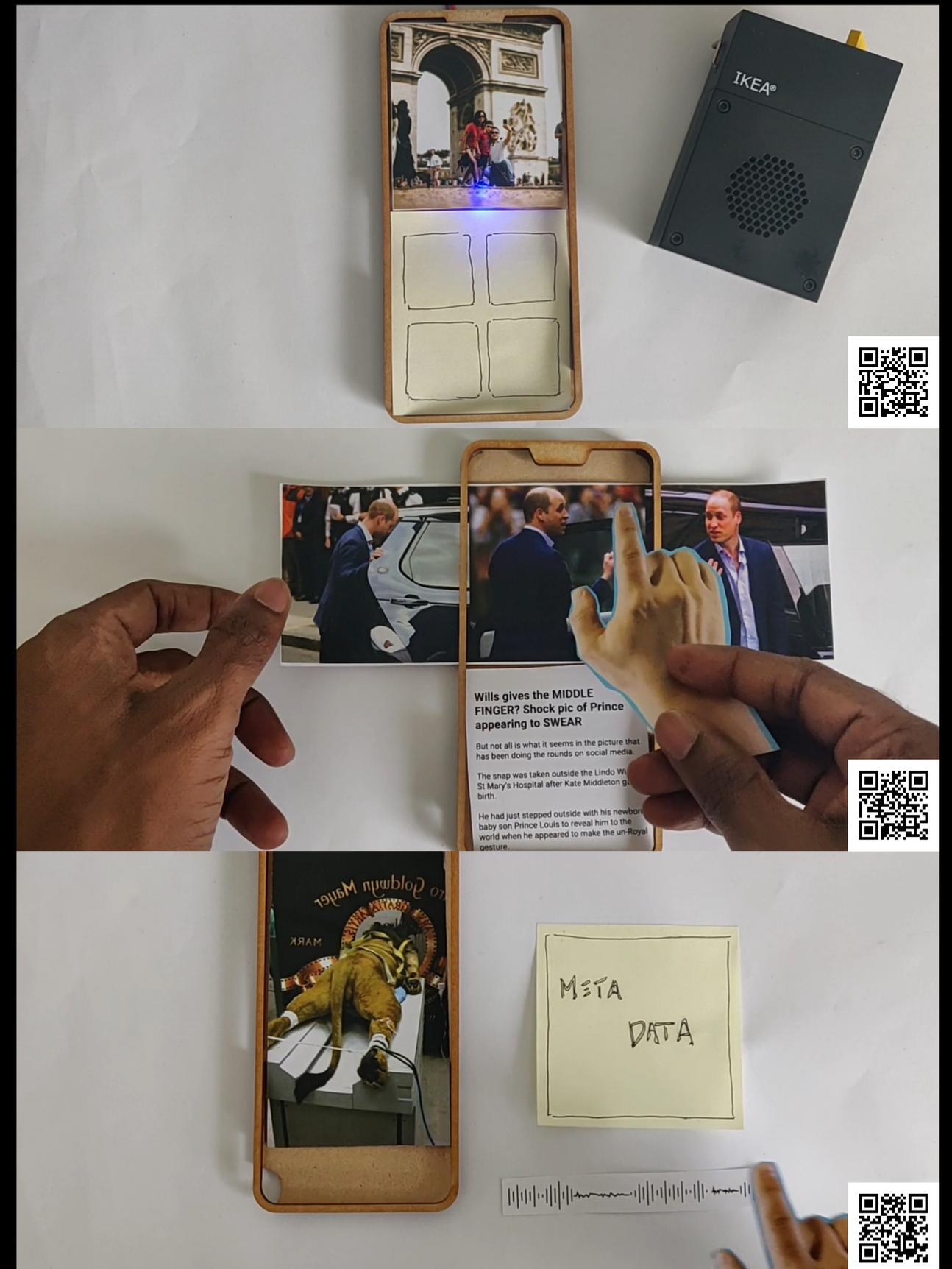
For each question, I gave a couple of statements to provoke thoughts based on early sacrificial concepts. (e.g.: 'what if pictures were reactive to the narrative you add,' 'what if you could see what different people see in an image? What if pictures were conversational agents? etc.). After grouping the participants in pairs, I gave one HMW question each. I also interchanged the questions after each session to encourage people to build on each other's ideas. As a final exercise, I asked each of them to rate their best four ideas and build a story based on one of them. To give a structure to the story and to make the thoughts tangible, I also prepared a few inspiration probes (e.g., Consider 'where' it is happening, 'what is the object' that is helping, what is the 'interaction' that is happening and 'how' the interaction helped). This enabled me to funnel the ones that merited further exploration and have an early visualization of the specifics (what, why, how, when, and where). It also made me reflect on what I aim to achieve through my project in a more detailed way. For me, each workshop was a testbed for the next, and I used the learnings from each to refine the *How Might We* questions and generate more detailed stories.

### 6.3 Video prototypes

The workshop and brainstorming exercises resulted in 100 + ideas. I selected a few that

triggered a lot of excitement during ideation and the ones that showed traits of design principles to make quick video mock-ups. I decided to use videos as it was a straightforward way to gather early reactions without reaching to people in person. I also used them to reflect on whether they carry the interaction qualities of 'intentionality, discoverability and perspectivity'. The mockups were one-shot videos in which I narrated the experience while enacting them through pictures and writeups (see figure). These had cameras that generate photos based on what you describe while easing away the rest or images that react to a live radio narrative. There were also metadata based on sounds that respond to image manipulation and photos that react like chemical compounds when brought near another photo. There were pictures that changed the narrative based on the people you choose in the photo and photos that change perspective based on the direction you choose to see. Each of them depicted a signature interaction to provoke a discussion.

I later gathered the responses by sharing the videos with the people I interviewed and my mentors and students at the IxD program. I recorded these reactions to reflect on them further. Reactions to the mockups were mixed but triggered some interesting discussions and ideas during further brainstorming sessions. For example, some people associated mixing images with the act of painting where you mix color to get a new hue. There were also some confusions as some people pointed that the change in written contents or narrative was so subtle that they might easily skip their attention. However, most people were excited about the idea of changing the perspective of the picture and stories. For instance, one participant stated, "Up until a few years ago, pictures were pixels we interpreted with the eyes. This shows a future where the picture becomes dynamic in terms of dimension. There is a very contextual understanding of



(TOP) Video prototypes made for early validation of thoughts.

the content of the picture." This was particularly interesting because it also made me realize that we could experience a picture beyond seeing it. The tools I design could also give new ways to interpret a picture, and having the ability to do this by changing perspectives gathered a lot of reactions. I took this as a cue to explore further in this direction. Alternatively, after reflecting on the ideas and resulting concepts, I was motivated by the camera direction which gives me the possibility to see the final solution from an image creation point of view. Looking back and reflecting, I could see three concepts emerging as the favorite and meriting further detailing. They were:

*What if a camera could capture the invisible data/elements of the moment and attach it to the photo as actual reality of the place?*

*What if images could reveal new narratives as we ask questions to it?*

*What if people present at the moment of capture could add their side stories to an image and viewers could read them?*

## 7. Sketching Concepts.

This section will cover the steps I took before reaching the final artifact. This is also where I chose a platform to find the possible answers to when, where and how the interaction could surface. After an overview of what concepts came out of this exercise, it concludes with a detailed account of user testing I did with these concept sketches.

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### 7.1 Pushing to an extreme.

After deciding to take the idea of a tool that gives a nuanced way to interpret a picture through a different perspective, the big question was how I might accomplish that. As a first step, I took it to the writing board to articulate my thoughts to find answers to these questions: What is it? Why do we need it? Who is it for? When and where does it happen? And how does it work? This was also a moment when I looked back at my initial brief through a new lens. I tried to write this in the form of a value proposition to reflect on further. Early signs pointed to a storytelling platform that helps curious and confused users who want to be more informed to take a stance by using images as a portal to gather different perspectives and listen to the voices of the people who were part of the context.

After the mid-presentation, I felt that the value proposition seemed a bit shallow, and I was not clear on when and where this could be used. It was also unclear, in what context do we need to be more informed and how does feeling more informed look like. It also raised the questions of why we need a new storytelling platform and whether the solution could be part of an existing platform. To find the answer to these questions, I decided to see how interpreting an image could happen in an already existing platform. This also seemed like a logical way forward as images are omnipresent across different platforms and could also help me focus on the context of experience.

I chose Twitter as it has a strong interplay of narrative and images. The inherent aspect of being driven by a cause also emphasized the need to have images that portray ground

reality. Moreover, the presence of voices of people in power also gave interesting choices of context that I would work with. Choosing a platform also forced me to work with its possibilities and characteristics. To define a context, I chose few photographs with a political angle (2021 Myanmar coup, A women's rights march, etc.) to see how the concepts could work during such an event. I created three different tools that answered the three HMW questions (*ref. section 6.2 - Co-creation workshops*). As a first step, I sketched a few wireframes to develop a user flow, which I later detailed with a Twitter UI Kit.

### 7.2 Sketch 1 - Contextual camera

This prototype focused on capturing the invisible elements that define a context. When you capture a picture, there are also other elements that constitute that moment, like weather at that particular time, ambient sounds and voices of the people, parallel events at that place, etc. These unintentional elements could expose the scene in surprising ways to create friction. Contextual camera triggers unexpected experiences to help us reflect on the moment. It brings forth aspects that challenge the meaning of a captured picture. I used four elements that the camera could capture along with the picture and used them as 'filters of the moment' - weather at that place, voices of people, headlines of a parallel event and music played in radio at that moment.

### 7.3 Sketch 2 - Conversational media

This sketch explores the idea of having a conversation with an image to discover different narratives. I built a conversational interface for images, where you could ask questions, and you get answers. The initial idea was to connect with the elements you capture using the contextual camera and use those to answer the queries. As a starting point, I used a few questions raised during the ideation session to create the conversation

interface. They were 'How was the moment like?', 'When was this taken?', 'How did it feel like at that place?', 'Where was this taken?'.

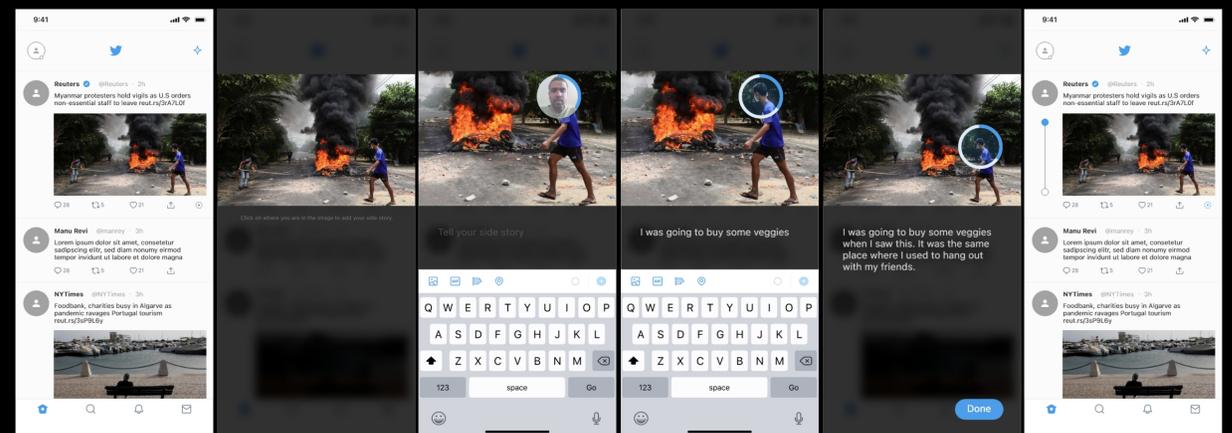
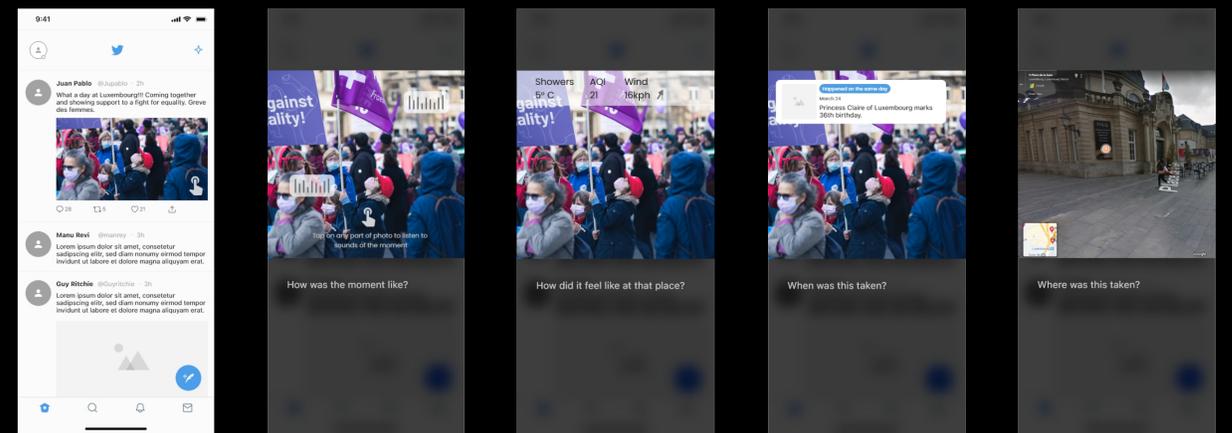
### 7.4 Sketch 3 - Shift

Shift was devised as a feature that gives relevance to the people who were present at the moment of capture. According to my early observation, there are 4 stakeholders in an image - The one who captures, the one who is in the picture, the one who were there in the proximity and the one who sees the picture. Shift gives people in the picture or people who were there at the moment to add their perspectives in the form of side stories. They thus become a storyteller for the context, and, for people who see the picture, It expands the frames of an images through these stories of people who experienced the moment.

### 7.5 Reacting to sketches

To determine which of the three concepts to detail for the final concept, I decided to do some user testing for early feedback. I tested these with seven people, most of whom were part of my user research and my mentors and classmates. I got a mixed reaction for all three concepts, with most participants also giving alternate possibilities to look into.

Many people questioned the relevance of the captured elements, with some pointing to these taking away the message that the person is trying to convey. As one person mentioned, "If it is a serious event, these elements could mislead the context and might even deviate from the cause." They also pointed out that some of these features could be valuable in a different platform or over another time. The word filter was also confusing to some, as it was unsure whether it will alter the picture. There were also some positive reactions as these were unbiased facts of the moment and not the person's biased opinion. There were also suggestions to add elements like emotions of people and sounds changing as you pan across the photo.



(TOP) Contextual camera. (MIDDLE) Conversational media. (BOTTOM) Shift.

With the conversational media, people questioned the kind of conversations they could have an image. People also interpreted the questions in different ways. For example, when I prompted the image with 'How did it feel like at that place?', one answer was the weather data. But this confused some, and according to one participant, "I don't think the question would relate to the environment. I relate it more to the emotion". Some raised doubts about what will happen when asked a different question. This endless variety of verbal conversations also prompted most people to point to the cognitive load of having a conversation. For instance, one participant stated, "When I am curious, I zoom in to see the details, I am not sure if I will like a dialog with an image, I would try other ways also." This gave me a cue to explore how an active non-verbal conversation looks and how images could visually react to provide answers.

Most people were quick to point out that it will be exciting to listen to the people in a picture, but the chances of these people getting involved are minimal. Even though the concept generated a lot of interest, it also showered a lot of questions like "What motivates a person to tell their side of the story? What is the incentive you can give for people to tell their story?", "How will you be notified to tell a story?". Some participants also pointed to the credibility of the information and raised concerns like "Is it moving the noise in the comments to noise in the image?". On the positive side, people were curious about these side stories, and during the discussions, many participants came up with new stories of what could have happened. Reflecting on this, I noticed that images could still play an important role as a story telling medium, but it needs carefully crafting an experience that is noise free.

### **7.6 Iteration points.**

Even though multiple sketches gave alternate ways of adding and retrieving stories from an image, the experience seemed scattered. There is a possibility to show the experience as a collective whole whenever a person encounters or creates an image.

#### ***From multiple sketches to one.***

The concept sketches showed clear points where the experience was broken and confusing. I decided to consolidate the feedback I got and implement them in the final result.

#### ***Defining the boundaries of perspectives.***

While going through the concepts, I felt that the term perspective was loosely defined. Defining the boundaries of these perspectives could give more clarity and help me articulate the kind of information people could gather.

#### ***Non-verbal conversation with images.***

Verbally asking a question like a chatbot was confusing and limiting and had to cater to various questions. The end result should show the discoverability through non-verbal interactions.

#### ***Expanding the frame.***

Adding stories of the people in the picture raised questions of motivation of the person and the minimal chance of it happening. The end result should focus on alternate ways to bring opinions and perspectives.

#### ***Noise free perspectives.***

When you add multiple perspectives and opinions to a picture, it shouldn't be adding more noise to it. Images should still retain their visual clarity. One way to do it is by keeping the perspectives out of the graphical area.

#### ***Cross-platform tool.***

There were confusions in capturing the invisible elements along with the visual ones. These elements need to be relevant to the context like voice and opinion of people, news headlines, etc.

#### ***Relevant factors of the moment.***

Choosing twitter helped in grounding the interaction and helped me crystalize when and where experiencing alternate perspectives matters the most. But, it showed only a limited possibility. The ubiquity of images and having a cross-platform experience can show the impact over a broader landscape.

From the iteration points, the discoverability through conversations and perspectives merited further refinement. To focus on final concept development, I redefined my brief as a cross-platform image probing tool to discover diverse perspectives.

Design a cross-platform image probing tool that helps viewers to be more informed of different realities by connecting them to multiple perspectives of an image.

# 8. Concept Development.

This chapter covers the steps I took to reach the final artifact. It is also where my learning goals manifested in the final outcome.

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## 8.1 Mapping the complexity

The channel of the final concept was to find an appropriate way to map the complexity of reality through different perspectives. For this, it was essential to define the boundaries of perspective I wish to include in my final design. Connecting back to my earlier thoughts on expanding a frame (*ref. 5.4 Expanding the frame*), I decided to see the different ways in which a change in perspective could create a shift in narrative. I looked at real-life news events for inspiration, and three perspective shifts inspired me.

Firstly, the perspective can shift by looking at the same event from a different vantage point or camera angle. I was inspired by a viral photograph of prince William swearing at the crowd, where a different angle of the same moment shows him holding three fingers up to say he now has three children ("Prince William: It is all about point of view," 2018). Spotlight (n.d) has reported multiple photographs where a different angle tells a different story. I felt that there was a potential to bring the totality of an event into a picture through the perspective of different camera angles.

Secondly, the geographical change and change in time also give a different perspective to the same event. I drew inspiration from how media around the world framed coronavirus news ("Comparing How Media around the World Frames Coronavirus News," 2020). I noticed how the same pictures were giving alternate perspectives as the news travels across geography. Even though the study mentioned above shows a shift in focus of narratives as time passes, the

unproven premise is if photographs impact it. The research on how doctored photos of past public events can alter people's memory is an indication that the temporal aspect of perspective might work (*ref. 2.7 Tackling visual misinformation*).

Finally, the perspective shift could also happen at the moment of capture. I was inspired by the feedback I got from the Contextual camera (*ref. 7.2 sketch1 - contextual camera*) that relevant contextual elements could influence the picture at the moment of capture. I felt that provoking the moment of creating an image with multiple perspectives could give an option to connect a photo with a larger reality.

## 8.2 Inspiration - Photosynth

A variety of existing approaches were referenced during the beginning of the project and were mentioned earlier (*ref. 2.7 Tackling visual misinformation*). When I look back in the interest of transparency, the Photosynth concept developed by Microsoft (2008) has been a significant influence in visualizing multiple perspectives of the same environment. However, during the development of the thesis, that project was not consulted. It was purely used as an inspiration to think about how a multiple perspectives of an event can be visualized.

## 8.3 Choosing context

To visualize the full potential of the concept, it was essential to choose a context with multiple opinions associated with it. I used the 2021 storming of the United States Capitol (Wikipedia, 2021) to use the abundance of photographic resources and associated narratives available on the internet (*ref. 8.6 Visual Design*). I was also inspired to look into a context with a non-political angle to show the breadth of the concept. To explore this, I also looked into sporting events that were center points for debates, like the 2018 US open final

between Serena Williams and Naomi Osaka (BBC, 2018).

## 8.4 Form and Interaction

As a first step towards a tool that helps discover multiple perspectives, I had to come up with a design that connects multiple images and narratives into a single one. My solution was to introduce a suite of tools that gives 3 alternate ways to discover multiple perspectives. This was also the point where I instilled the interaction qualities (*ref. 5.5 Design qualities*) derived from the research synthesis into the final design. It is implemented through:

### *Spatial perspective tool*

This tool helps the user to pan across the image to see it from a different camera angle. The interface of the tool consists of a 'POV' pointer. The pointer would then allow the users to navigate the graphical space and display another image from its position. As you pan across the image, a glittering animation effect indicates where a new POV is available. This is subtle signaling that the image has something to 'say'.

### *Location perspective tool*

With the location perspective tool, the user can move the image to a different geographical location to see the change in the narrative. The interface consists of a map and a location search tab. Users can then pan the map or search for a location to explore changes in headlines, stories, and people's opinions. It also doubles up as an experiential equivalent of traveling with an image to discover an alternate perspective.

### *Temporal perspective tool*

With temporal perspective, the user can move the image across a timeline to see how the news and article headlines, voices, and opinions in the form of tweets and captions



(TOP) Early prototype of location perspective tool.

changed over time. The interface consists of a timeline and is an analogous reference to a time travel experience with an image.

I then took the experiment further to provoke a perspective change at the moment of capture. This resulted in the contextual camera tool that captures the alternate realities that are relevant to the photo. In addition to the lens visuals, the camera interface also displays contextual elements like live opinions and tweets, associated news feeds, articles, etc. This way, you could suddenly connect the photo to a context as you capture.

### 8.5 Visual Design

The most crucial part of the visual design was to show the possibility to see different perspectives of the same image. On the tool interface, I wanted to distinguish the

major interactive element. For the spatial perspective, the image part is visually enlarged to give space to pan and discover. For the location perspective, the map part of the screen was given prominence to move across geography. For the temporal perspective, the narratives associated with the image were emphasized. To direct the user to spaces in the image to discover different perspectives, I added subtle hints in the form of sparkle animation and direction pointers. For the camera I added the contextual elements in the form of a slide bar. It was inspired from a flash news ticker that draws your attention to a flash event that happened. I took it further by highlighting the most popular opinion. Here the inspiration came from amazon kindle that shows how many people highlighted a particular text [ref. Appendix].



(TOP) Early wireframes and ideation sketches.

# 9. Mapping reality.

This chapter describes elements of the final result.

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## 9.1 'SHIFT'

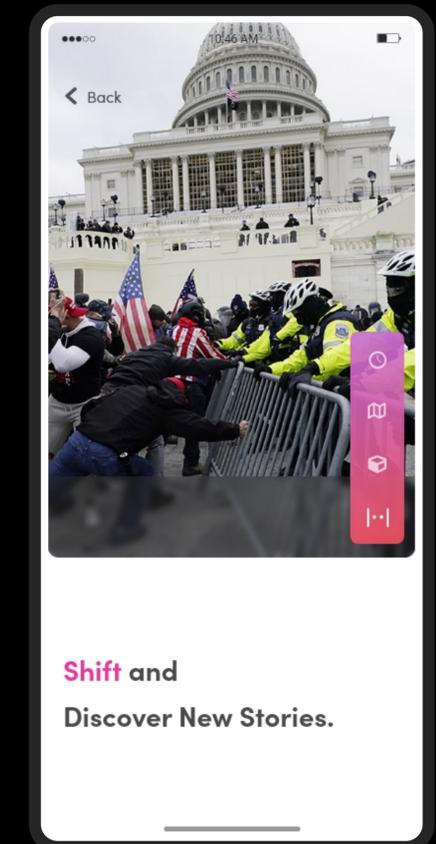
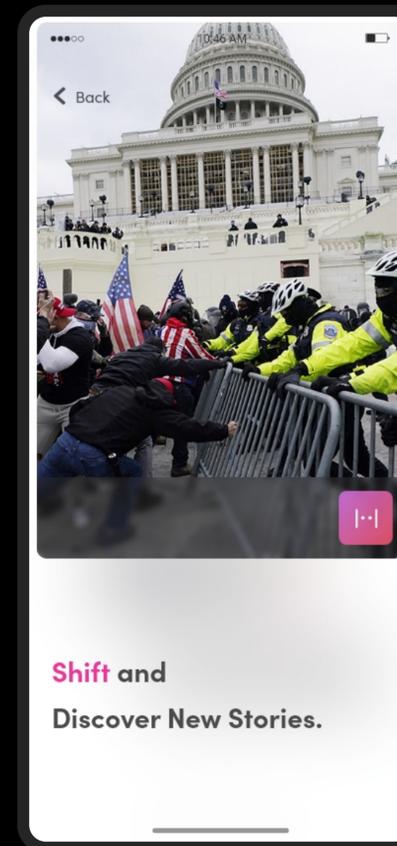
Digital images are everywhere and in abundance. With the emergence of fake news articles and manipulated imagery, it is now imperative more than ever to critically examine the images we come across. This project explored how any image could be used to expose the viewer to multiple perspectives.

SHIFT is an image probing tool that enables a new methodology of exploring multiple perspectives of a context. It is designed to keep you informed of alternate realities out there. When multiple images are taken of the same context, they build a rich collection of diverse perspectives. SHIFT connects these images and uses any image as a visual search tool to uncover alternate perspectives from the same scene. It thus helps people to discover alternate ways of seeing the same context.

Figuratively speaking, SHIFT is a *cartography of perspectives* that maps all the viewpoints of the same scene into an image. It has two elements - **Fluid seams** and **Contextual camera**.

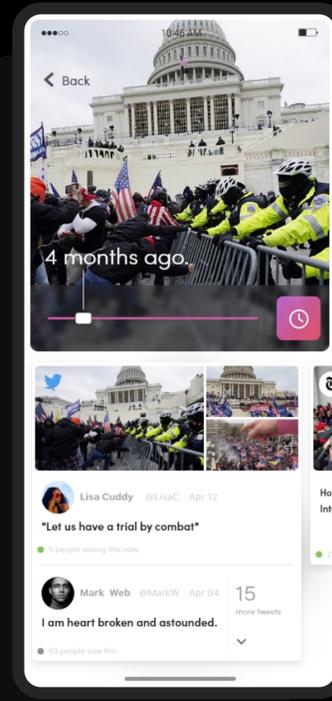
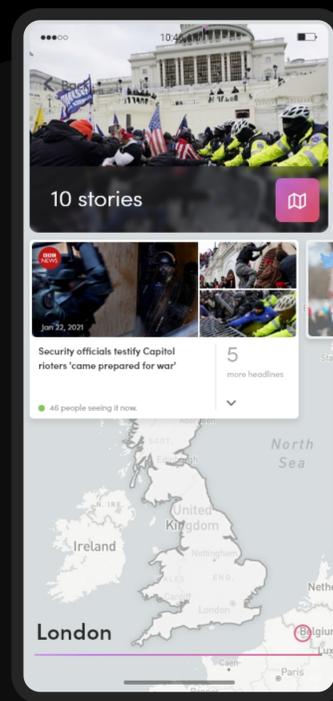
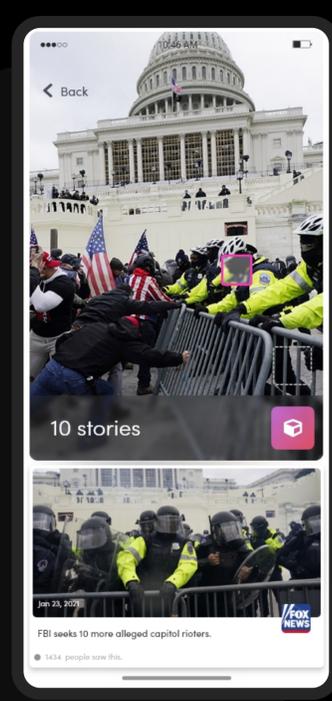
## 9.2 Viewing experience - Fluid seams

Fluid seams is the image viewer part of Shift that creates a 'visual hyperlink' between images. This enables you to view an image from multiple perspectives across space and time. People can thus discover new narratives and alternate view points of the same context. It has three modes:



**Shift** is an image probing tool that reimagines still imagery in an interrogative way.

(TOP) Shift startup screen. (R) Shift modes pop-up.



POV



Location



Time



(TOP) Three modes of SHIFT. (BOTTOM) Shift concept video.

### POV mode

In POV mode, the user can pan across the graphical area of the image to display a picture from that point in space.

### Location mode

In location mode, the user can move the image to a different geographical area to explore the shift in people's opinions like tweets, social media posts, news headlines, etc.

### Time mode

In time mode, the user can move the image across a timeline to see how narratives changed over time.

### 9.3 Creating experience - Contextual camera.

The contextual camera gives the possibility to add a perspective shift at the point of capture. When you capture a picture, there are also other elements that define that moment - opinions and voices of the people, relevant events at that place, etc. The contextual camera captures these ambient elements and connects the photo to adjacent realities of the moment. It forces people to reflect on the intentions by giving a reality check on the wider context. It thus adds more relevance to a picture and enables users to stitch their visual stories to the context [ref. Appendix].

**Shift aims to reimagine the future for still imagery in an interrogative way. It is a universe next door in which images become a visual search bar to discover new realities. It is a world of connected photos that forms a montage of multiple perspectives. The Shift gives access to a deeper and more nuanced reality than what we perceive.**

### 9.4 Narrative.

I created a 3 min video to outline the concept and highlight the problem space.

Link: <https://vimeo.com/551231762>

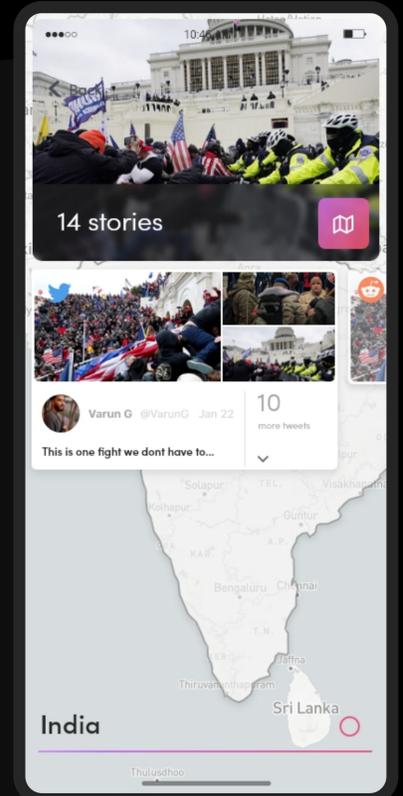
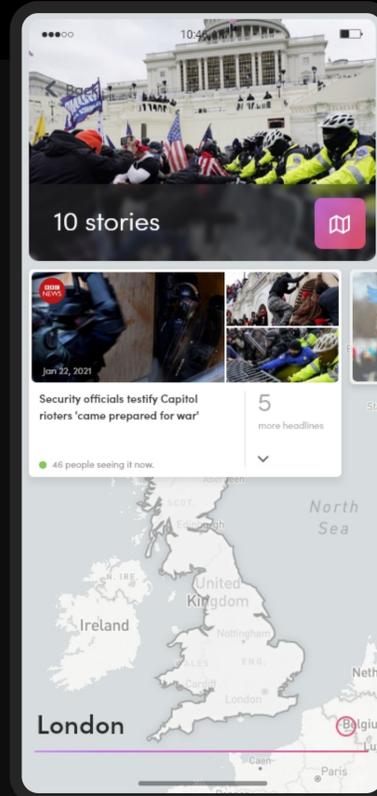
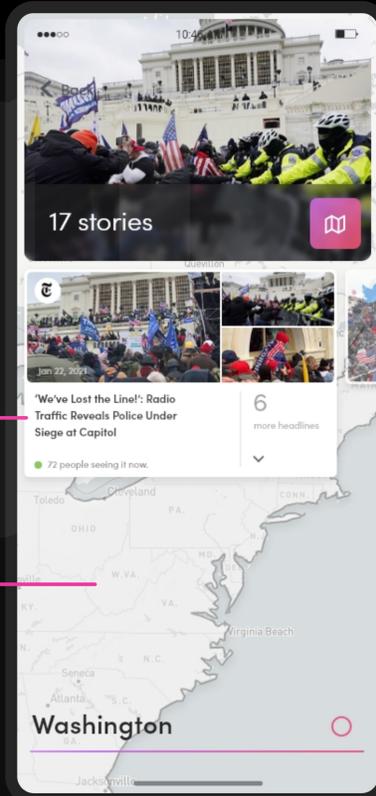
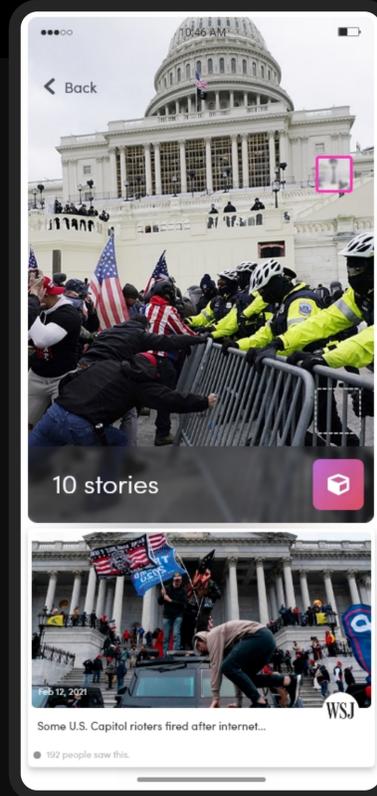
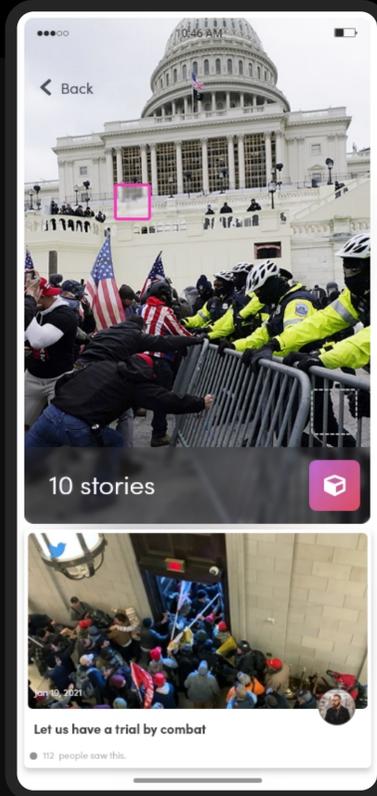
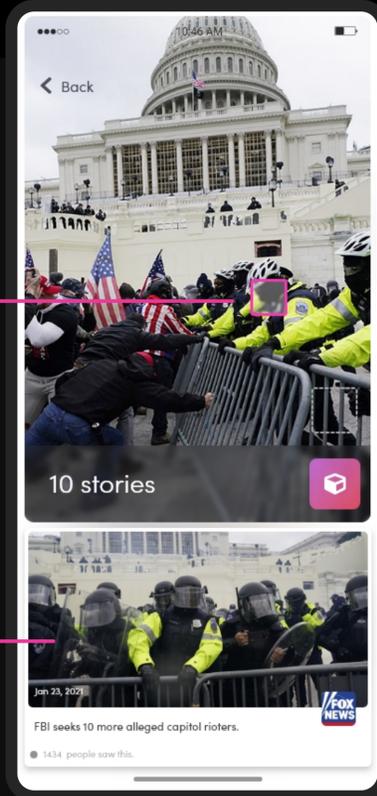
### 9.5 Exhibition.

At UID Design Talks 21, I presented my concept through a pitch video and an online exhibition space. During the event, I had the opportunity to get exciting feedback from UID alumni and people from the industry. The pitch video can be accessed in the UID project gallery.

Link: <http://www.uid.umu.se/en/uid21/project-gallery/ixd/manu-revi/>

Pointer

Image from that point in space.



New perspectives from that place

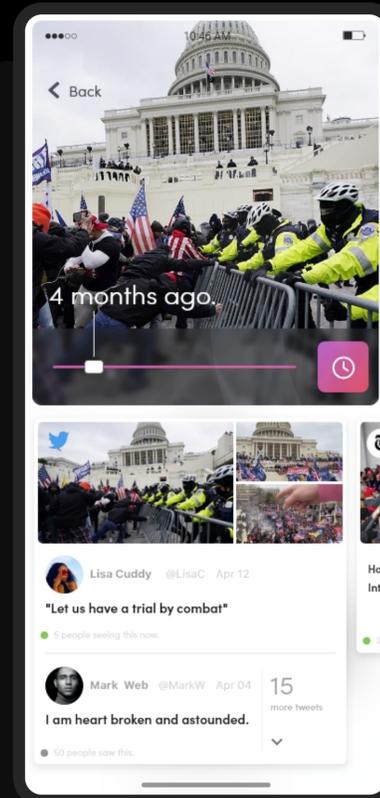
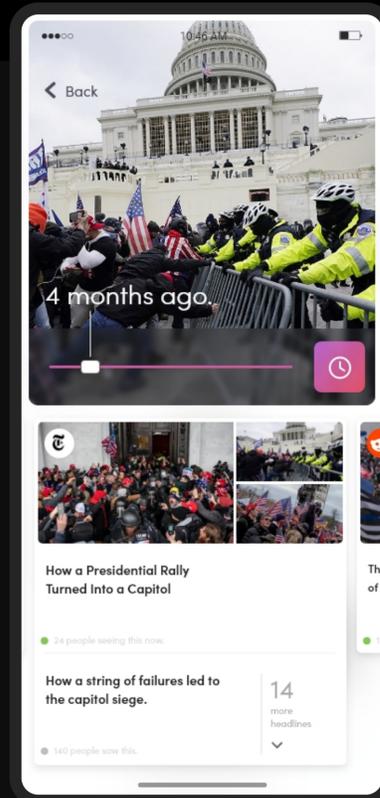
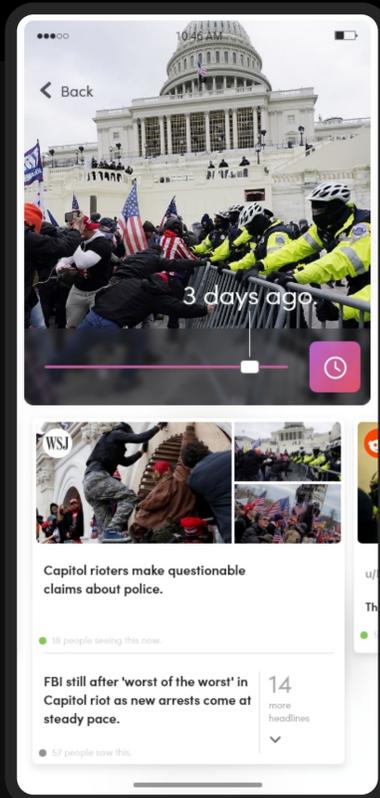
Map area to pan and discover

Location input

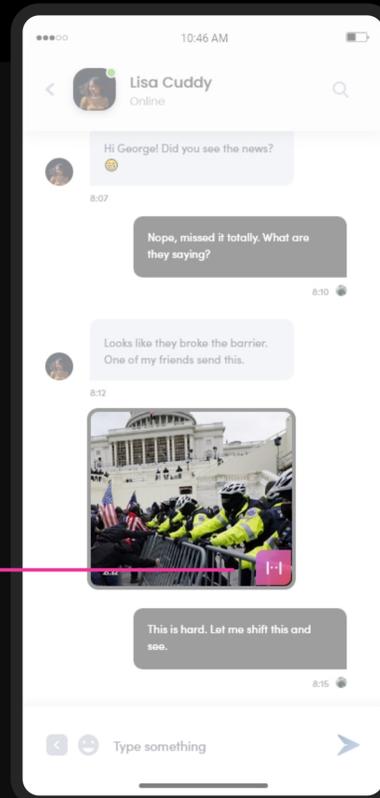
(TOP) POV mode. (BOTTOM) Location mode.

Time slider to look back in time.

Perspectives from that point in time.



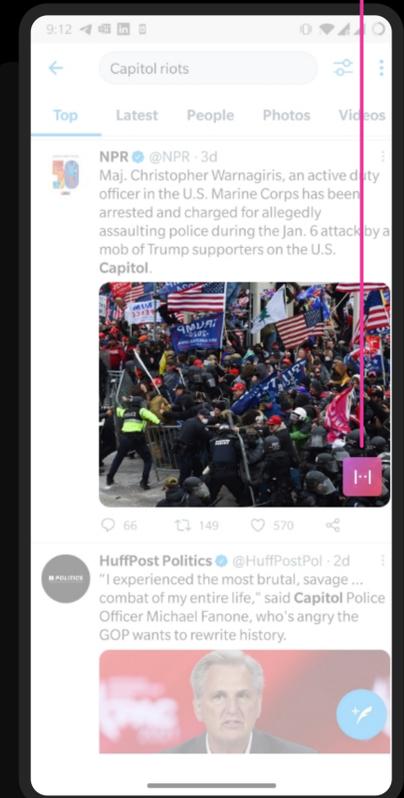
Shift in an image in Twitter.



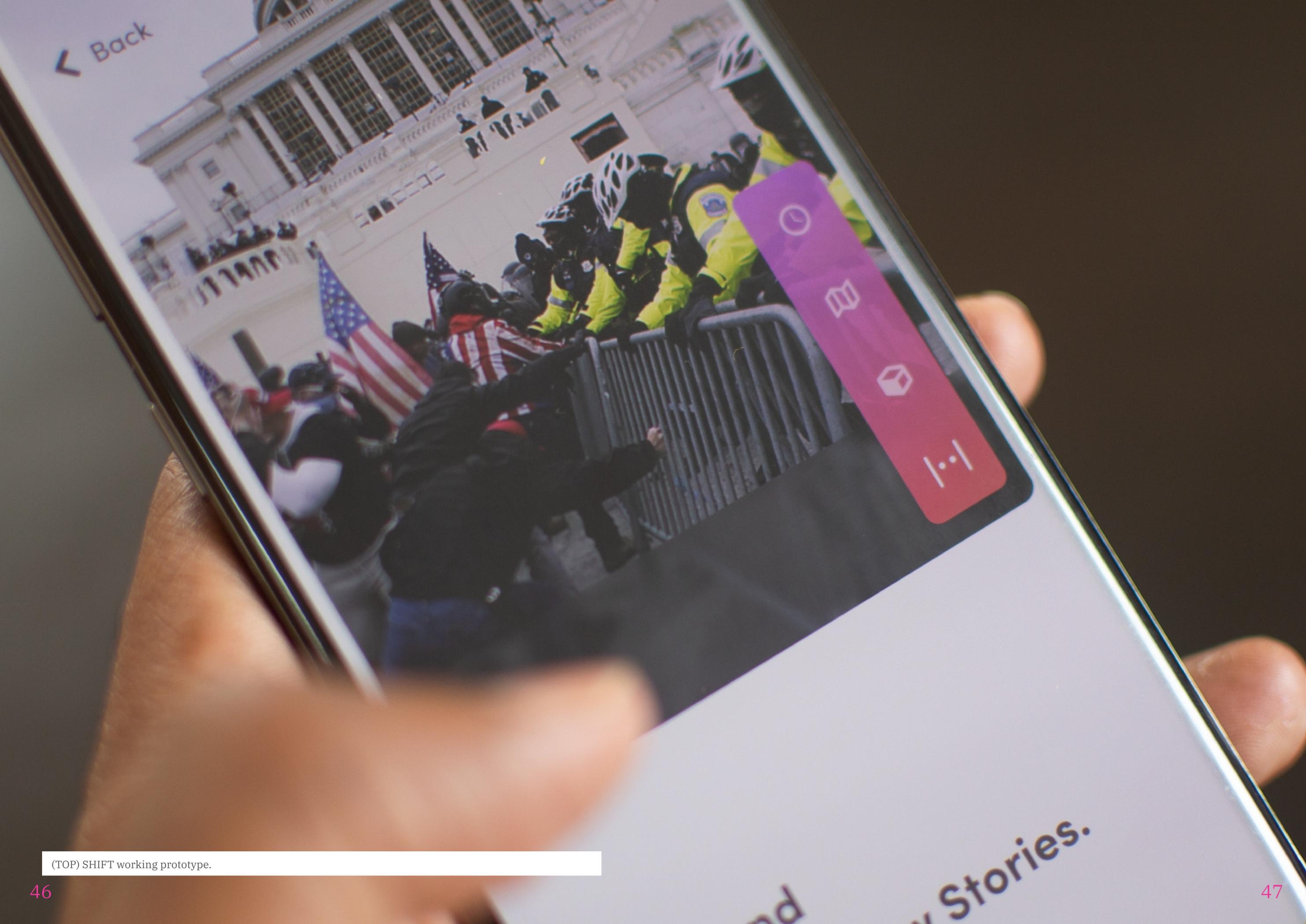
Shift in an image shared over chat.



Shift in an image in a news article.



(TOP) Time mode (BOTTOM) Presence of shift across platform.



(TOP) SHIFT working prototype.

# 10. Reflection.

This section talks about some of the personal growth and summarizes my learning during the degree project.

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"If I am in my comfort zone, it is just going to be another boring day at work." With this in my mind, I decided to explore a complex area of practice that I couldn't work on before during the MFA curriculum. But working with complexity doesn't mean it has to sound complicated or confusing. It could also be about rethinking an everyday experience. My goal, in the beginning, was to look at reality as a space to design with. And use images as a material to understand what it means to work with reality.

Little did I know that words you choose to explore will keep you on tenterhooks. Words like perception, trust, and reality kept coming back to bite me. Looking back, in the early days, this made me confused and fragmented. It pushed my limits and made me insecure about my ability as a designer. But, your limitations can sometimes be your blessings. Each time I was confronted, I allowed myself to take a break and decide where I wanted to go in my project. I sketched some ideas, scribbled some thoughts, and most importantly, talked to others, only to come back and look at those words with a fresh perspective. I am happy that these breaks helped me rethink the way we look at images in our everyday life.

Coming from an industrial design background and growing up loving physical things, I have always been driven to build experiences that had a tangible angle. But the proliferation of screens has resulted in many physical experiences becoming extinct or being replaced by its pixelated versions. When technology takes its digital form, it also allows reaching a wider audience and explore a subject of more profound impact. It thus strikes me that working with a digital medium

is equally important to my learnings as an interaction designer. Digital images were thus a conscious move to step into the two-dimensional world of screens.

I feel this degree project was a moment when, for first time, I was exposed to a truly open design space of my own. One thing that helped me ease it down was a well-strategized research phase. I was not focused on the research methods but instead on a strategy that will help me adapt to the people I talked to. This gave me peace of mind, and each interview became a learning point that I took forward to the next. But fuzzy moments can lurk at any corner, and for me, synthesizing the user insights was one of those. I failed multiple times to figure out a proper method to follow and articulate a clear direction. And it took me some time to realize that I had to set apart time to figure out where I want my project to lead to. Looking back, I wish I had done more of this. But by learning to embrace the ambiguity, I could traverse paths that I could never have imagined before and find new interests that I will take forward in my design journey.

Then, the project also gave me an opportunity to work on a topic of relevance. I am happy to say that the problem scope also connects well with my identity as a designer who wants to build experiences that makes the mundane meaningful. This meant how I had to rethink still imagery and design for a behavioral change towards our image viewing habits. Of course, there are larger questions at play as well. When will this happen in the life of a user? What motivates people to look into diverse perspectives of an image? Who moderates these perspectives? And what is the role of other narratives when images give access to multiple stories?

Given the massive scope of the project, there are, of course, many facets I need to probe further. I also noticed that the testing I did earlier (*ref 7.5 Reacting to sketches*) was more

for gathering responses to features. But, when SHIFT proposes an introduction of a new behavior, it needs more user insights. That being said, the product has to be tested in real life to find answers to questions all the above questions. I wish I could have got more people on board to evaluate SHIFT. At the same time, it is also a moment for me to step back and appreciate the amount of work needed to develop a concept that touches a relevant context. Nevertheless, for me creating the concept and getting people to see this is only the starting. I wish to keep the conversation going and develop SHIFT further by taking it to more people in the upcoming weeks.

Generally speaking, I am delighted with the breadth of methods and skills I have developed during my thesis. I am also satisfied with the design outcomes. I feel I have adequately demonstrated my ability to work as a professional designer.

*Manu Revi*  
*June 6, 2021.*

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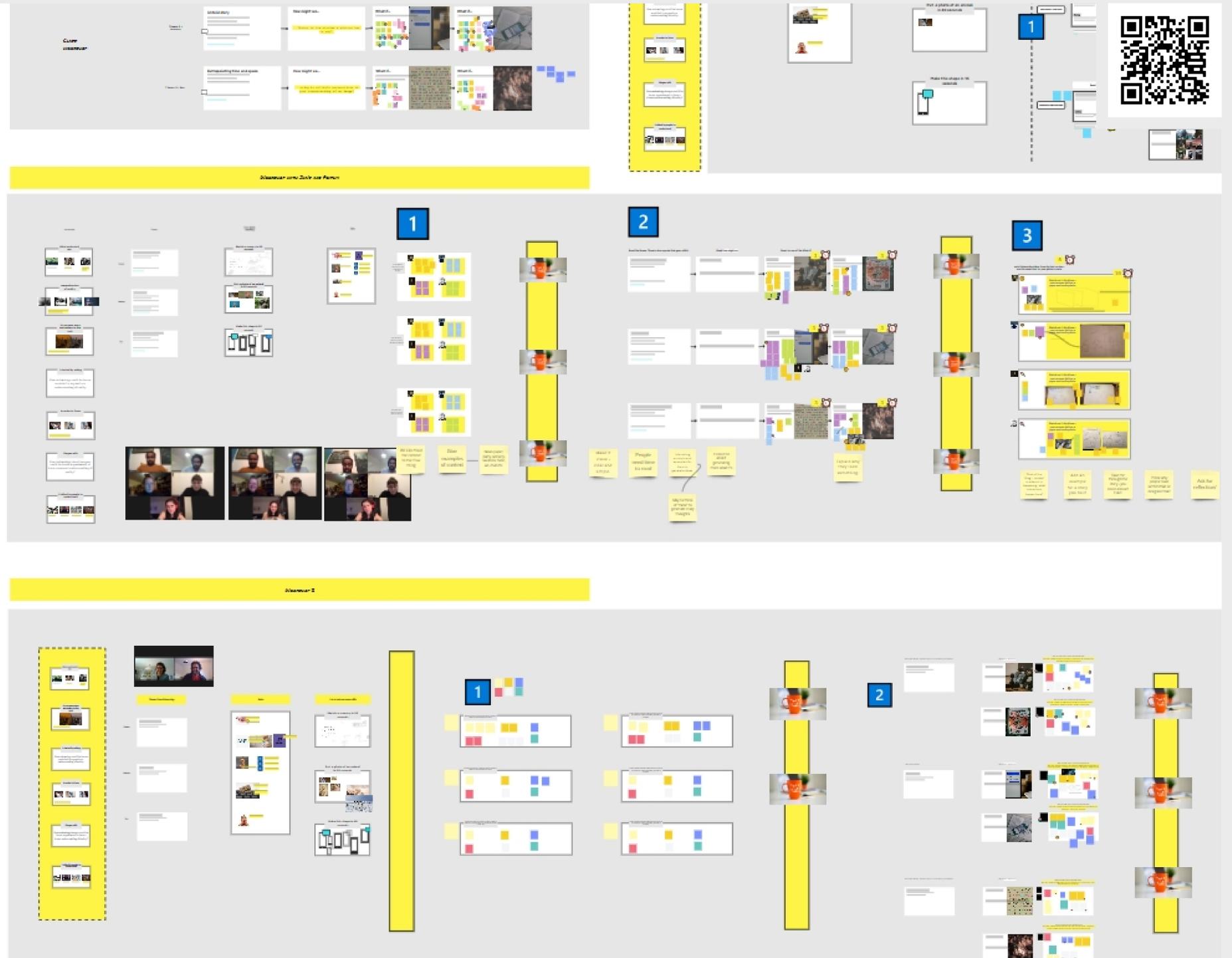
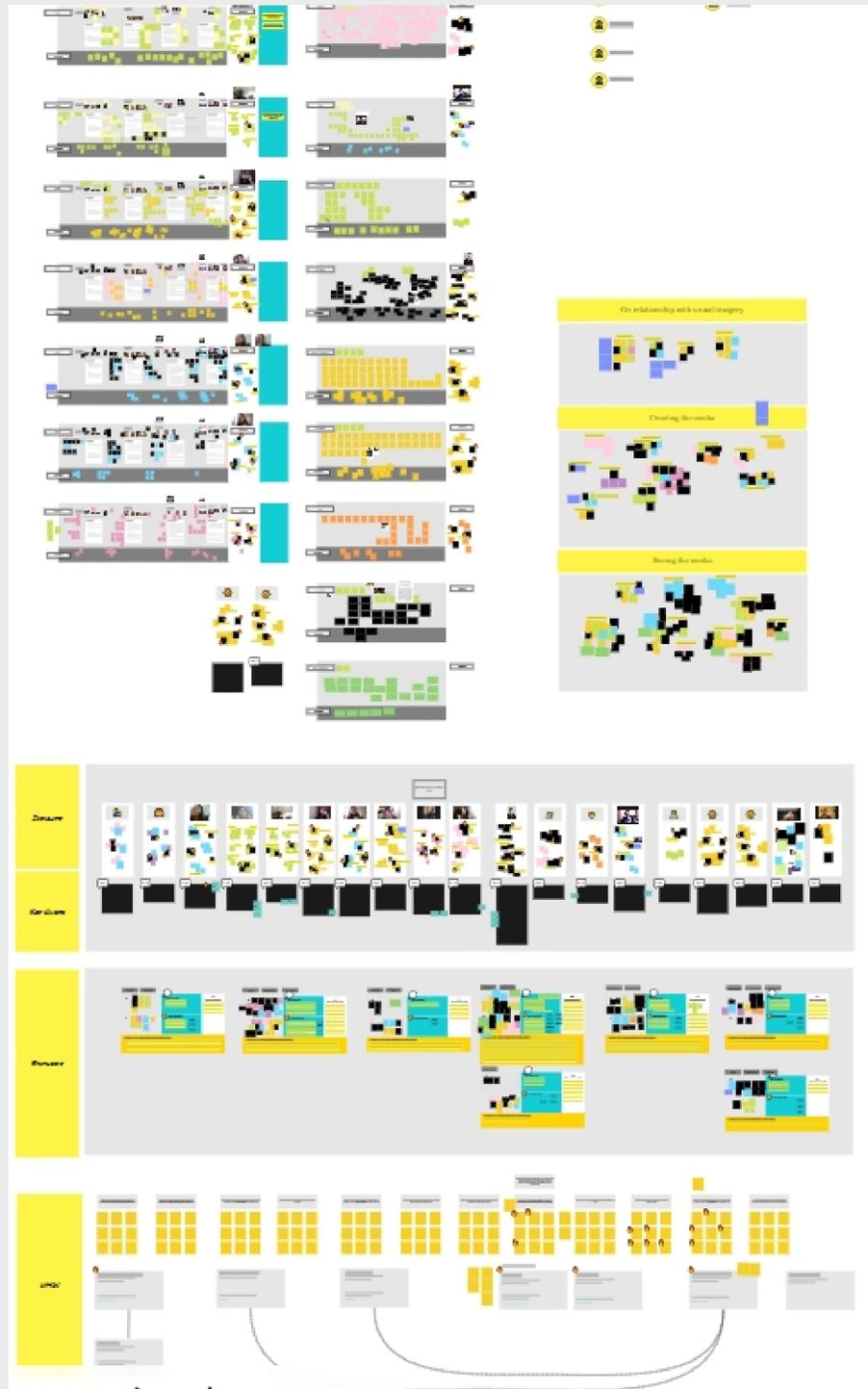
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# 12. Appendix.

I used Miro as my workbench throughout the thesis. All the information gathered and the process followed is carefully put together for any further reference. Please use the following link or scan the QR code to access the board.

[https://miro.com/app/board/o9J\\_lFwZH4g/](https://miro.com/app/board/o9J_lFwZH4g/)



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