

The Mind's Eye

by
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Undergraduate Degree in Architecture

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THE MIND'S EYE

by
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Abstract

In light of the invasion of technology on our day-to-day routine due to the COVID-19 pandemic, this project is a year-long thesis research and design investigation concentrated on the interface between the physical and the virtual realms and the space of manifestation of such an interface.

Note for the readers and viewers:

The thought process bears no technical limitations because I - the curator of my own syllabus - allowed myself to trust the process, go with the flow and experiment creatively.

Thesis Structure

/The first chapter encompasses the research investigation.

It touches upon the modern structure of social life in the city, metropolitan life, and the intersection between the physical and the virtual realms to generate a mode of virtual reality i.e. **virtuality**.

/The second chapter encompasses the design framework.

It touches upon the culmination of an architectural outcome in light of the conducted research. It converges the research into a spatial manifestation.

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THESIS BOOK

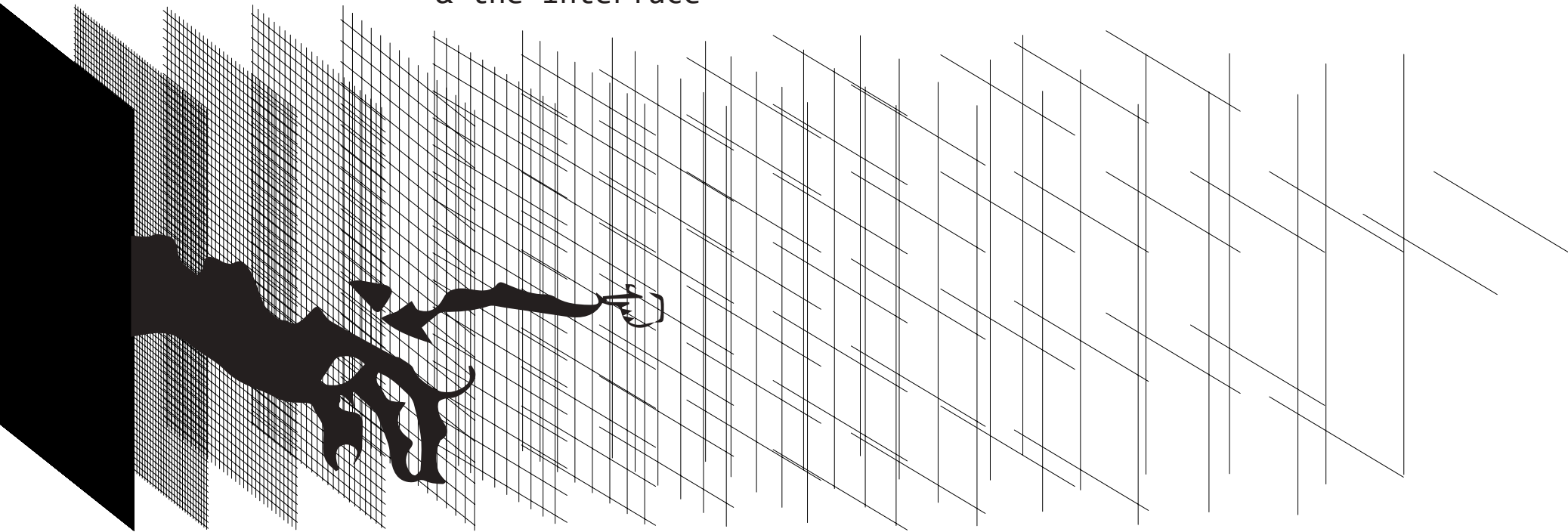
An exploration of

: realities

&

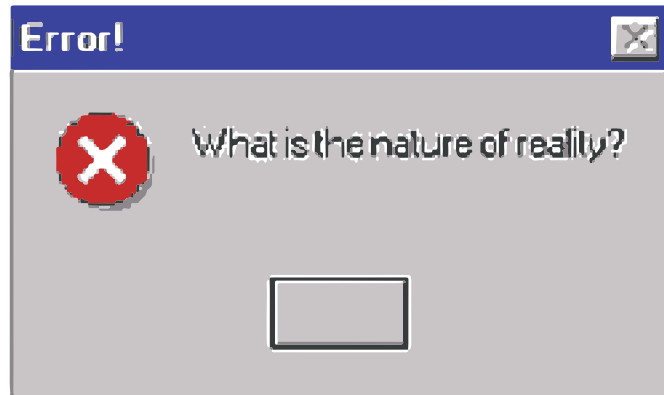
: virtualities

& the interface



THE MIND'S EYE

_Mira EL Haj|201701910|
2020 - 2021



What is the nature of reality whe *the physical* and *the virtual* collide, and what is the space of manifestation of the outcome?

Preface 1.0 /'prɛfəs/

My thought process started with a simple reflection on the first online Thesis I meeting. I was at the gym at 11:30 a.m. I had finished my workout, took a seat in the noisy cafeteria, plugged in my laptop, logged into Zoom, MUTED & INVISIBLE, and waited for the meeting to start. I was not so enthusiastic to be facing the screen for yet another semester. I asked myself:

When has this become normal?

Thought Process

I decided to take my reflection further. What is the new normal? What are the factors that condition it? I started - subconsciously - thinking about *COVID-19* and its subsequent safety measures - *Social distancing* and the *digitalization of communication*.

From an investigative point of view, I started questioning the nature of the distancing and the validity of its titlement as "*social*". Is it really social distancing? Taking a closer look at the so cial scene, digitalization has been a weighing factor on the way people connect and communicate, since the end of the 20th century.

Taking a New-York subway scene in rush hour as an example of many, commuters are often immersed in their phones, giving little attention to their surrounding. This can be described as a detachment from the **physical**, and an immersion in the **virtual**. This is an example of **social distancing** i.e. the lack of social conciousness. What the pandemic has introduced into the social scene is, in fact, **physical distancing** i.e. limitations on physical spatial occupation and physical proximity. This process lead me to identifying this timeline:

Physical reality + Virtual reality > Social Distancing > COVID-19 > Physical Distancing

My investigation is established on the relationship between these factors that shape the social scene.

The Matrix

Building on the extracted timeline:

Physical Reality + Virtual Reality > Social Distancing > COVID-19 > Physical Distancing

I generated a Matrix based on 6 factors; pairs of opposing connotations:

Physical Reality / Virtual Reality

Social Distancing / Social Proximity

Physical Distancing / Physical Proximity

The Matrix generates relationships between these factors, but what are these relationships? Each intersection point merges two factors into one reality. That being said, the intersection points are manifestations of different realities in the social scene.

Understanding the Outcomes

The Matrix generates an important factor: **Border Imposition/Deletion**
Case #1

The intersection of *Physical Distancing* and the *Virtual* generates the following scene: A virtually intimate relationship. The lovers are spatially distant, however the introduction of the virtual - a computer screen - generates virtual intimacy. The chosen illustration is that of a hologram being manifested into the space, a creation of the man's imagination, aided by the laptop scene.

What did the Virtual achieve in the scenario? Deleting Physical Borders.

Case #2

The intersection of *Physical Proximity* and the *Virtual* generates the following scene: A digitally dominated social setting. The chosen illustration demonstrates a collective indulgence in digitalization - Smartphones, tablets, etc...

What did the Virtual achieve in this scenario? Imposing Social Borders.

My point of interest is the effect of the Virtual on the Physical.

	PHYSICAL REALITY	VIRTUAL REALITY	PHYSICAL DISTANCING	PHYSICAL PROXIMITY	SOCIAL DISTANCING	SOCIAL PROXIMITY
PHYSICAL REALITY						
VIRTUAL REALITY						
PHYSICAL DISTANCING						
PHYSICAL PROXIMITY						
SOCIAL DISTANCING						
SOCIAL PROXIMITY						

The Spatial Implications of the Matrix

My first experiment with the Matrix was to apply it on multiple spatial realities. I took myself as a user, identified 3 user experiences - a resident in my family apartment, a visitor in my friend's apartment, and a tourist in a hotel room. I manifested the realities from the matrix into the different spaces I occupy within each setting. This exploration highlights the borders that guide my realities within spaces.

The Matrix is Played Out as a Function of Space of Manifestation

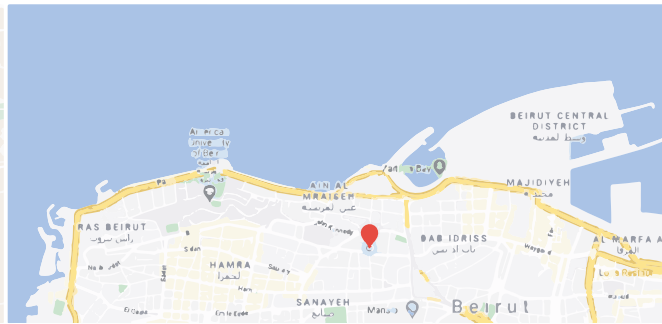
User Experience #1: A Resident

📍 Tyre - Apartement Building
33° 14'40.1"N 35° 14'14.9"E



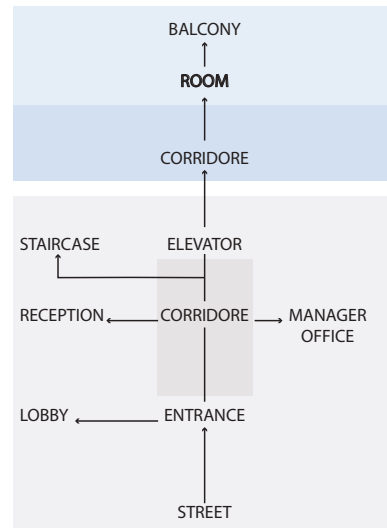
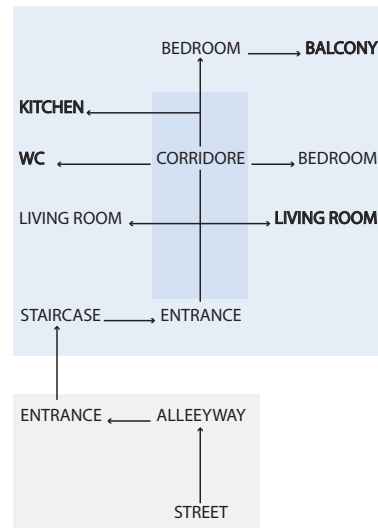
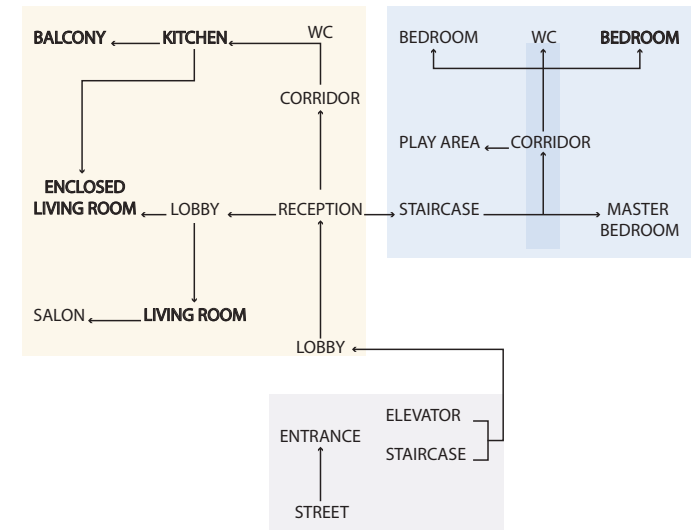
User Experience #2: A Visitor

📍 Ain Mreisse - Apartement Building
33° 53'52.6"N 35° 29'33.8"E



User Experience #3: A Tourist

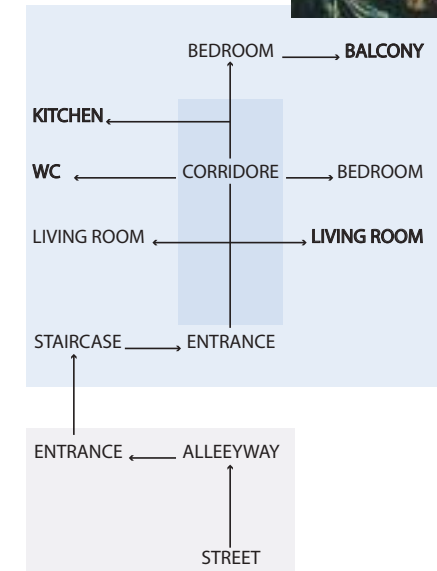
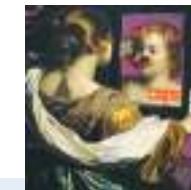
📍 Hamra - Hotel
33° 53'49.92"N 35° 29'00.43"E



Matrix Spatial Implications

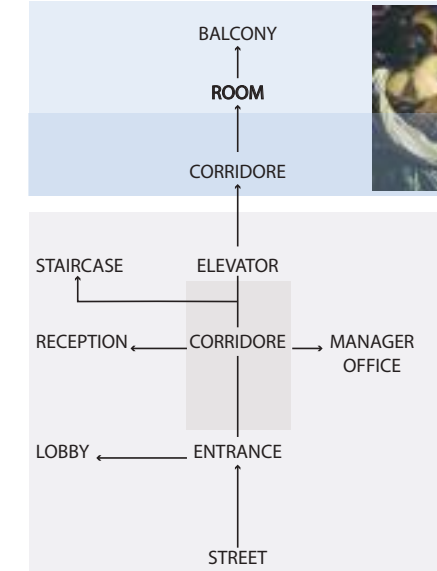
User Experience #2: A Visitor

📍 Ain Mreisse - Apartement Building
33° 53'52.6"N 35° 29'33.8"E



User Experience #3: A Tourist

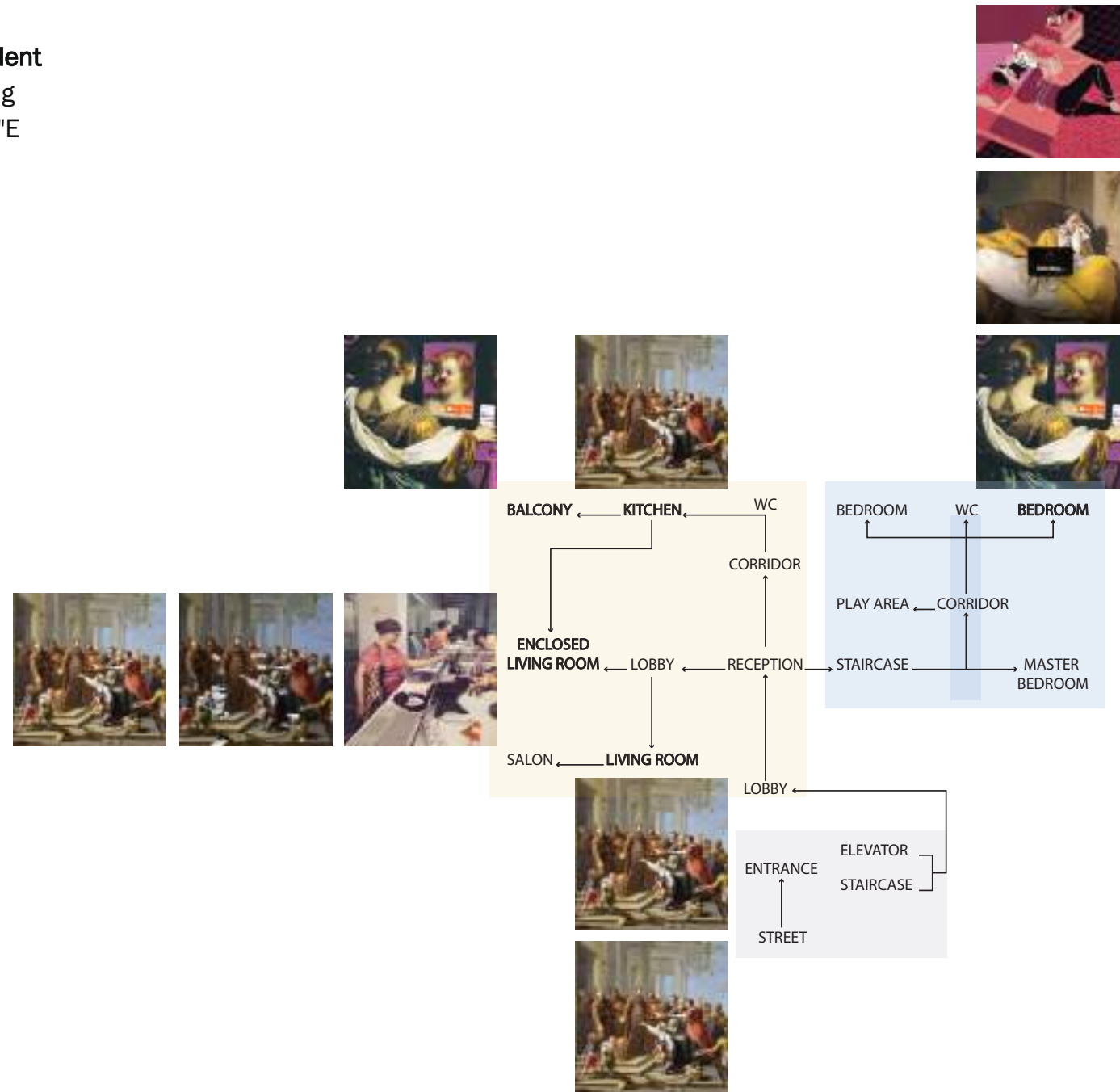
📍 Hamra - Hotel
33° 53'49.92"N 35° 29'00.43"E



Matrix Spatial Implications

User Experience #1: A Resident

📍 Tyre - Apartement Building
33° 14'40.1"N 35° 14'14.9"E



The Matrix - Further Observations

Reflecting on the structural layout of the Matrix, what is directly observed is the intersections of the grid, each a representation of a conditioned reality. The question that raises itself is: What about the white spaces outlining these realities?

Inhabiting the White Spaces

I place myself within the white spaces of the Matrix, with the intention of maneuvering in between the identified realities. I treat myself as a polarizing element, transforming the white space and the realities it outlines.

Iteration #1

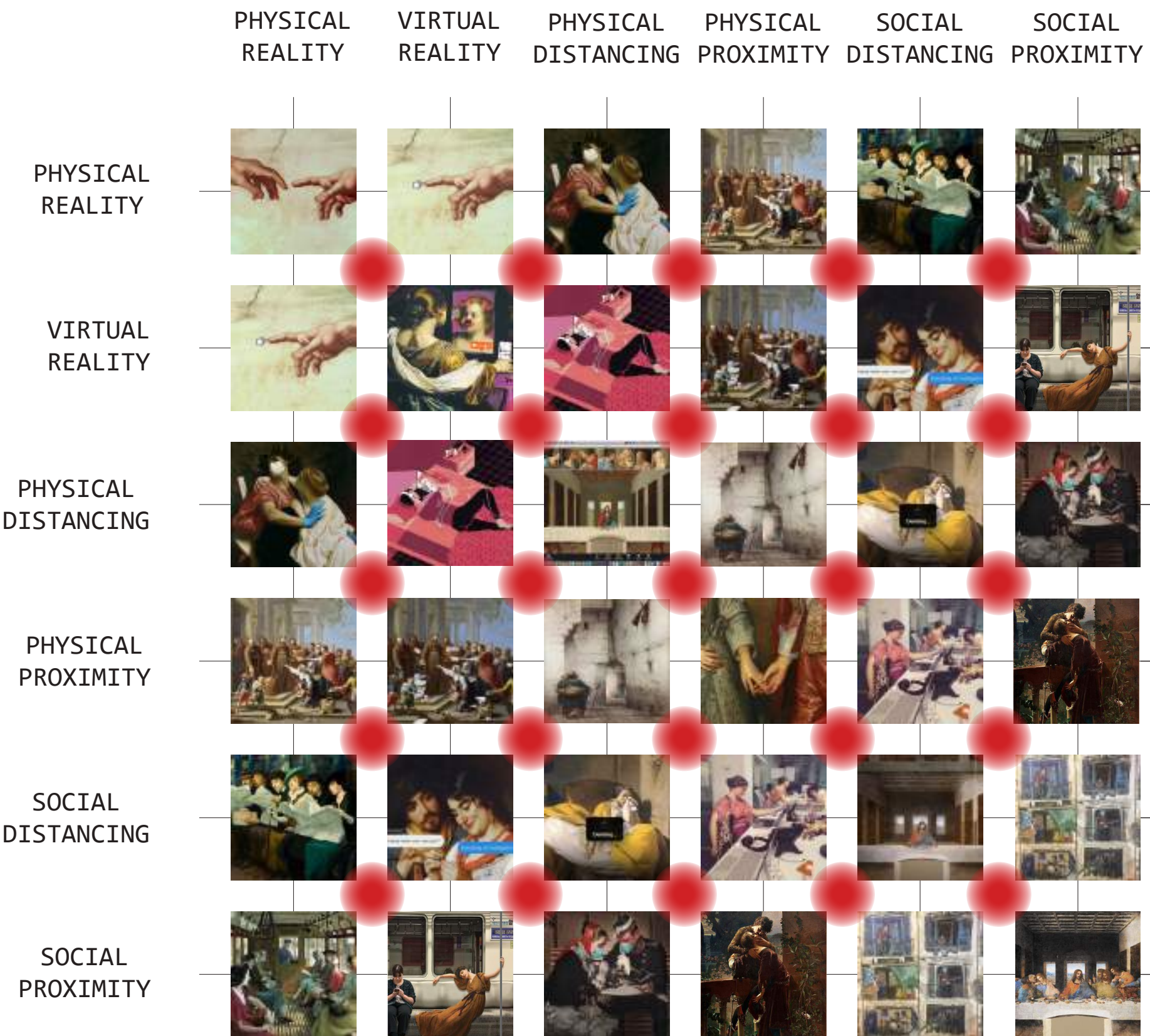
The polarizing points fall at the intersection points of the white lines. This triggers the metamorphosis of the four realities in proximity with each polarizing point. The realities dissolve and merge towards the point, engulfing it in a new hybrid reality.

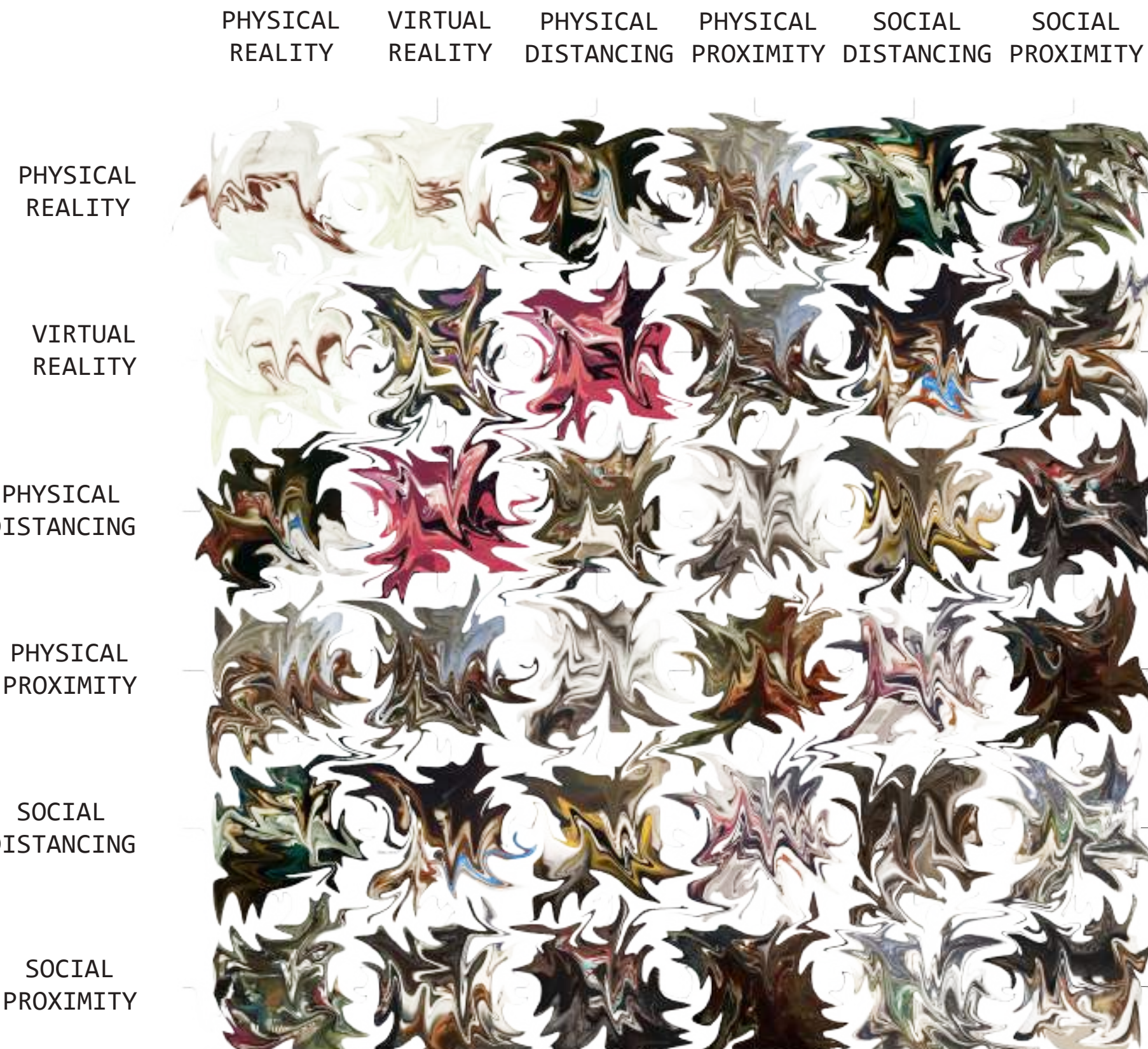
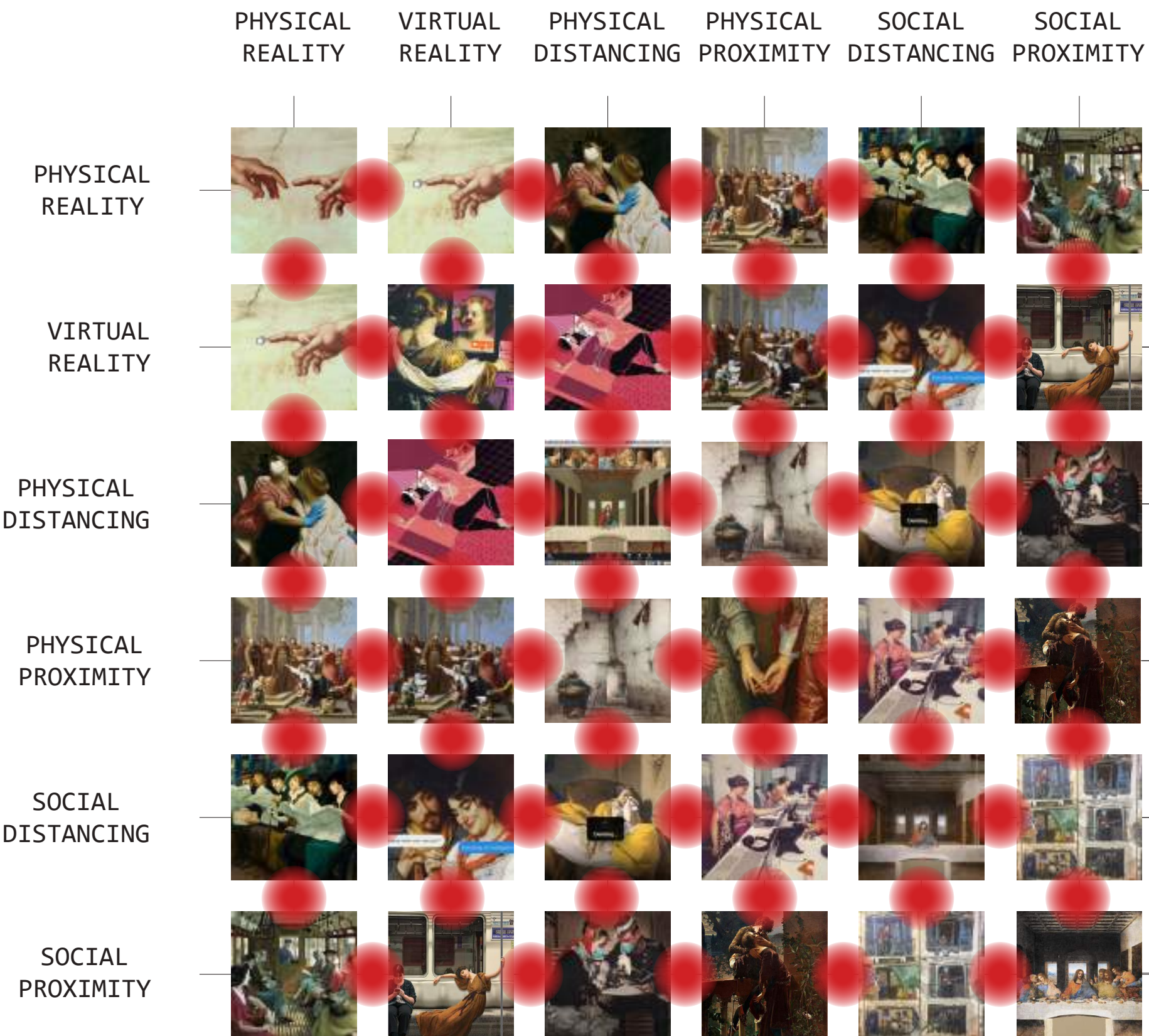
Iteration #2

The polarizing points fall at the parallel in-between white lines separating each two realities. This triggers the metamorphosis of the two realities in proximity with each polarizing point. The realities dissolve and merge towards the point, engulfing it in a new hybrid - however less complex - reality.

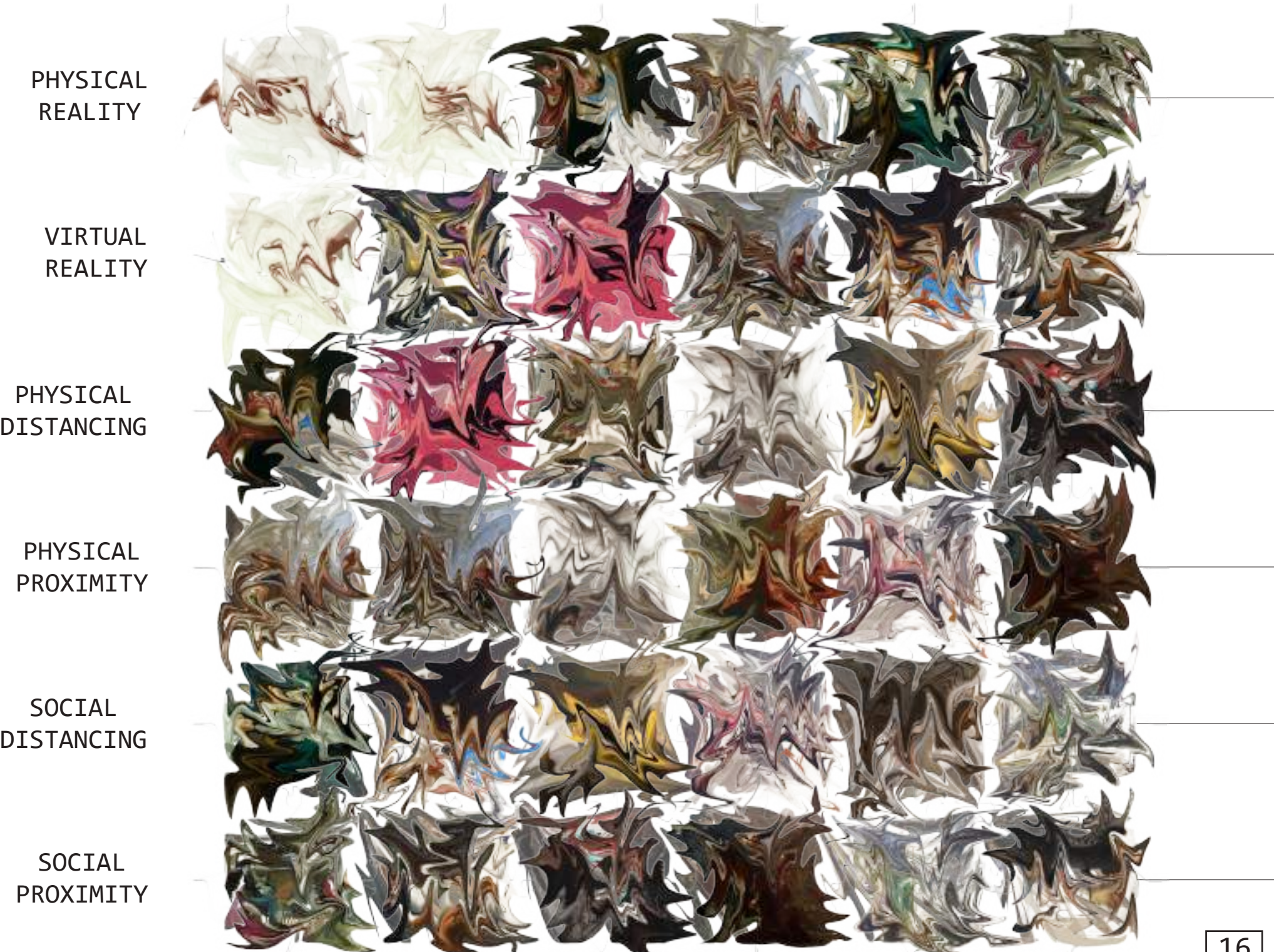
Understanding the Outcomes

The Matrix ceases to demonstrate conditioned realities, but offers a new reading where new realities emerge as the function of the user inhabiting the white spaces within the realities.





PHYSICAL REALITY VIRTUAL REALITY PHYSICAL DISTANCING PHYSICAL PROXIMITY SOCIAL DISTANCING SOCIAL PROXIMITY



A Virtual Landscape

Expanding on my conceptual framework, I took excerpts from *Supersurface - An alternative model for life on the Earth* - minute 5:00 > minute 5:30, during which a landscape is portrayed with a cartesian grid governing it. The grid imposes a *checkered* spatial occupation of the landscape. The grid then starts to disintegrate gradually, demonstrating a gradual dissolving of the borders which allows the spaces to open up, merge and intersect. The grid undergoes further deterioration to the extent where it ceases to exist as lines, but as crossings, reaching the final stage of its metamorphosis into points.

The Correlation

This transformation is a demonstration of border deletion within a space. I connect it to my exploration of the way borders impose themselves on spaces, experiences, realities and how they -contrastingly- are deleted.

The Virtual Landscape x The Matrix

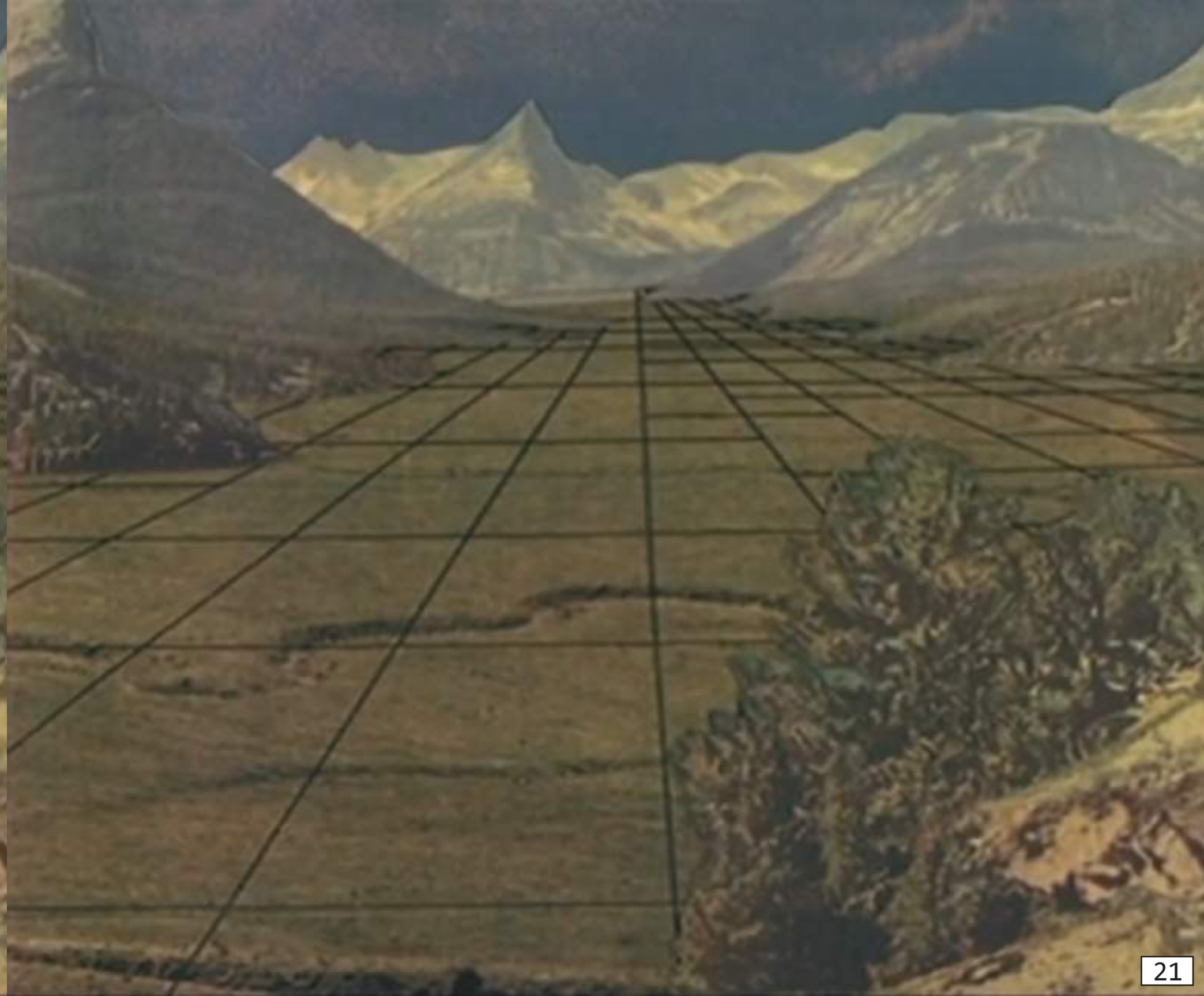
The Matrix -in its three explored states- demonstrates the concept of realities. The Virtual landscape -throughout its transformation from a cartesian grid to points- demonstrates a transformative reality. That being said, I adapt the excerpted virtual landscape as an alternative representation of the Matrix. In that case, each point on the landscape is a reality within the Matrix grid. Taking this duality a step further, I superimpose each Matrix on the Virtual landscape. The obtained outcome is a manifestation of my conceptual framework on a spatial scene.



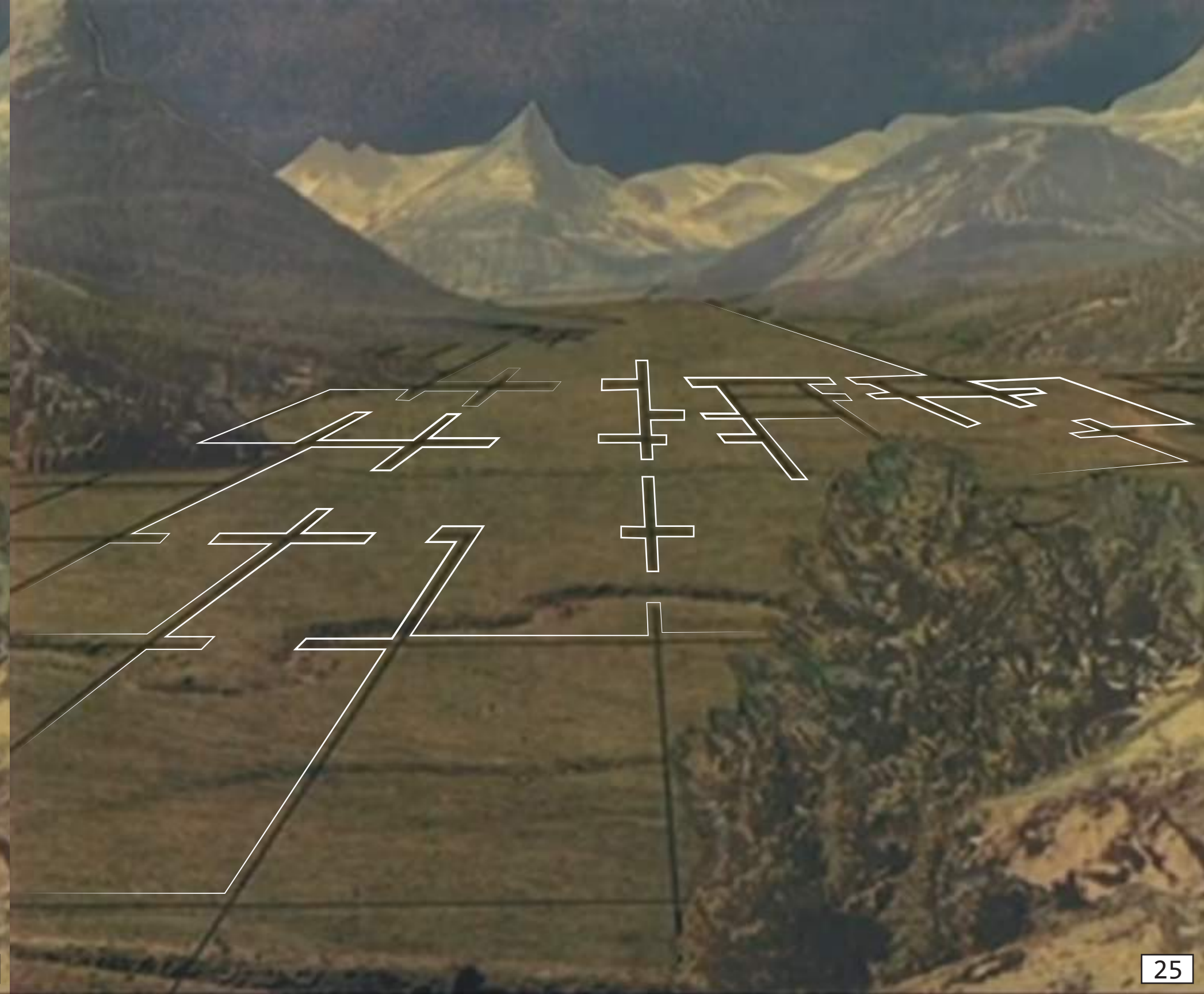
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19















The Social Landscape

The first chapter of my exploration covers the *Grid of Realities*.

In the second -upcoming- chapter, I explore the *Grid of People* within the *Socio-Urban Scene*.

My conceptual framework is juxtaposed with Georg Simmel's literary theoretical framework: *The Metropolis and Mental Life*. I adapt the concepts he argues to the 21st century scene.

The cartesian grid becomes a representation of the social scene, and the points of intersection are representations of people in proximity.

Taking a **single point** on the grid -a single person- and applying to it the external and internal stimuli /both real & virtual/ acting upon it (relating to Simmel's argument), the resultant is a representation of the metaphysical state of the person within his/her heightened surrounding.

Taking an **entity** on the grid -a group of people in proximity- and applying to it the external and internal stimuli /both real & virtual/ acting upon each point within this entity, the result is a chaotic clash of stimuli. Amidst the chaos, individuals cease to be able to maintain their sense of individuality. In other words, the stimuli breach the protective shell, causing identities to disintegrate. The disintegrated identities cease to maintain compactness, leading to dispersion. Individualism turns into dispersed fragments of identities dissolving into a chaotic scene of disintegrated identities.

The Mode of Connection

The obtained chaos is a representation of the complexity that governs the modes of connection and communication between people. From that, I draw out a communication scheme governed by the chaotic dispersion.

The psychological foundation upon which the
 metropolitan individuality

(is erected) is the intensification of emotional
life due to the continuous shift in

: **external**

&

: **internal**

stimuli

Georg Simmel

This is because the

 bodily proximity

&

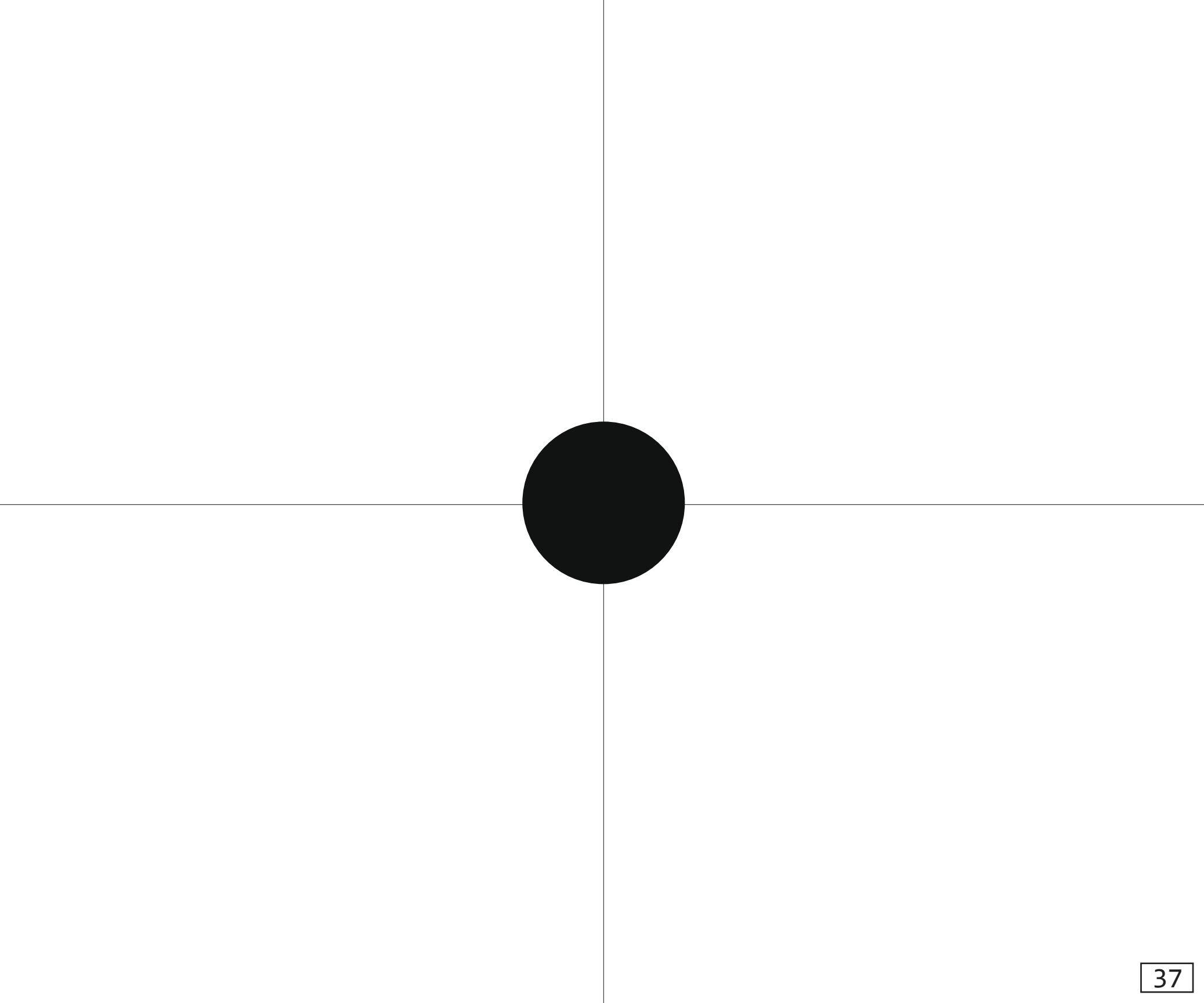
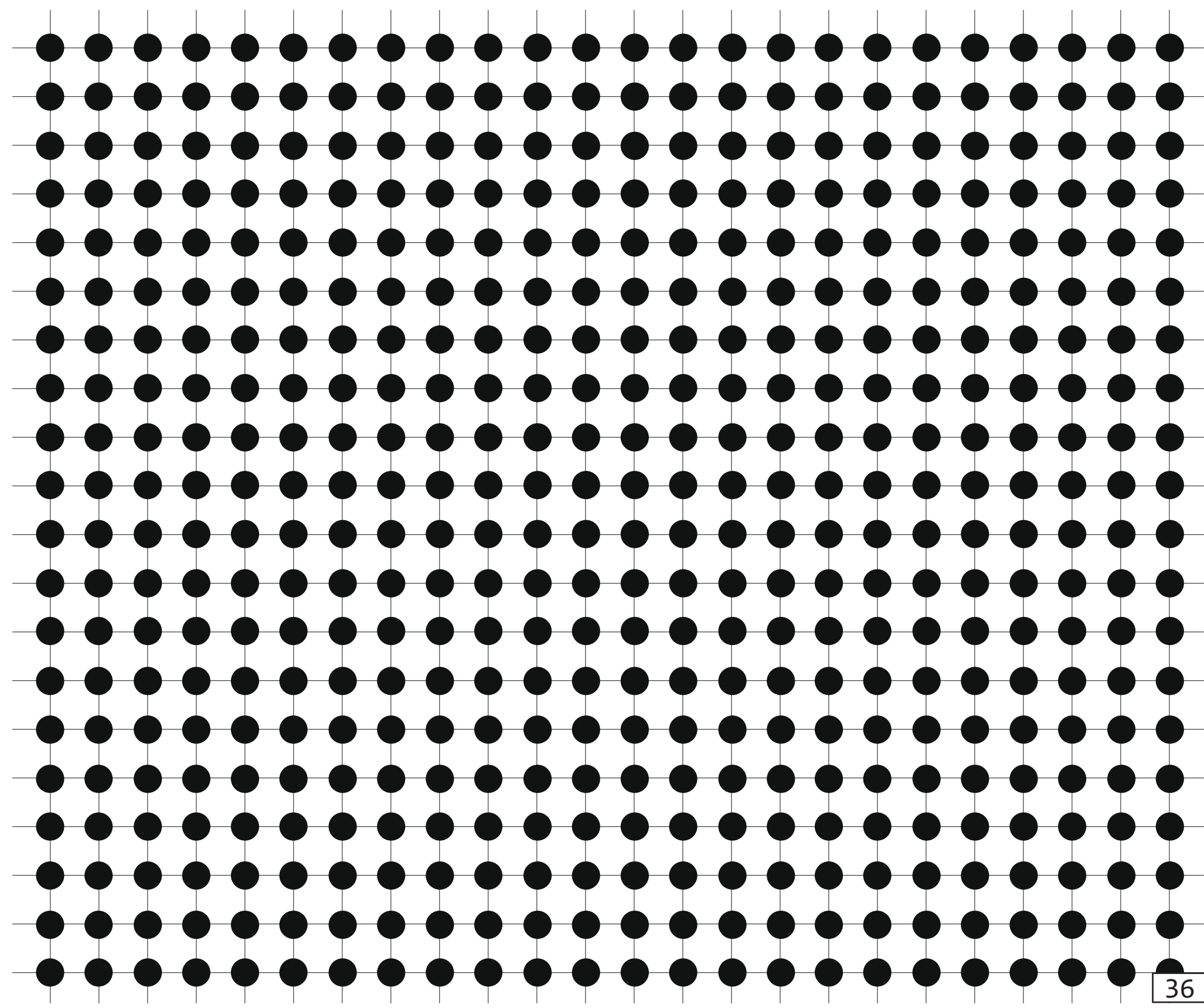
 narrowness of space

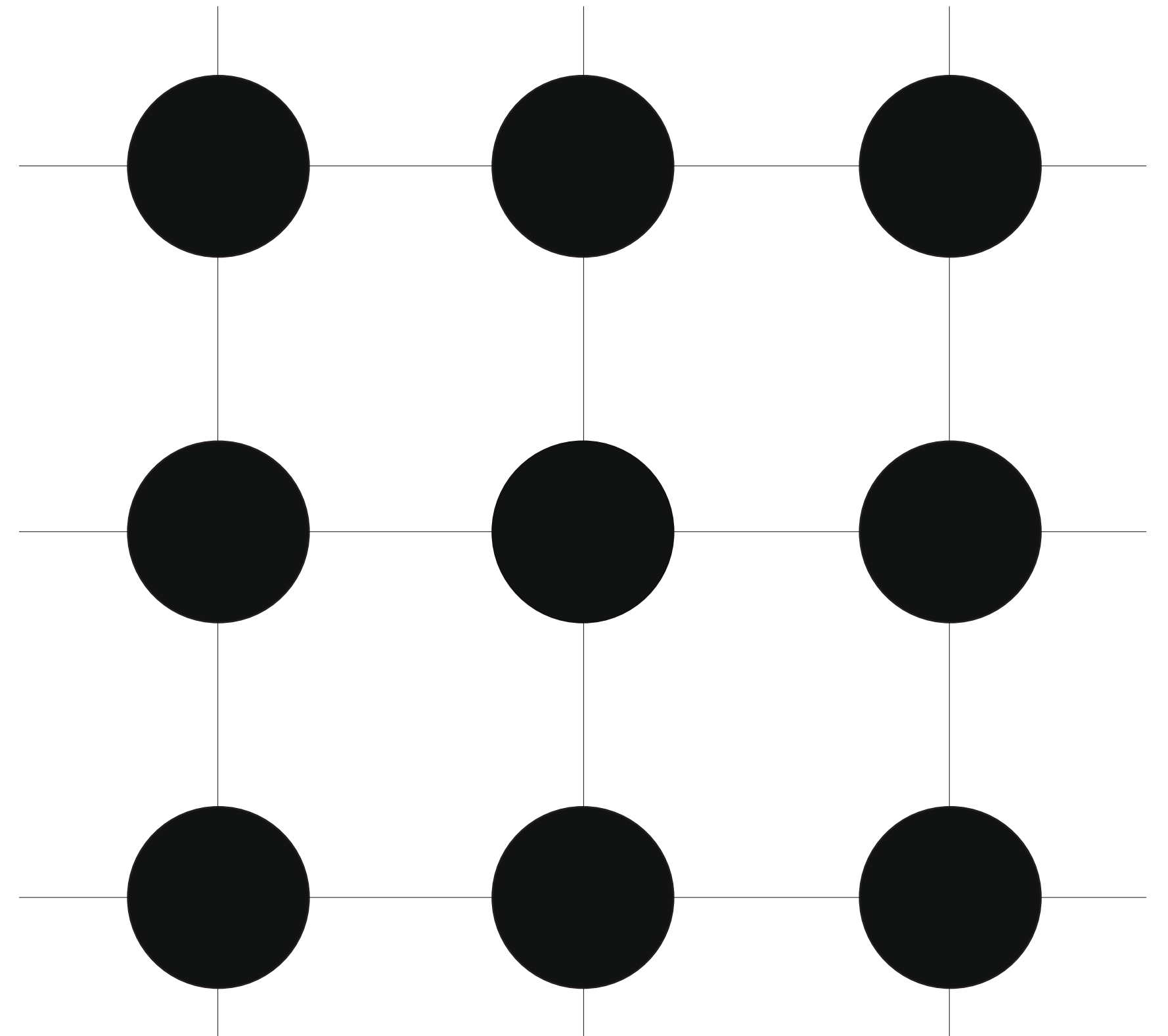
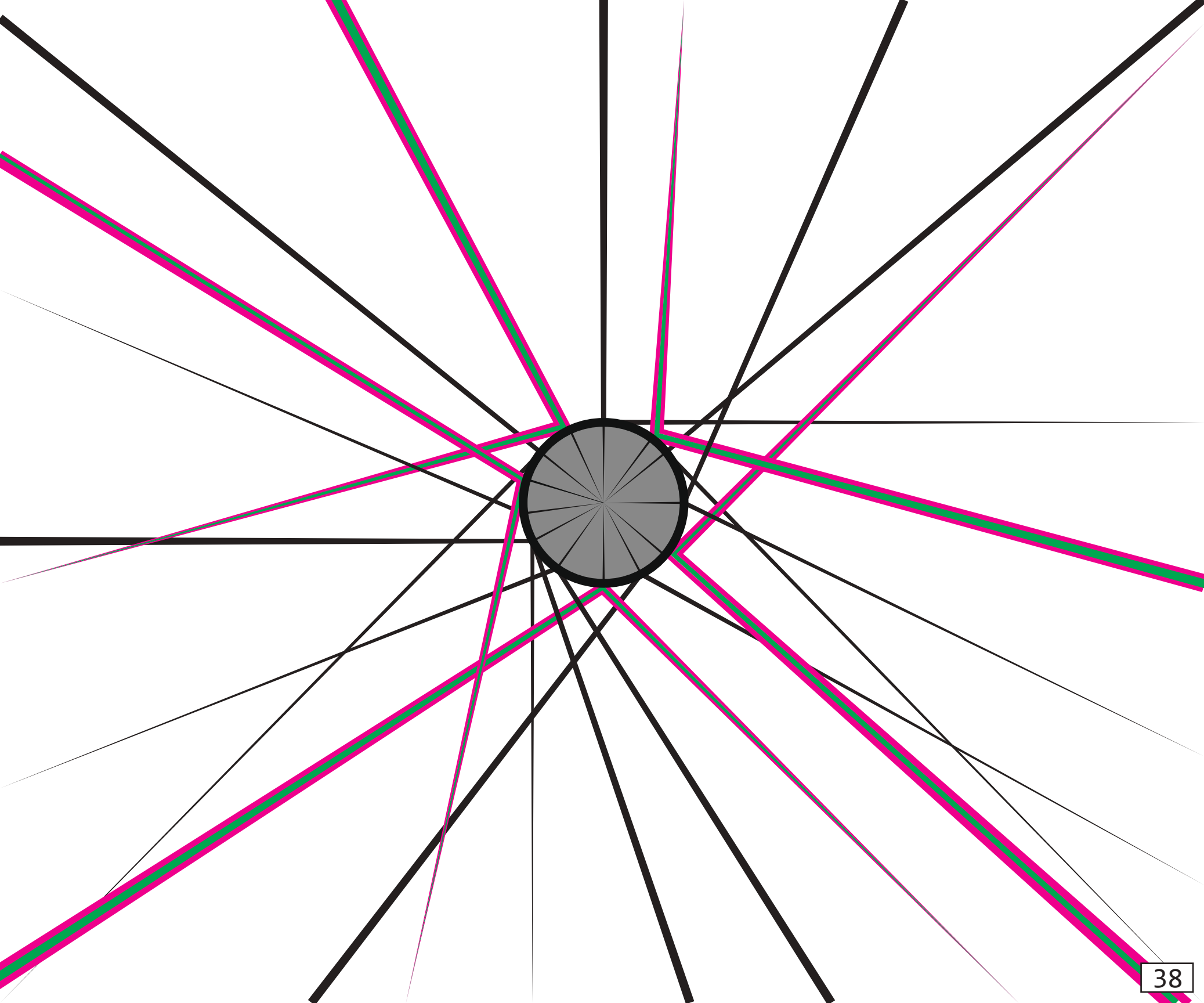
makes the

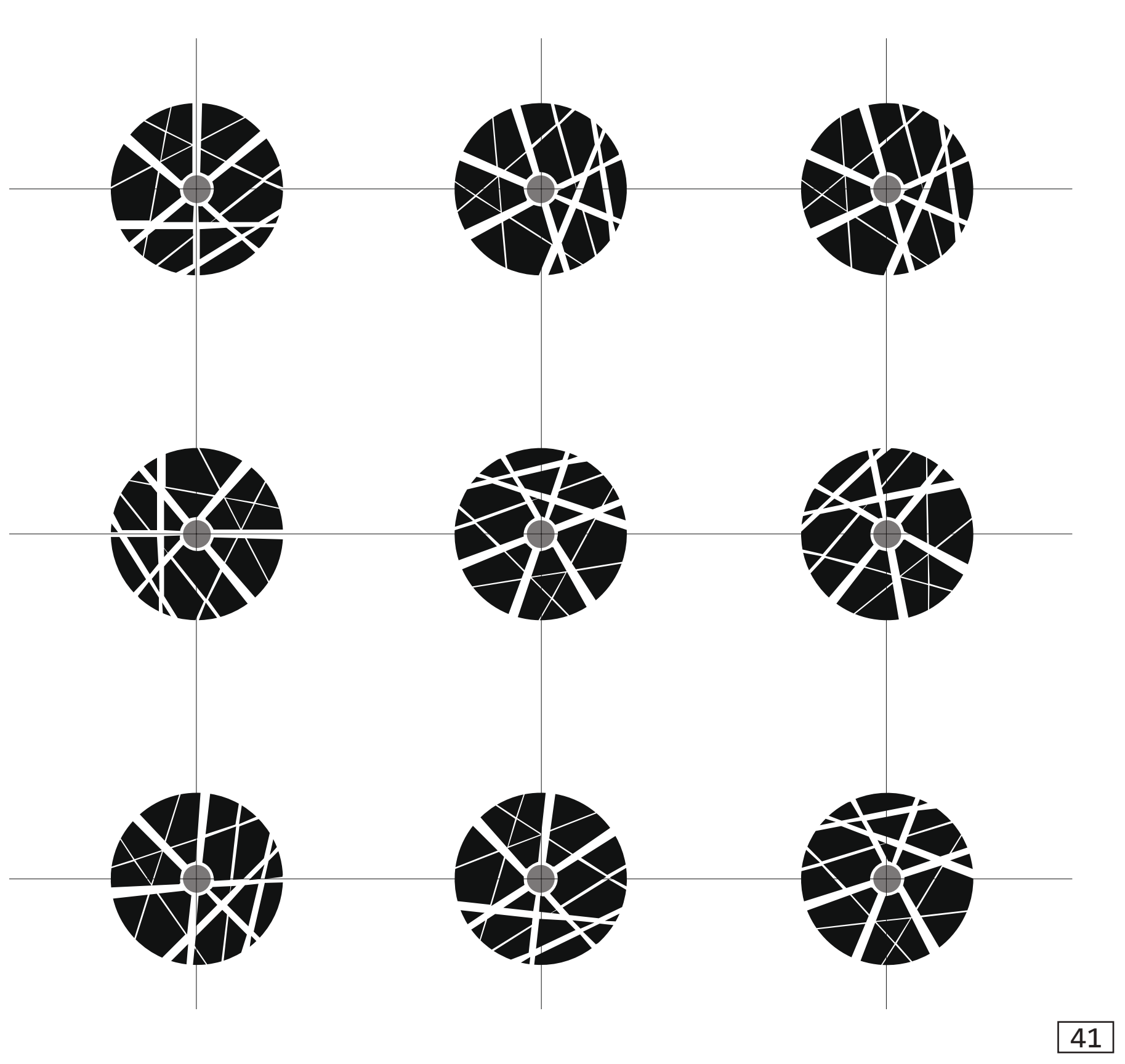
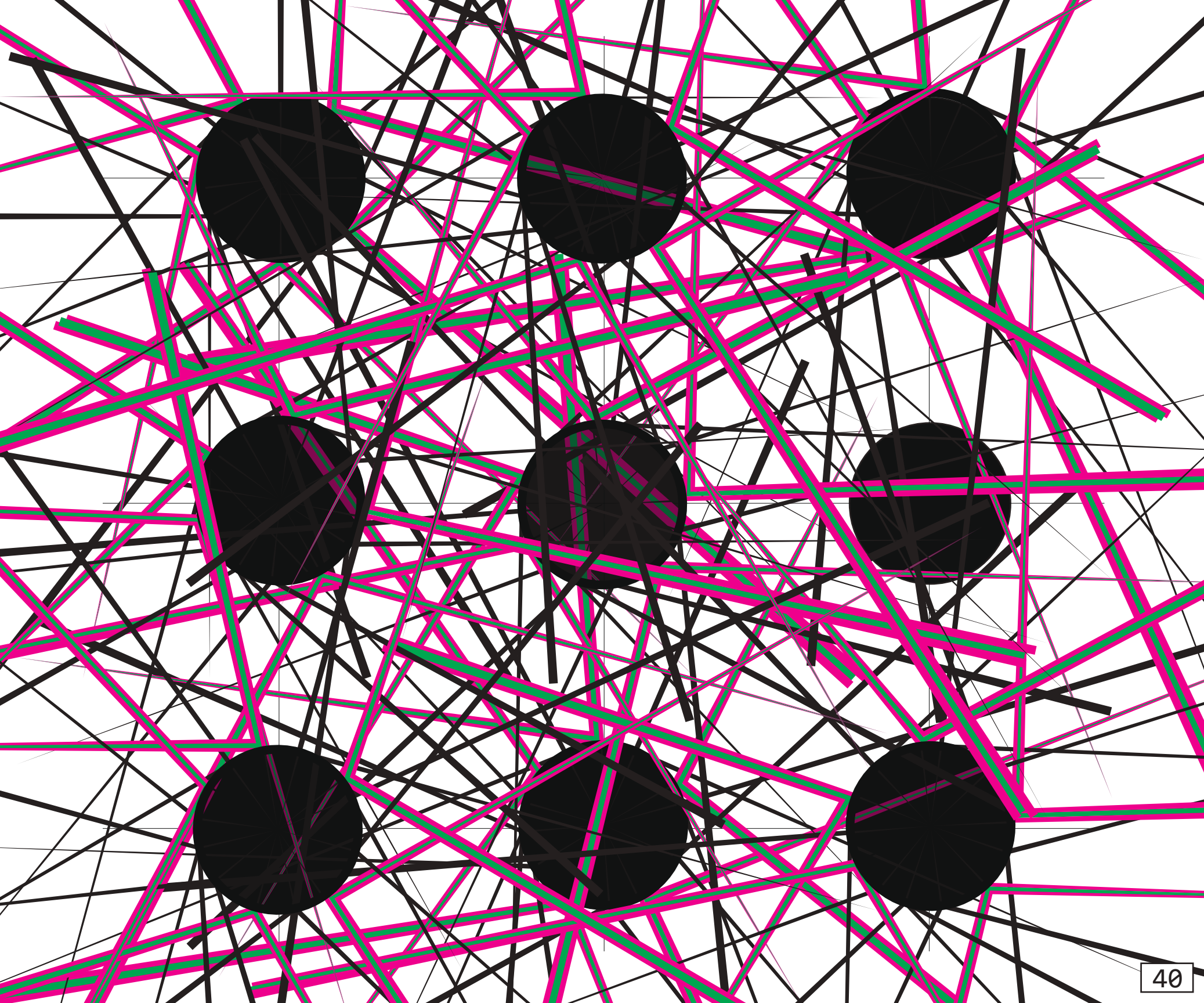
└→ mental distance

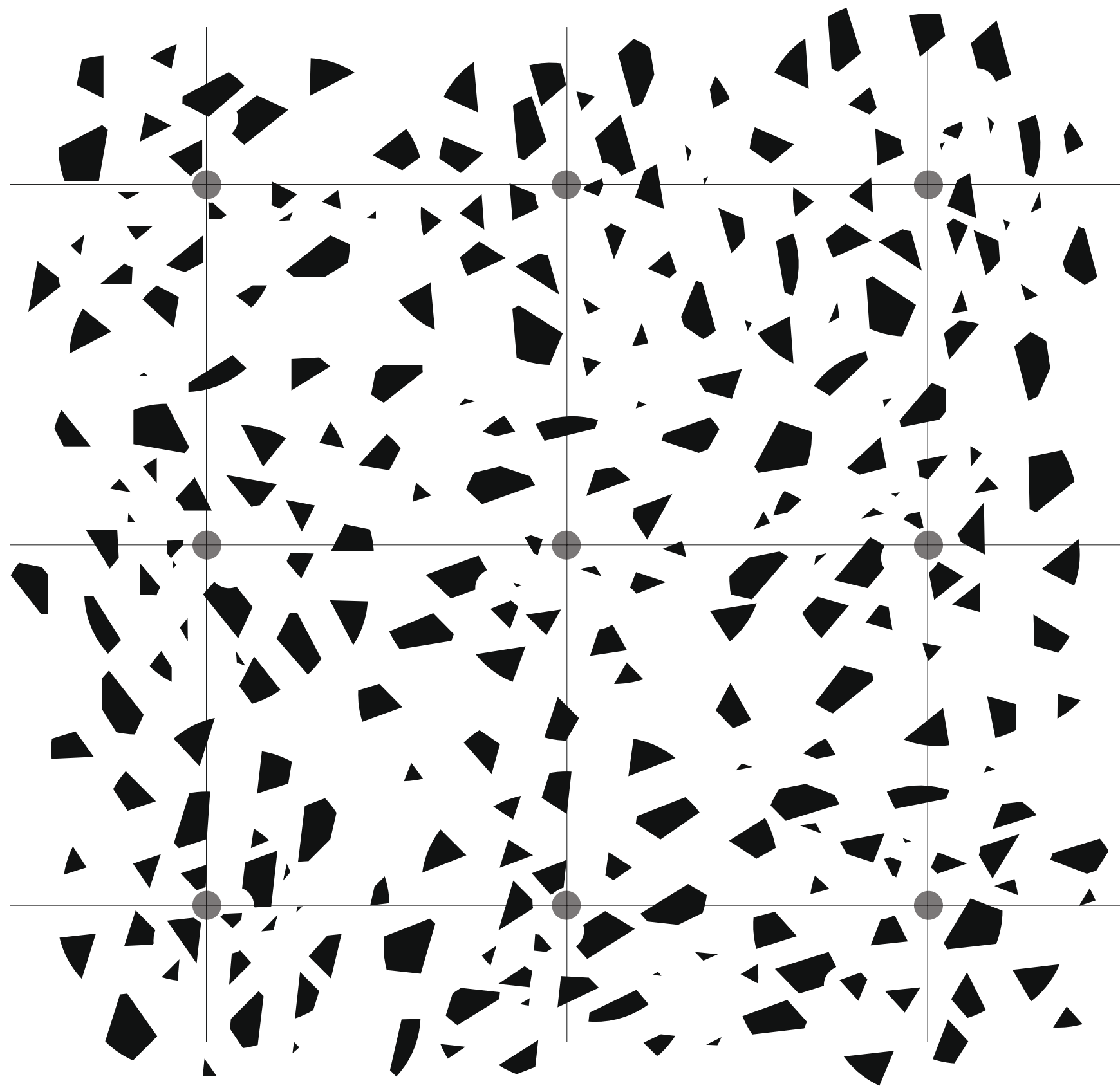
:only the more visible

Georg Simmel

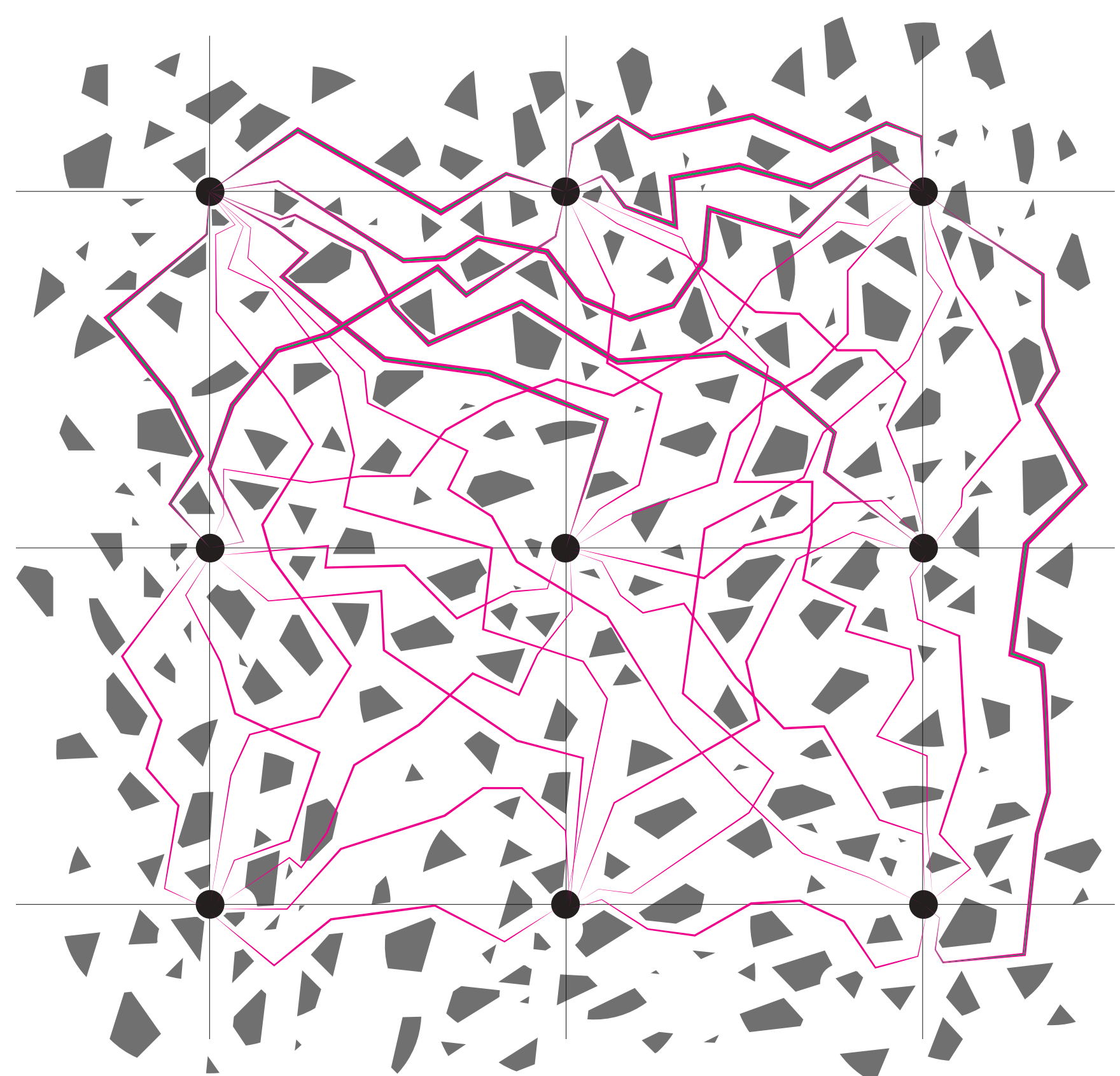




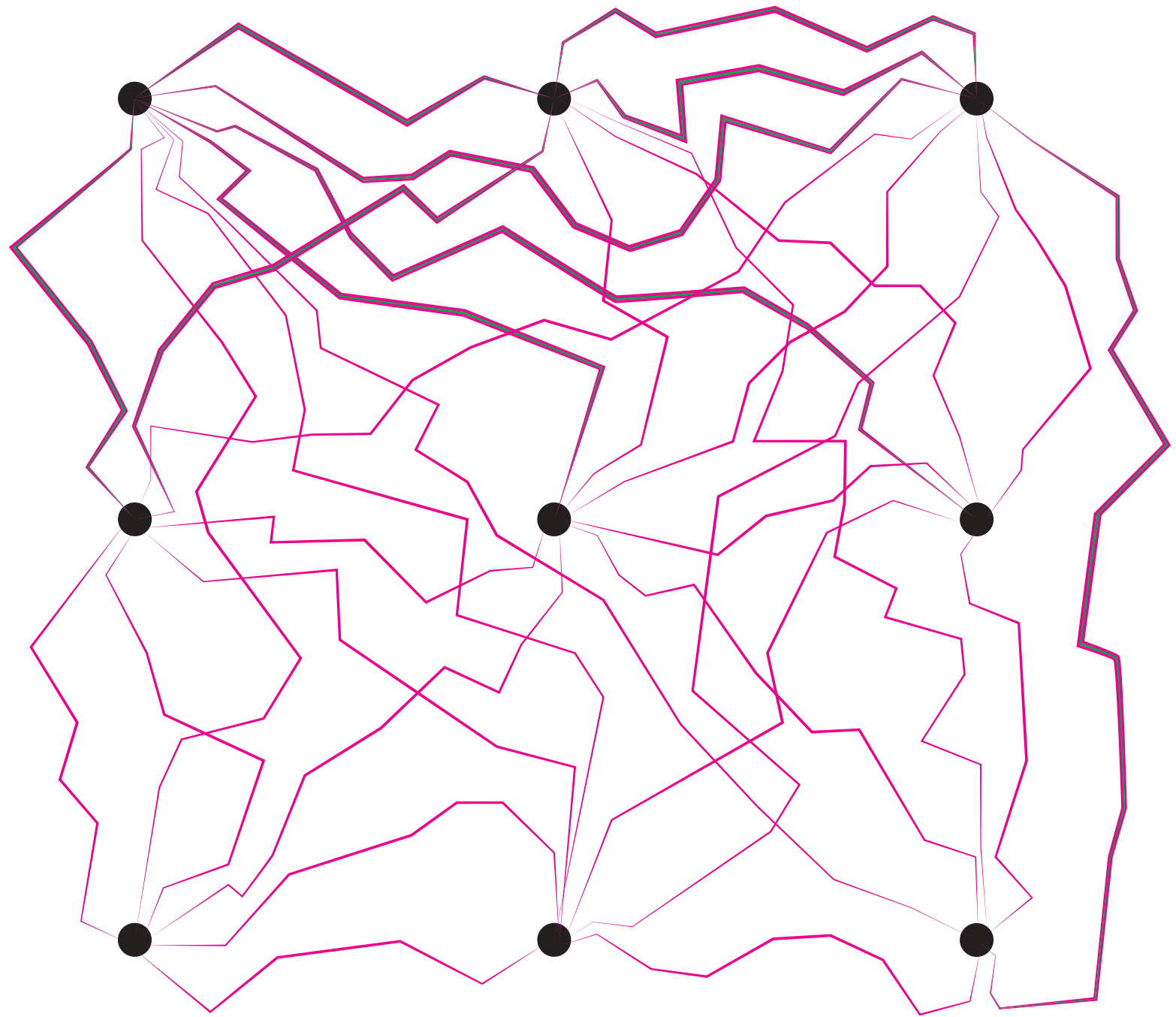




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43



The Virtual - A Border or a Connection?

Amidst the digitalized social scene of the 21st century, the role of the Virtual is put to question.

What is its contribution?

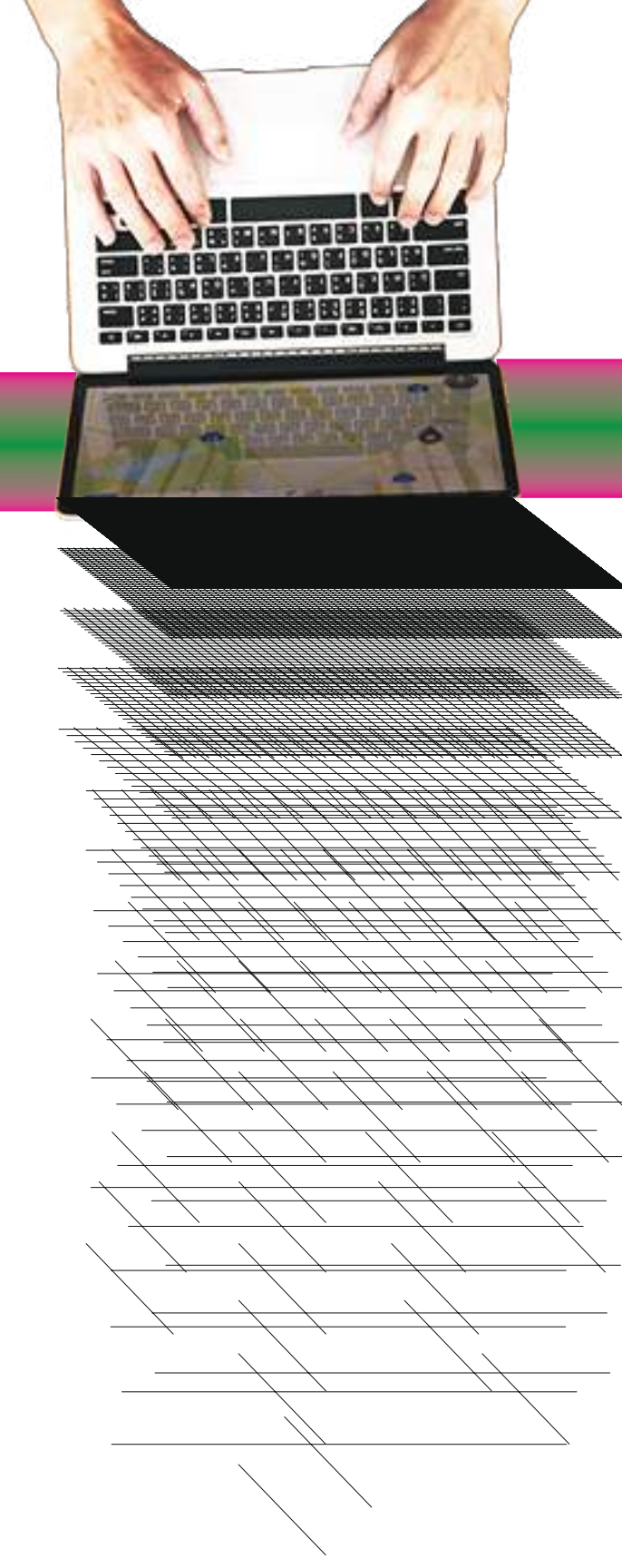
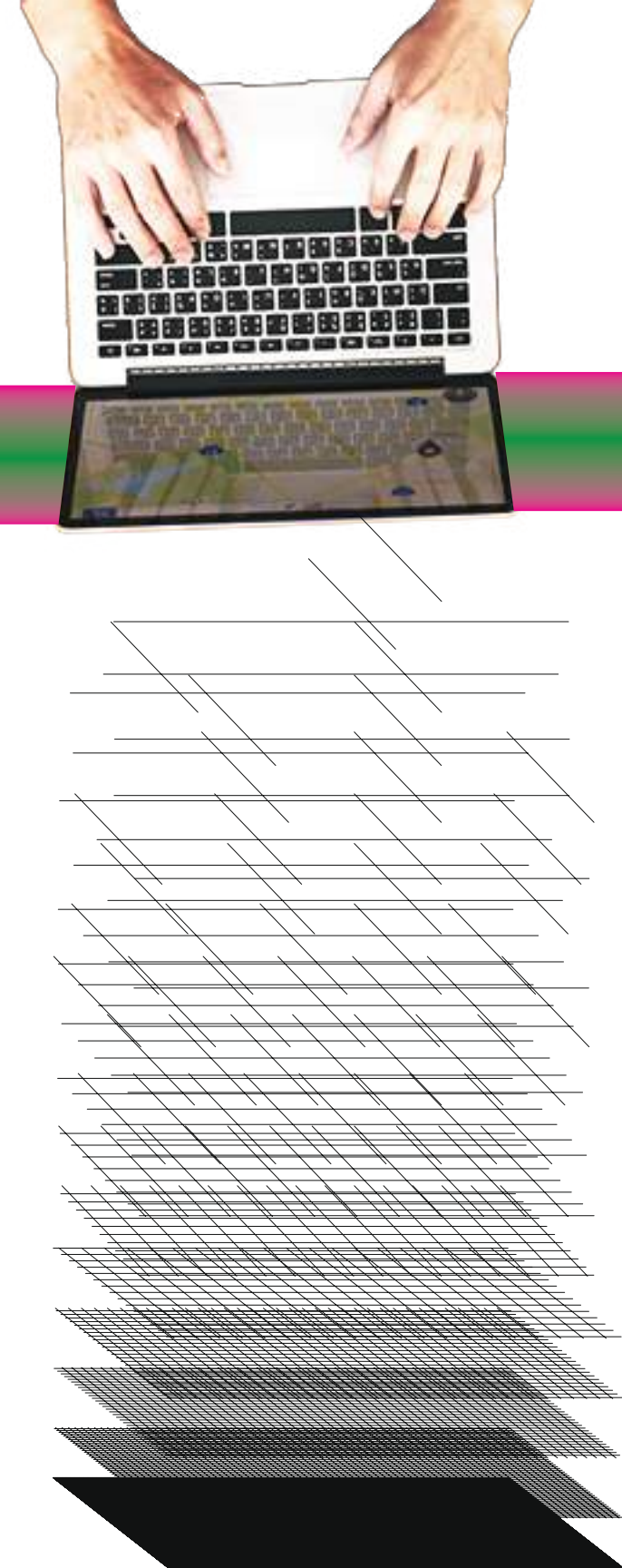
Is the Virtual a mode of transition from a borderless state to a bordered one, or a mode of transition from a bordered state to a borderless one?

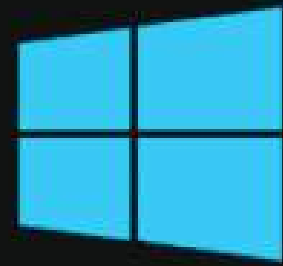
The answer is *circumstantial*.

In the upcoming exploration, I apply the question to myself by assessing my presence in the Virtual realm. Laying out my social media platforms
- LinkedIn, Twitter, Instagram, Zoom, WhatsApp -

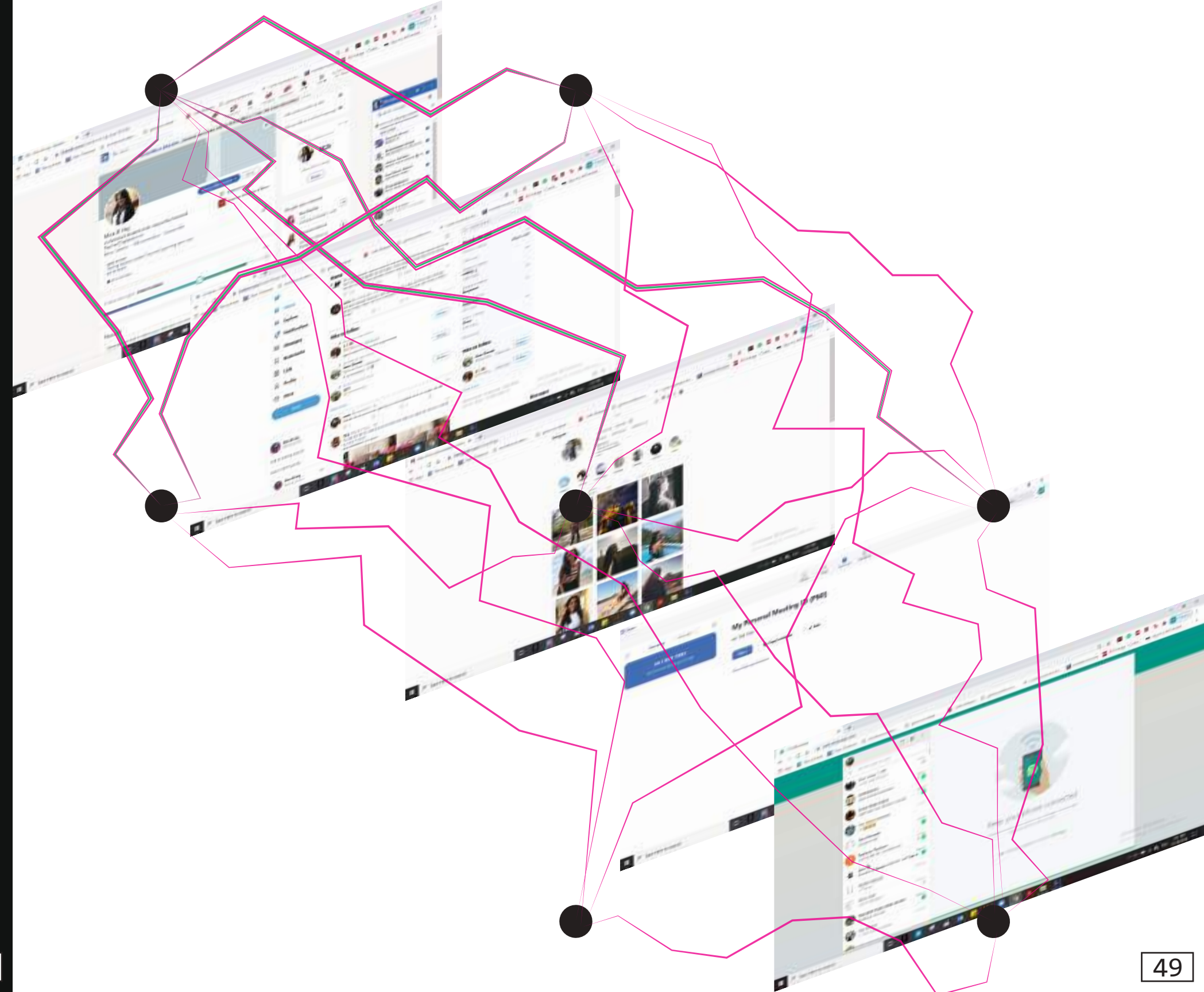
I find my image to be a systematically filtered representation of my identity. The fact that I choose what to display and what not to channels into crafting a filtered *Virtual Image*.

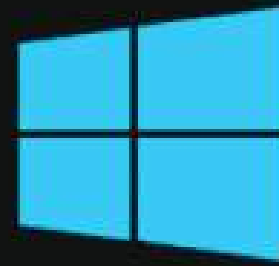
I am bordered by a screen, a profile, a keyboard.



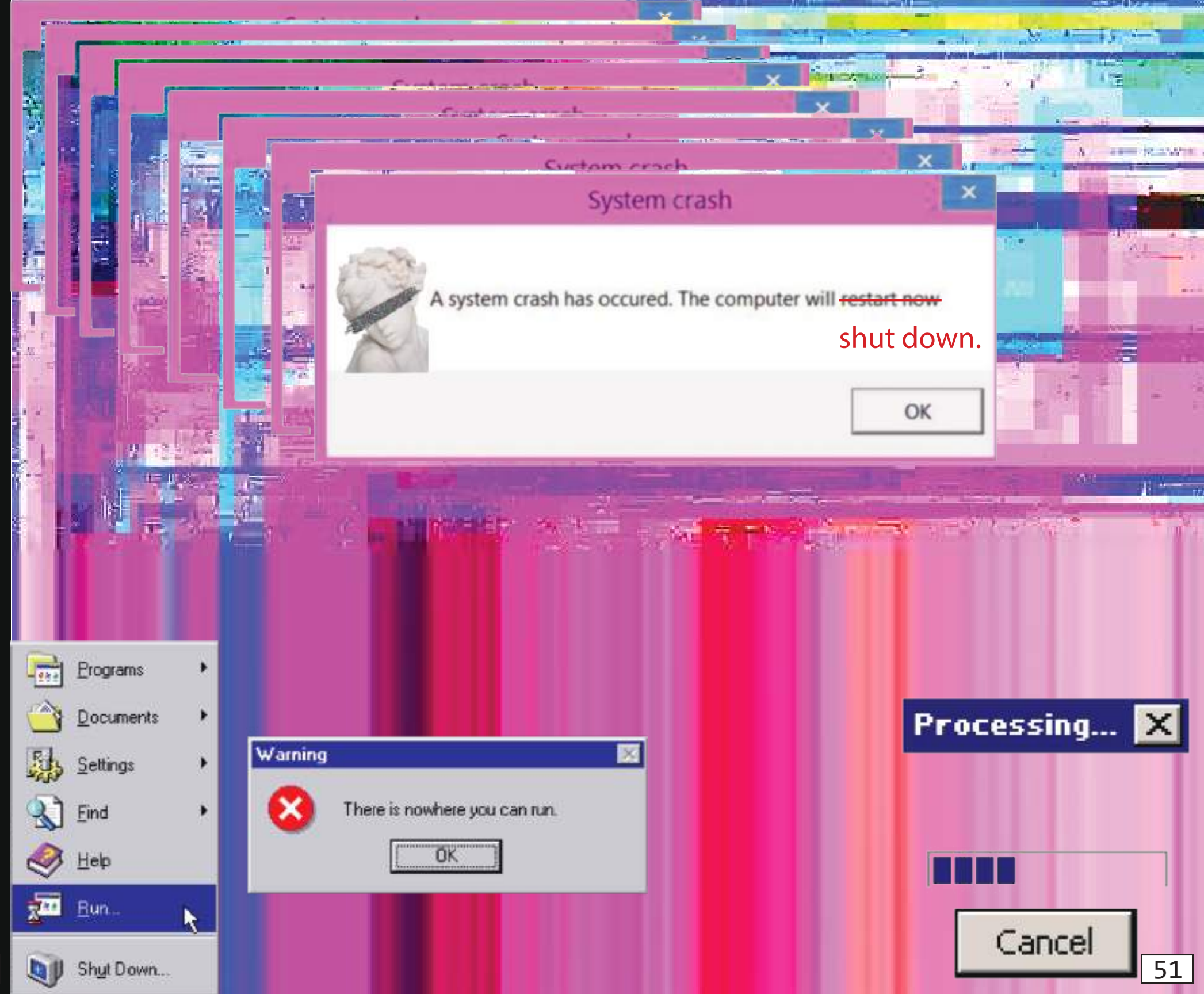


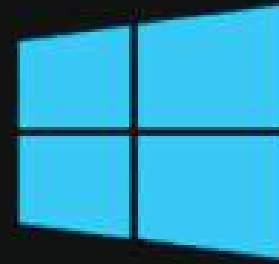
Loading Profiles





Diagnosing Authenticity





Shutting Down

The metropolitan type
- which naturally takes on a (thousand) individual
modifications -
creates a
: **protective organ for itself**
against the profound disruption with which the
fluctuations
&
discontinuities
___of the___
)external milieu(
that threaten it.

Georg Simmel

/Demarcation/

:The action of fixing the boundary or limits of something

Georg Simmel

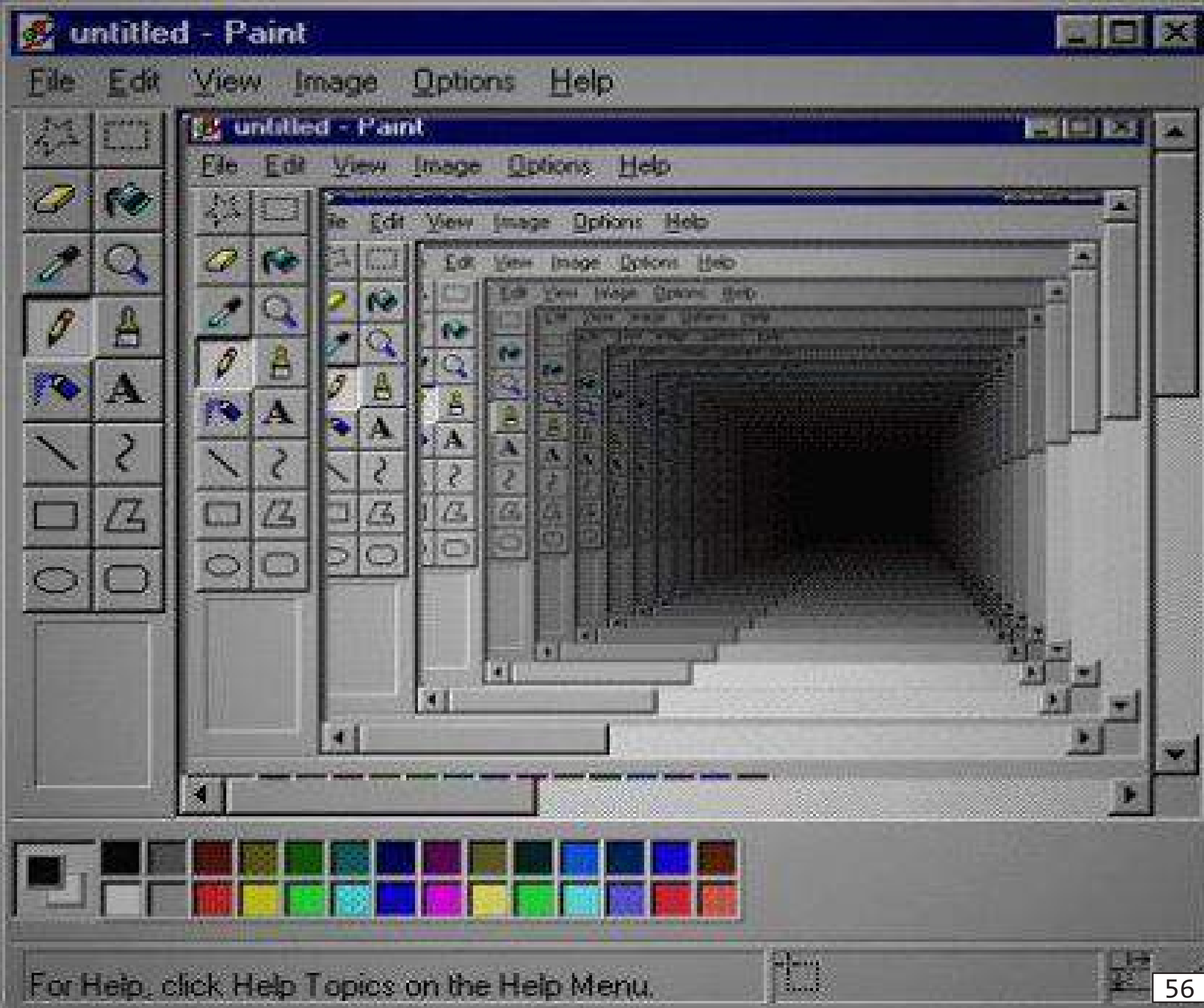
Demarcating the Virtual

How to move away from a *Photoshopped reality* where the virtual -a screen- leads to a dead end, a black hole?

Immersion in the Virtual leads one to a state of *decolorization*, the external stimuli lying within the realm of actuality -the real- cease to acquire attention.

I propose a gradual process of *recoloring* along a spectrum of spaces:
Public > Social > Personal > Intimate

_The Virtual filters into each space/

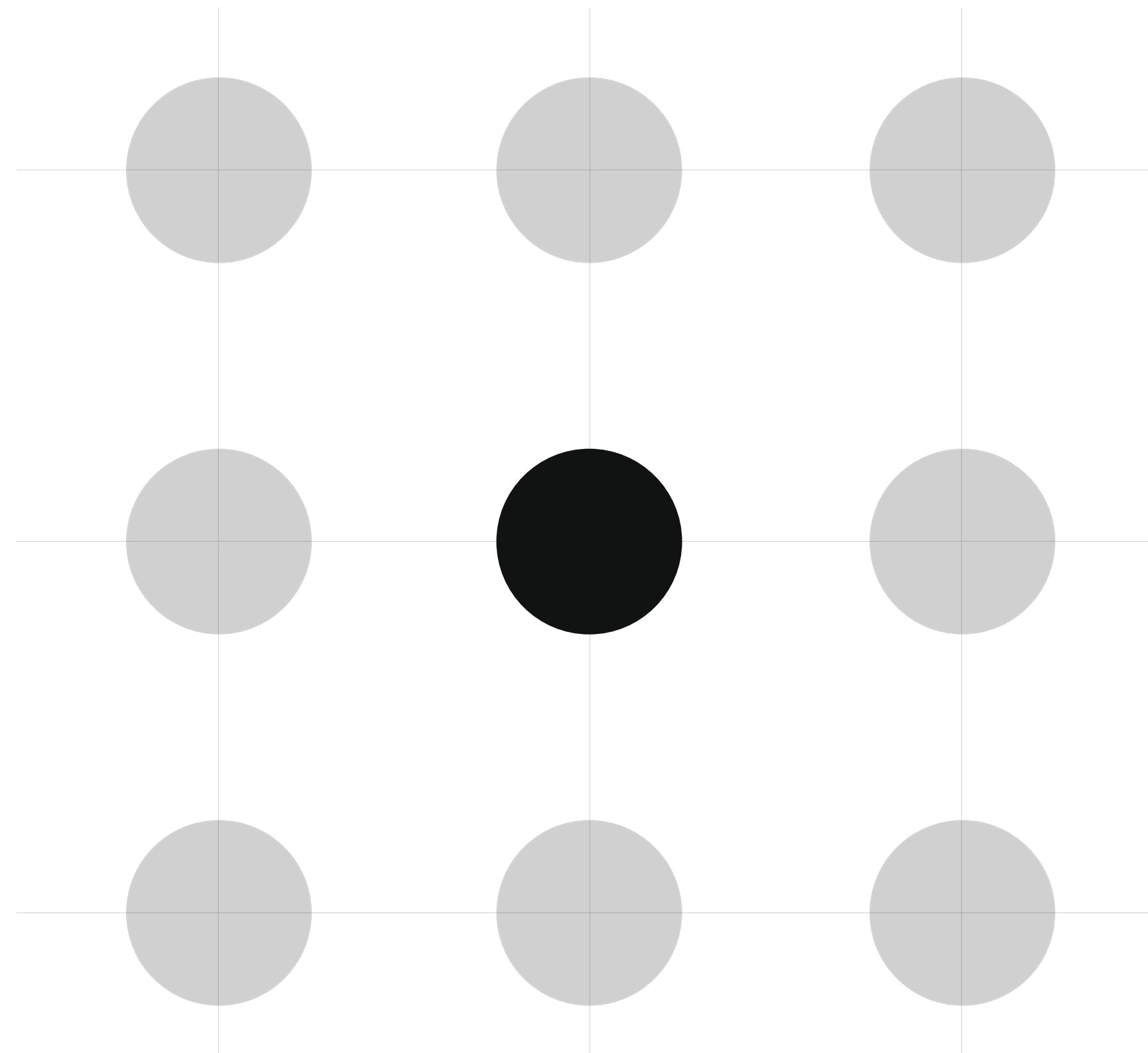


Stimuli appear to a
-blasé- person as
:homogeneous
:flat
:grey colour

/de-coloring



Georg Simmel





60

re-coloring/



61

INTIMATE SPACE

PERSONAL SPACE

SOCIAL SPACE

PUBLIC SPACE

Exploring the Gradient

In the upcoming, I explore the decolorization / recolorization process in a chosen space, identifying the role of the Virtual. The gradient is laid out along the grid, identifying a transition from a *borderless*)*colorized*(to a *bordered*)*de-colored*(state.

By exploring this methodology in Intimate, Public, and Social spaces, the gradient is manifested in the following equations:

Stage #1: Real + Physical Proximity

Stage #2: Virtual+Physical Distancing > Social Proximity

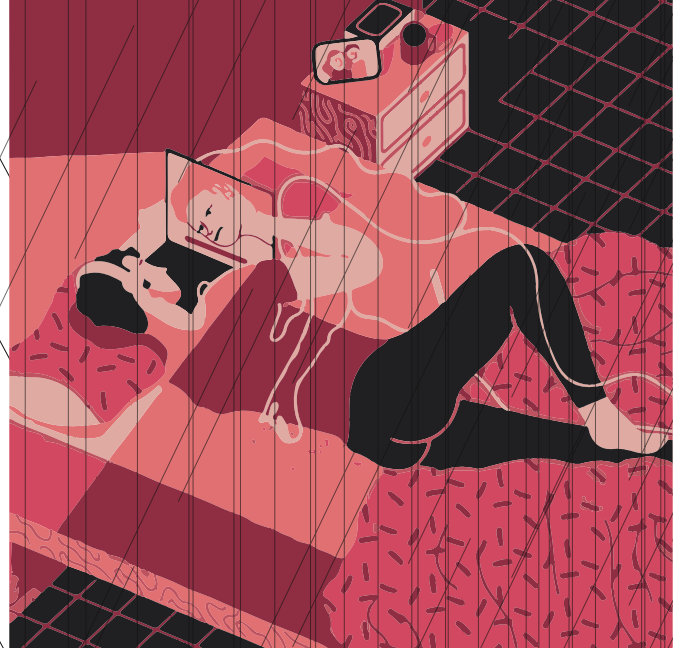
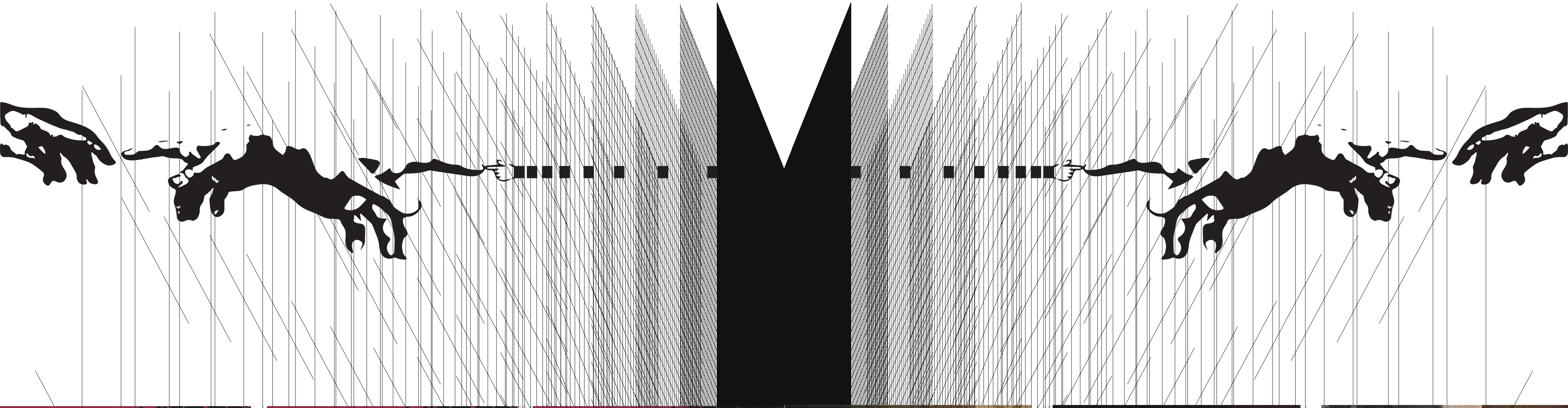
Stage #3: Physical & Social Distancing

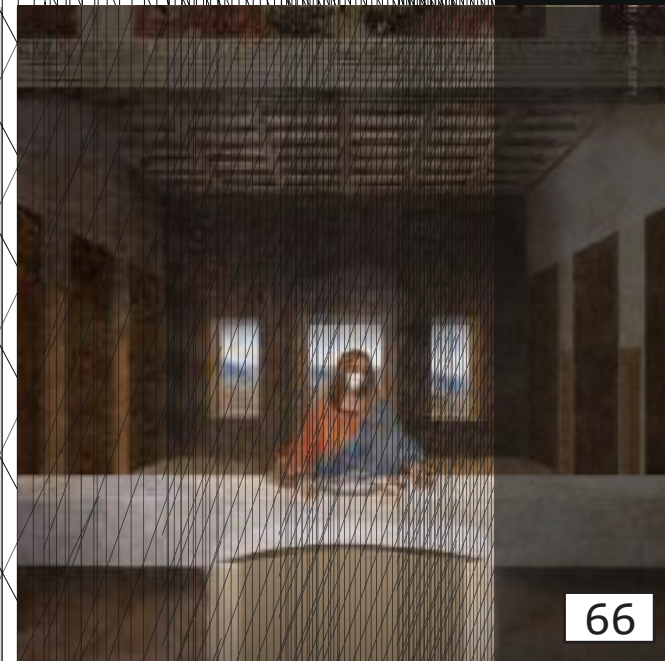
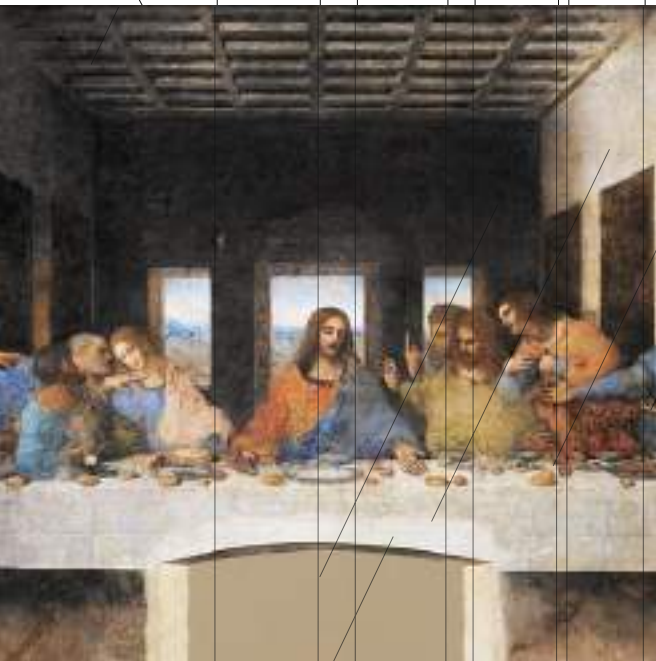
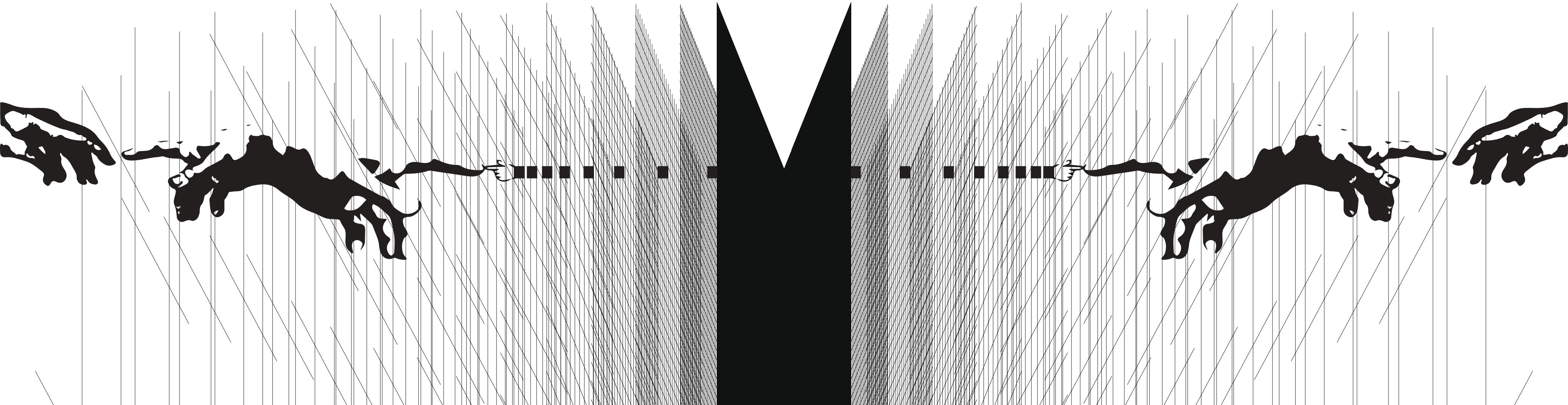
Undertsnading the Outcomes

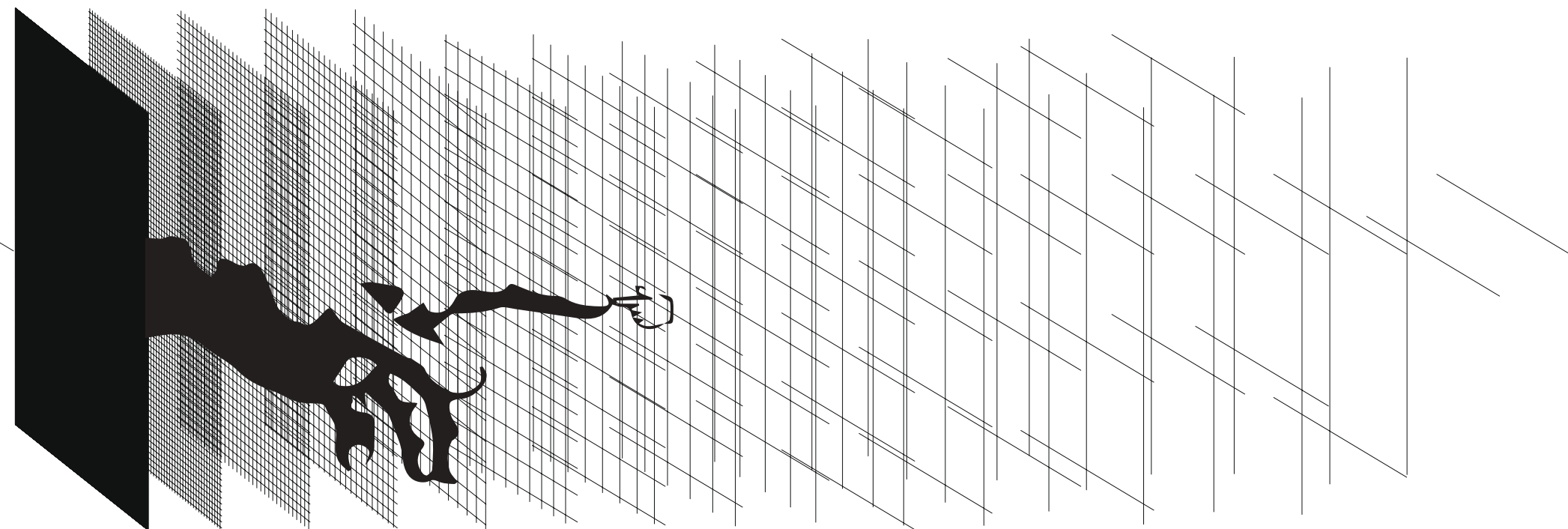
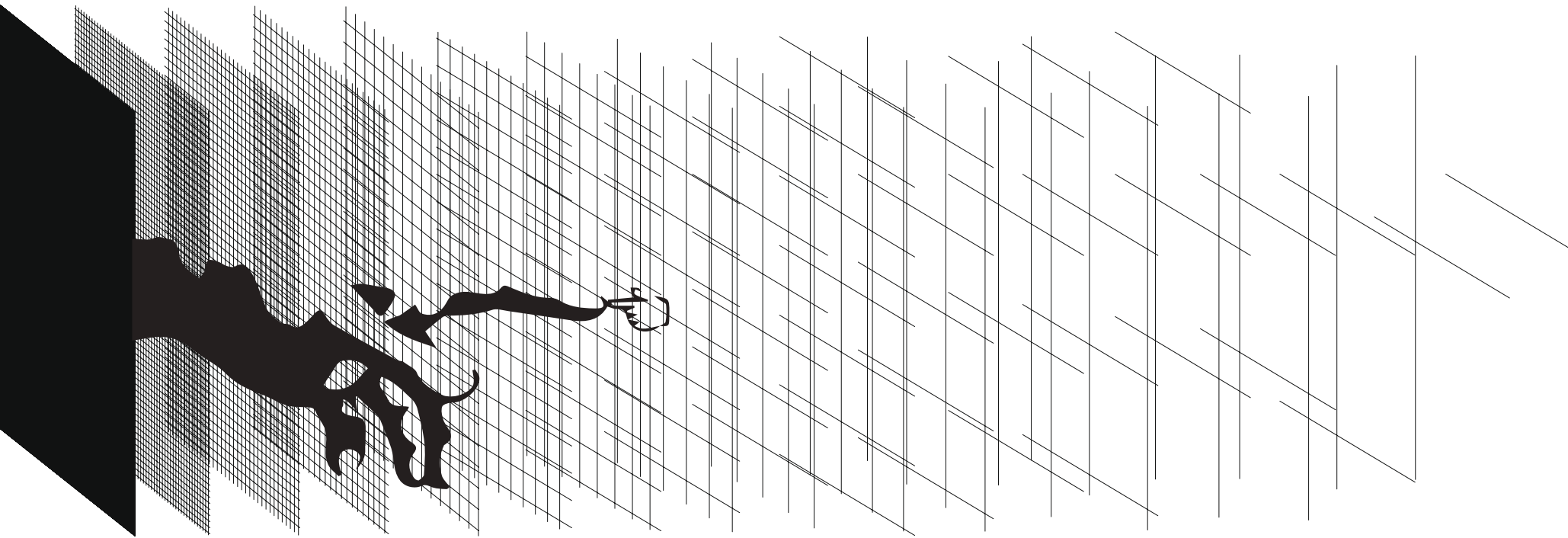
The conclusion is that the Virtual is an interface between two different states of reality - one in which social and physical proximity converge, and the other where social and physical distancing converge. That being said, the introduction of the Virtual (stage #2) is an opportunity of a different reality than stage #3.

Case Study: HER - Movie (Romance,Sci-Fi) - 2013

The movie showcases virtuality as an interface in two realms, the Intimate - where the protagonist engages in a romantic relationship with a Virtual voice, and the personal - where a virtual holographic space is created within a real physical space.







HER - Movie (Romance,Sci-Fi) - 2013

Intimacy: The Virtual as means of connection, attraction, and love beyond tangibility.

HER - Movie (Romance,Sci-Fi) - 2013

Transformation of Personal Space: A Hybrid Space encompassing the Real and the Virtual





Reality as a Multiplicity of Virtualities

The conducted explorations conclude that the Virtual - upon its manifestation in the real - results in an intermediacy between different states of realities. This fusion, resulting in an alternative reality, is no longer a reality. I classify it as a Virtuality within Reality.

Going back to the Matrix

The `_Reality/` I explore goes beyond the primary cartesian Matrix where only realities are identified. My focal point is the overlap between the polarized morphed realities. While the cartesian Matrix manifests itself in the physical realm, I question the applicability of Hybrid Realities `/Virtualities/` in the same realm.

The Space of Manifestation

The Virtualities I explored on an abstract and conceptual level are to be detached from physicality. They are to be manifested in Virtuality; a digitalized landscape

While Architects define and design a building/program/experience in a physical space, my exploration takes my architectural/spatial manifestations in a `virtual_electronic` space.

The site ceases to be physical, and becomes a numerical landscape, a virtual screen .

PHYSICAL REALITY VIRTUAL REALITY PHYSICAL DISTANCING PHYSICAL PROXIMITY SOCIAL DISTANCING SOCIAL PROXIMITY

PHYSICAL REALITY

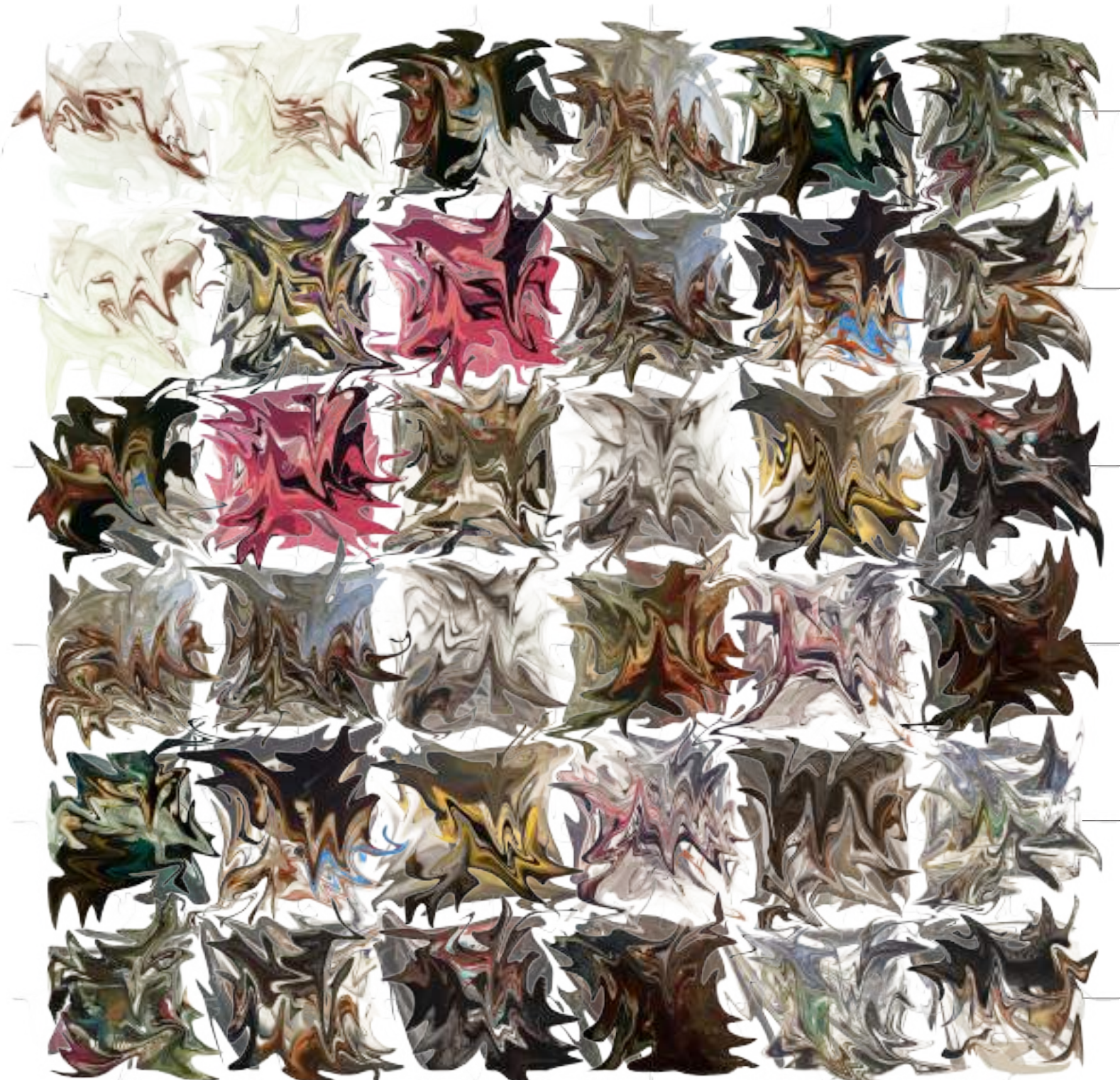
VIRTUAL REALITY

PHYSICAL DISTANCING

PHYSICAL PROXIMITY

SOCIAL DISTANCING

SOCIAL PROXIMITY



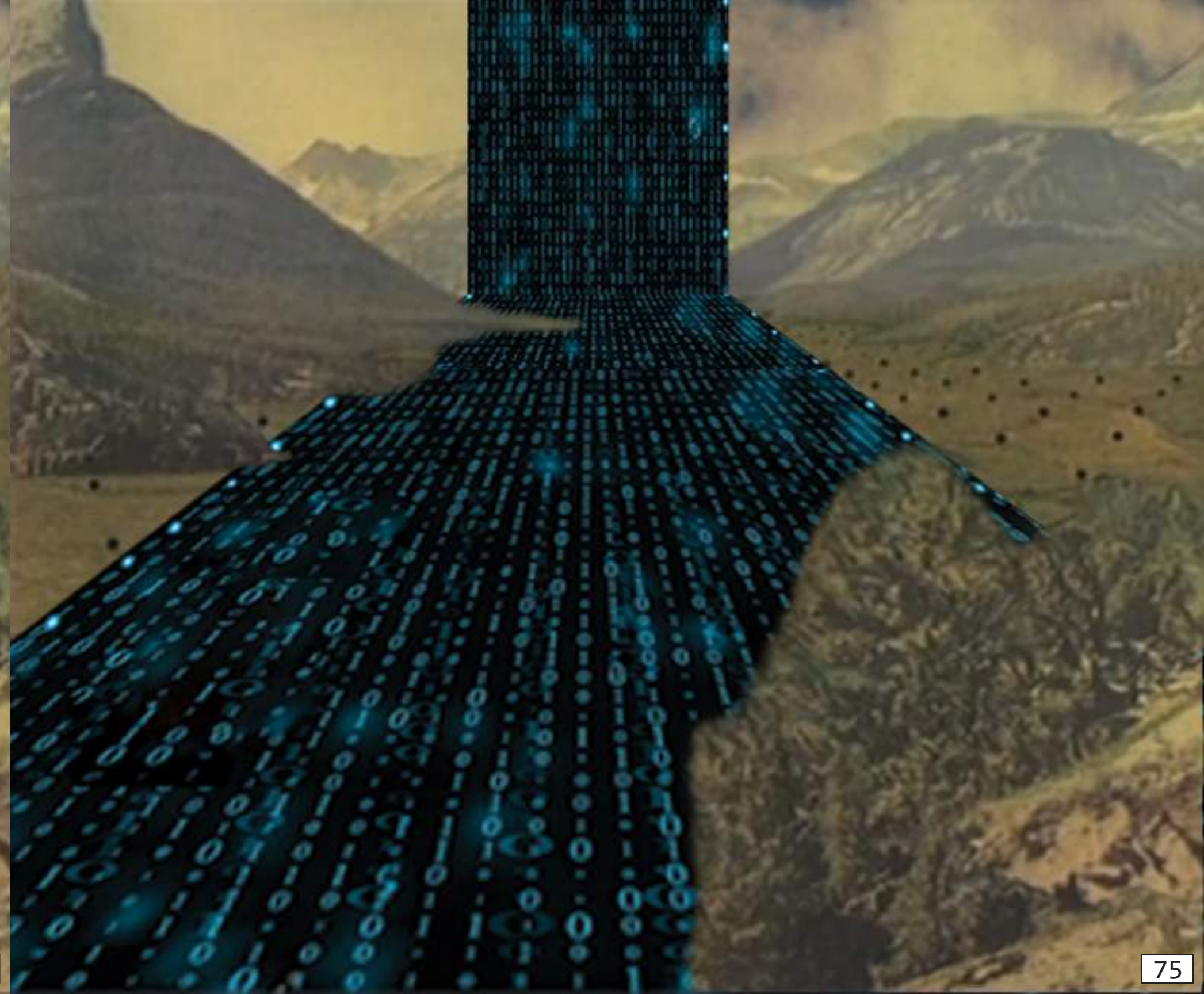
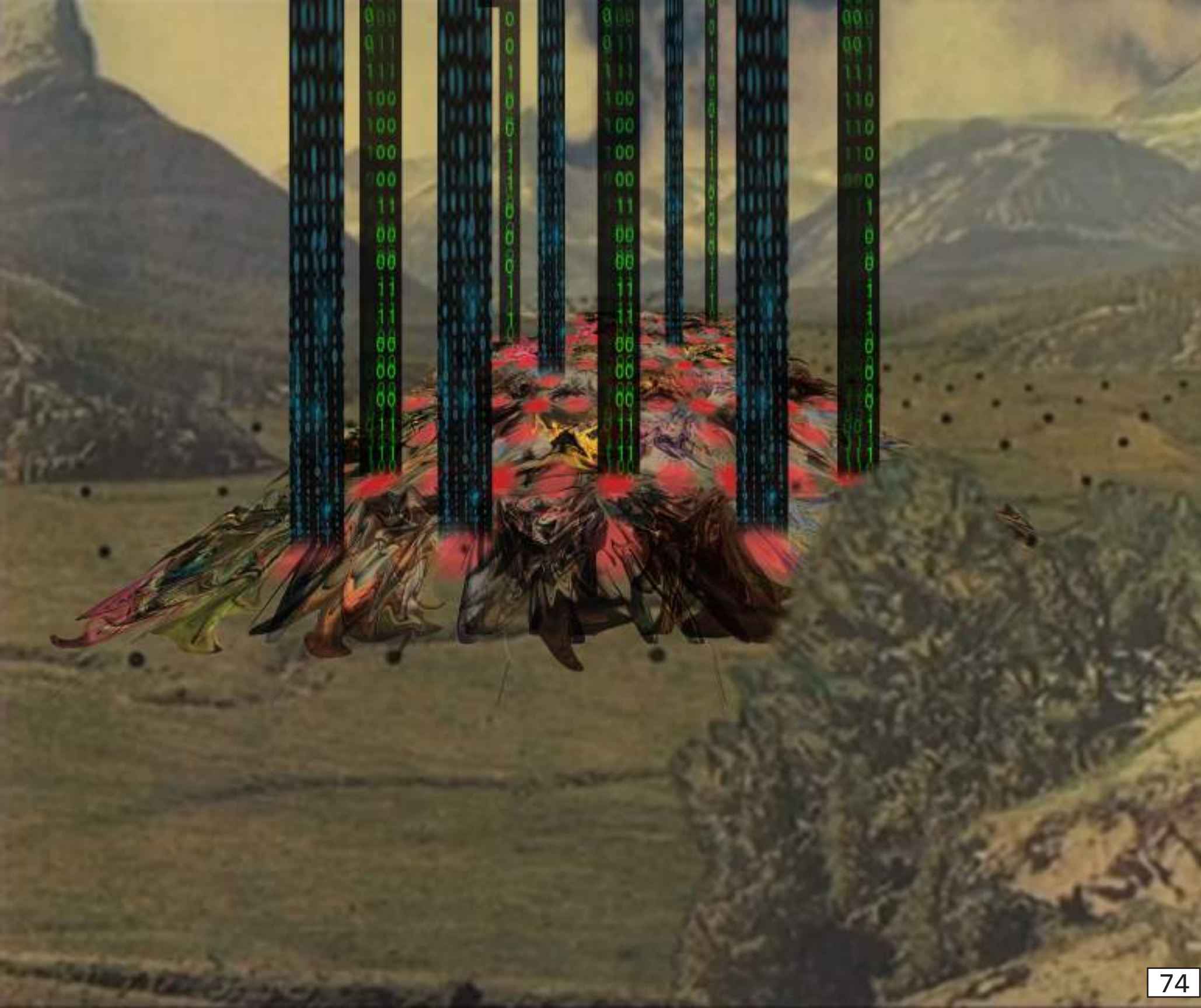




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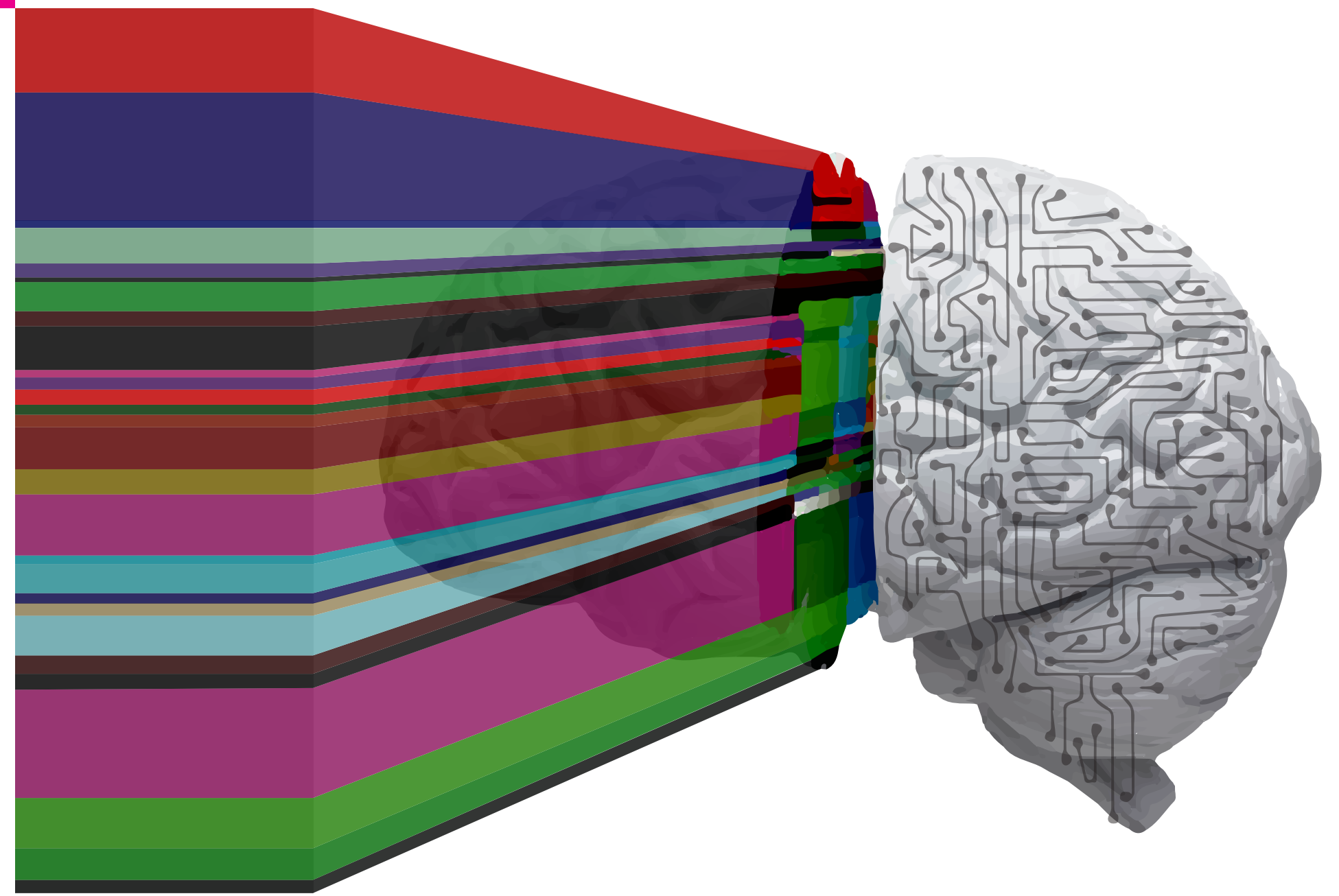
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Spatial Manifestation.....162



Preface 2.0 /'prɛfəs/

Hybrid Realities /Virtualities/ are those that are neither physical nor virtual, but rather an in-between.

The Virtualities I explored on an abstract and conceptual level are to be detached from physicality. They are to be manifested in Virtuality; a **digitalized landscape**.

What program can be classified as a hybrid reality?

What occurs to me are **mental images**; our brain levitates between physical and virtual realities as we displace from where we are and situate ourselves in imaginary landscapes of our own creation, reminiscence, and craving.

I manifest my conceptual framework into a hybrid landscape where I am the data provider, the designer, and the user of the spatial realm. The landscape is generated from a collection of my own mental imagery translated into information architecture.

Thesis statement

The project manifests the reconstruction and revitalization of levitation spaces

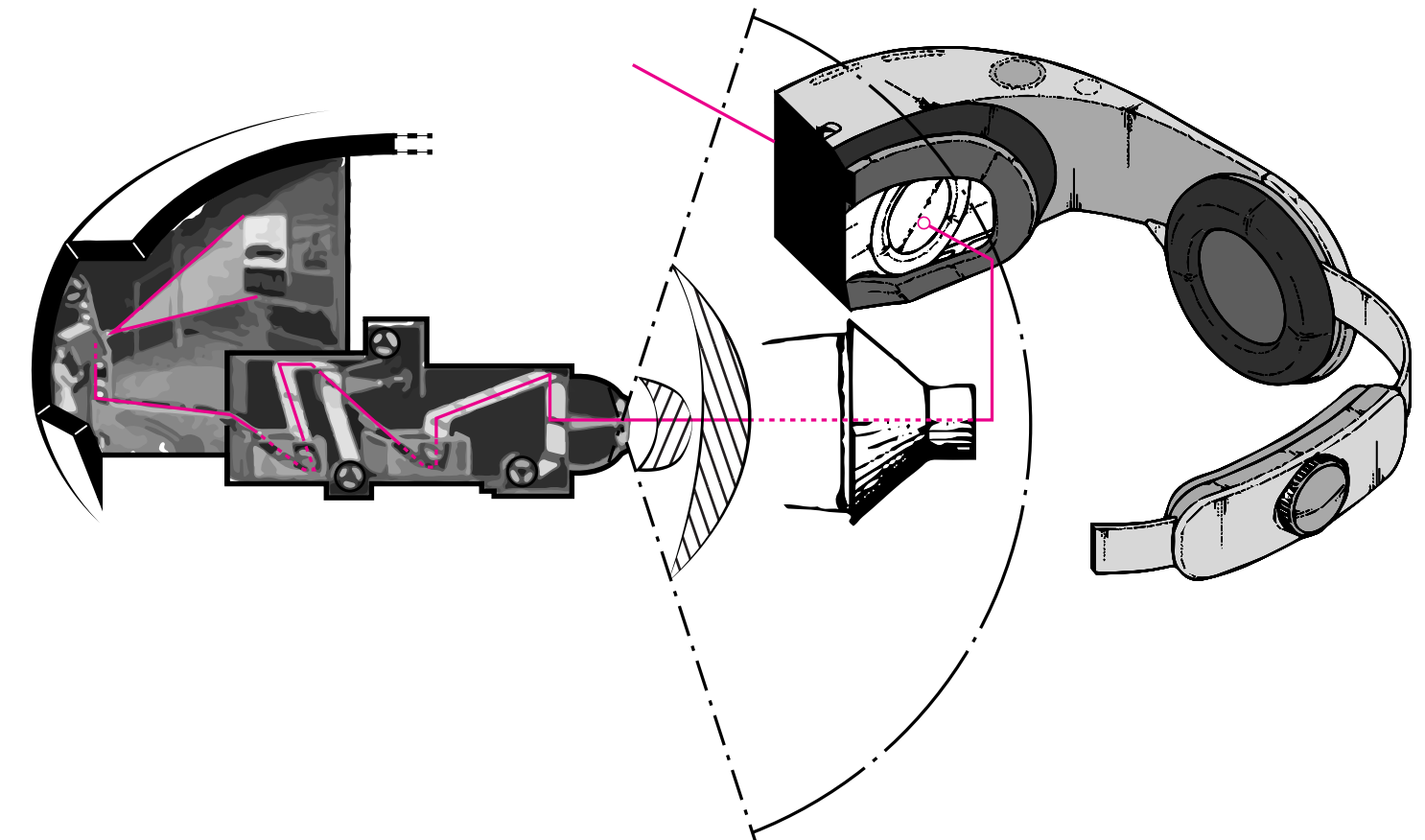
 _mental images
through an interface between physical space and virtual tools.

Site: a virtual landscape

Program: mental images

Users: myself /the protagonist/ , secondary characters

The project is a collection of **time capsules** manifested into a virtual landscape, each capsule features **programmed mental images** that are experienced through modes of mediation between both **physical** and **virtual** spaces.



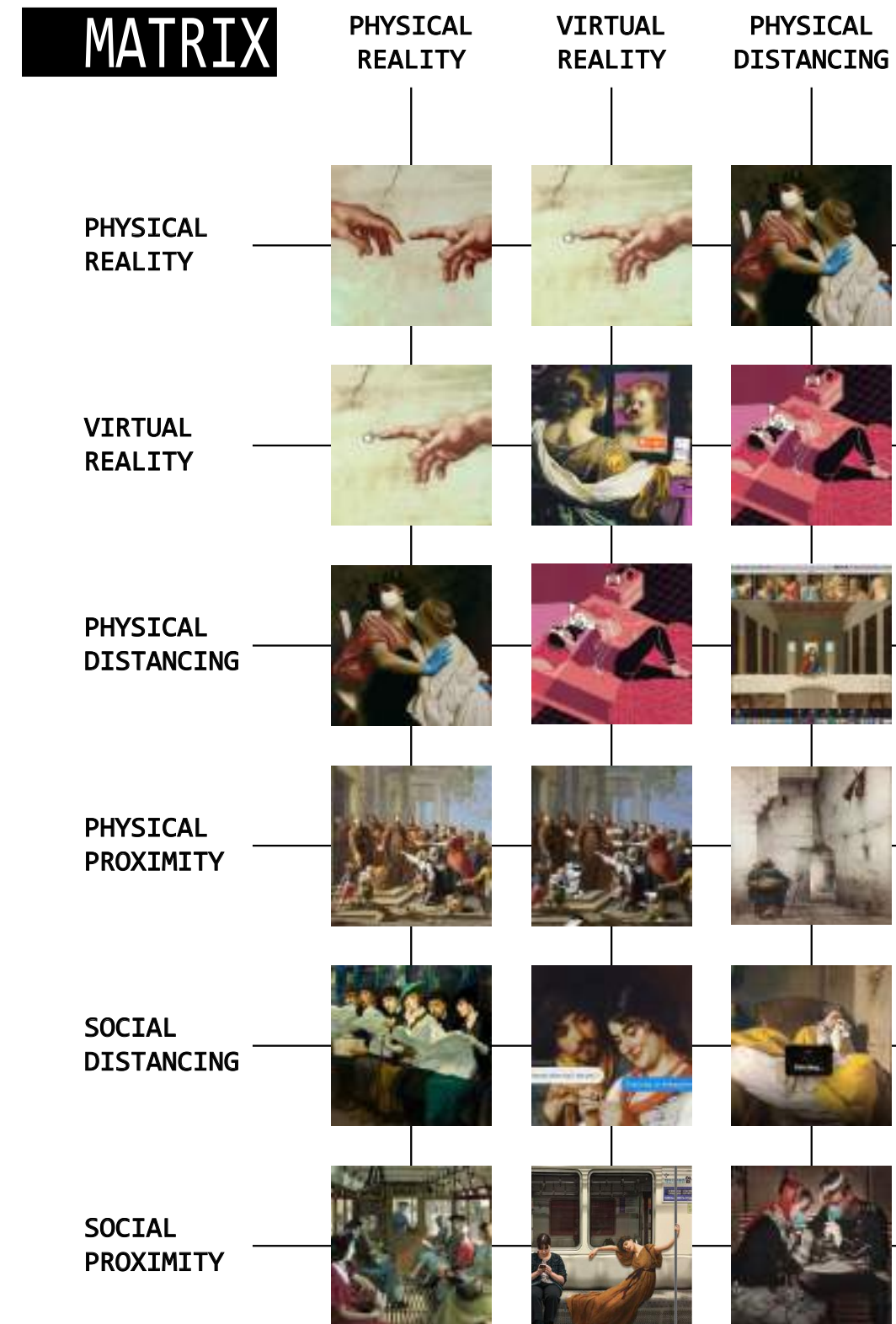
Key take-outs from Chapter 01

Now that the implementation strategy is identified, I bring back key elements I developed in the experimental stage, and re-iterate them to generate the final product.

1. **The Matrix:** originally developed as a mosaic that collages different social settings, conditions, and experiences, the Matrix becomes a subject of investigation and dissection. It offers itself as a learning tool that informs the design strategy and process.

2. **The Conceptual Landscape:** The manifestation of the Matrix into the virtual landscape serves as an introduction foreshadowing the process of inhabiting the landscape with information architecture.

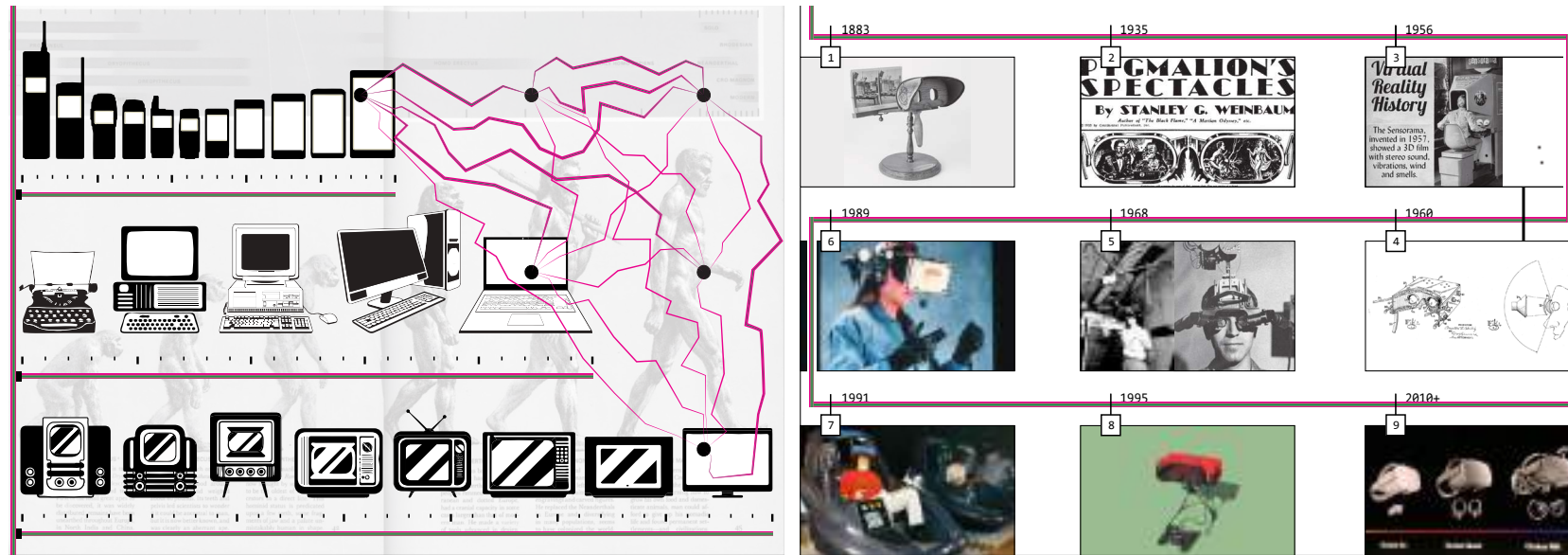
> The gridded mosaic on the landscape conceptualizes my program; a grid of mental images .



The Process

Arriving to a well rounded spatial manifestation called for a series of investigations to comprehend the concept of mental imagery in terms of human physiology and psychology, identify the factors filtering into the program and the virtual mode of experiencing the space.

Seeing how the realm of technology has been evolving from static space-demanding apparatuses to practical movable devices, incorporating such tools has become a facilitated action rather than ambitious.



The investigation is structured in a conceptual framework which will be covered throughout this chapter.

“What is missing from our dwellings today are the potential transactions between the body, imagination, and environment.”

Bloomer K and Moore, C. Body, Memory and Architecture (1977)

CONCEPTUAL FRAMEWORK

- 1 **Matrix Dissection**
- 2 **The Medium: *Types of Realities***
- 3 **The 5 Senses vs. The Medium**
- 4 **Mental Imagery**
- 5 **The 5 Senses vs. Mental Imagery**
- 6 **Program Definition**
- 7 **Mapping Mental Imagery**
- 8 **Spatial Manifestation**

CONCEPTUAL FRAMEWORK

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The Process

Dissecting the Matrix starts by identifying three main components:

1. **Physical Reality** i.e. the tangible components of each scene
2. **Virtual Reality** i.e. the intangible components of each scene
3. **The Medium** i.e. the technological devices facilitating the state of the in-between

Identifying each of these three components allows me to identify the scenes of interest, being the hybrid scenes.

The Matrix is thus reduced by eliminating the scenes that do not fulfill the state of hybridity, thus morphing the Matrix to an incomplete grid.

Virtual Reality

The Medium

Physical Reality

PHYSICAL

	PHYSICAL REALITY	VIRTUAL REALITY	PHYSICAL DISTANCING	PHYSICAL PROXIMITY	SOCIAL DISTANCING	SOCIAL PROXIMITY
PHYSICAL REALITY						
VIRTUAL REALITY						
PHYSICAL DISTANCING						
PHYSICAL PROXIMITY						
SOCIAL DISTANCING						
SOCIAL PROXIMITY						

MEDIUM

PHYSICAL REALITY VIRTUAL REALITY PHYSICAL DISTANCING PHYSICAL PROXIMITY SOCIAL DISTANCING SOCIAL PROXIMITY

PHYSICAL REALITY



VIRTUAL REALITY



PHYSICAL DISTANCING



PHYSICAL PROXIMITY



SOCIAL DISTANCING



SOCIAL PROXIMITY



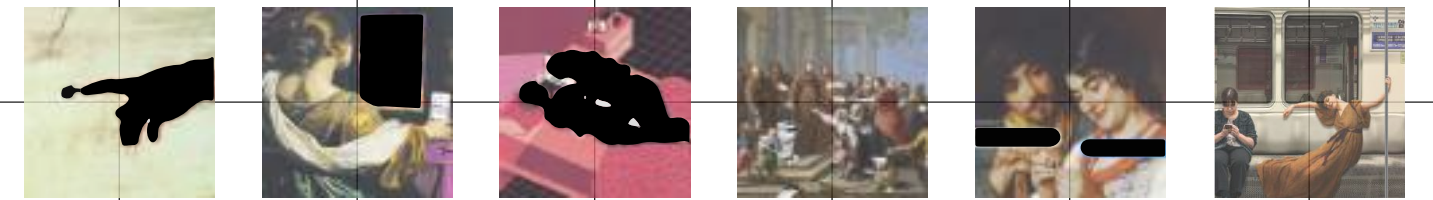
VIRTUAL

PHYSICAL REALITY VIRTUAL REALITY PHYSICAL DISTANCING PHYSICAL PROXIMITY SOCIAL DISTANCING SOCIAL PROXIMITY

PHYSICAL REALITY



VIRTUAL REALITY



PHYSICAL DISTANCING



PHYSICAL PROXIMITY



SOCIAL DISTANCING



SOCIAL PROXIMITY



MERGE

PHYSICAL REALITY

VIRTUAL REALITY

PHYSICAL DISTANCING

PHYSICAL PROXIMITY

SOCIAL DISTANCING

SOCIAL PROXIMITY

SUBTRACTION

PHYSICAL REALITY

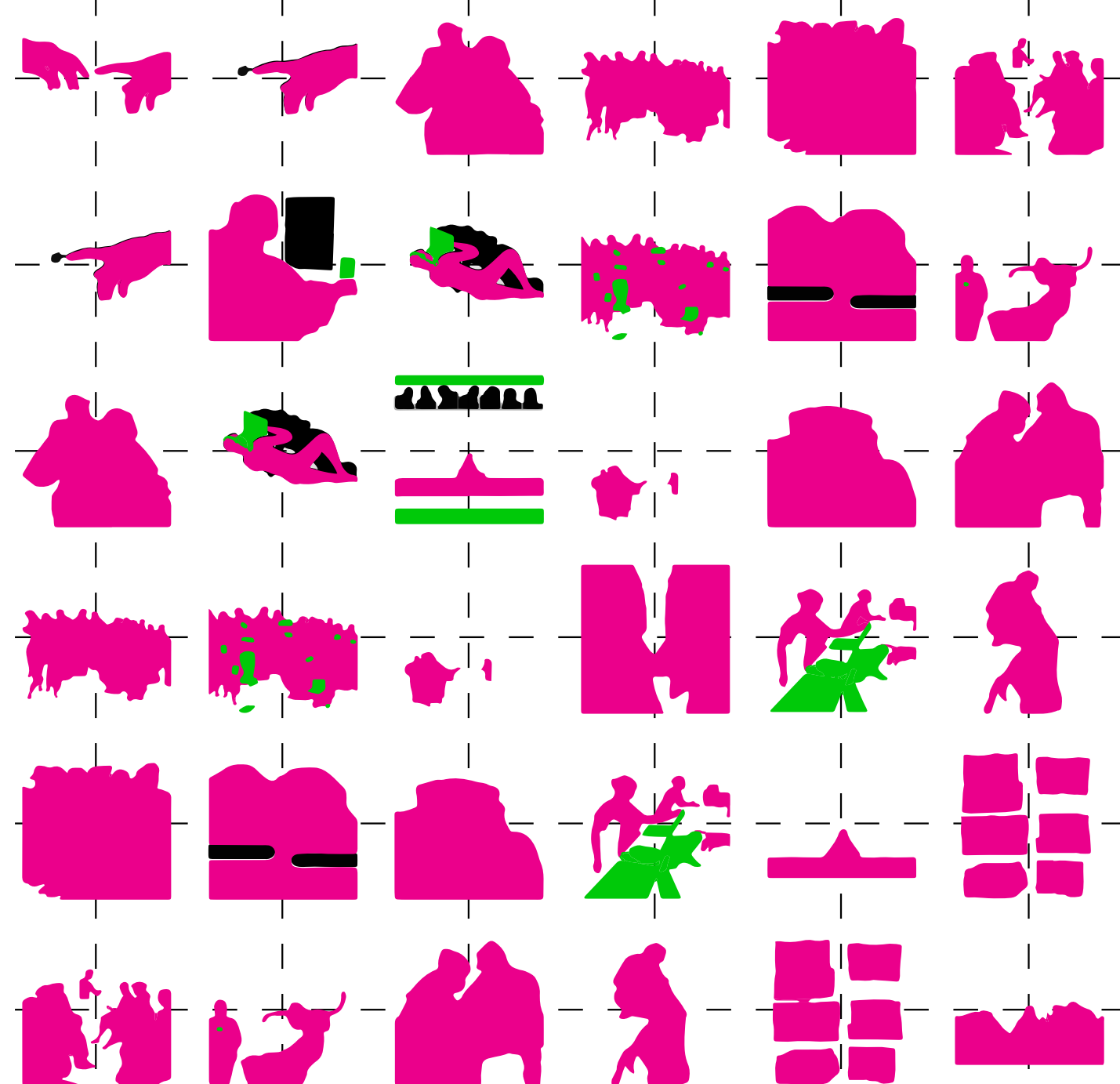
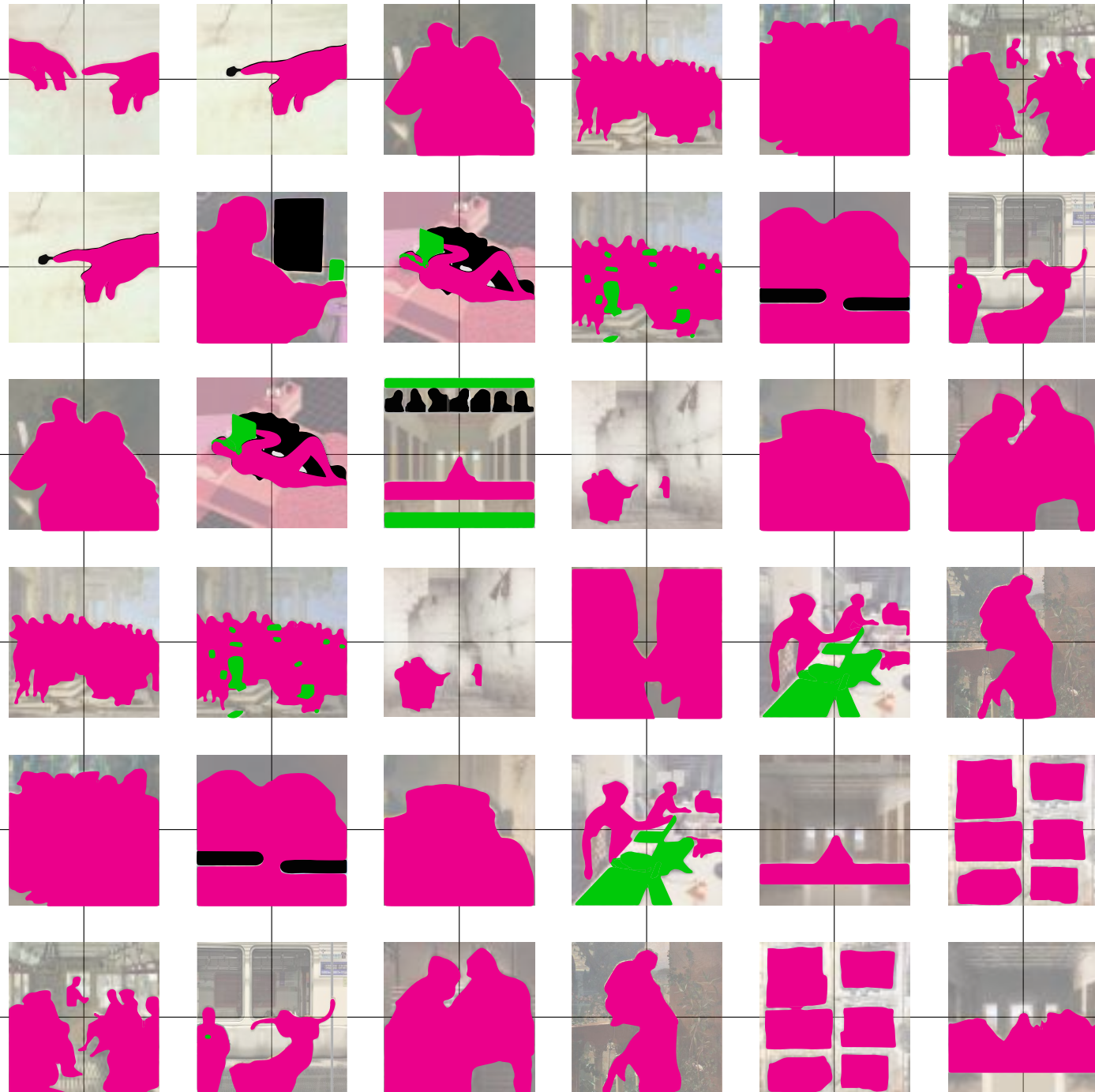
VIRTUAL REALITY

PHYSICAL DISTANCING

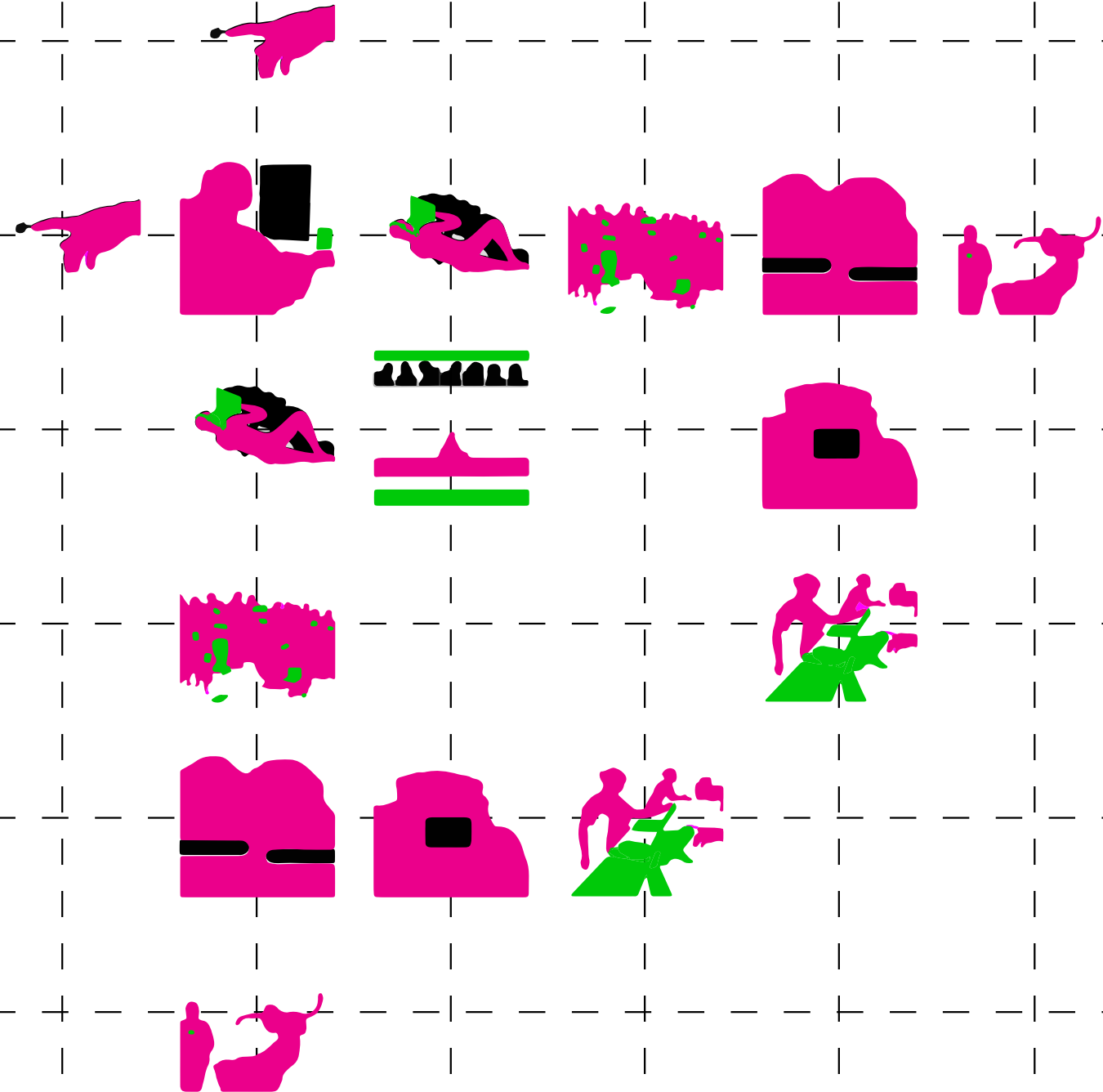
PHYSICAL PROXIMITY

SOCIAL DISTANCING

SOCIAL PROXIMITY



HYBRID SCENES



The identified point of interest is the _____ interface between the physical and virtual realities.

(WHAT) allows for such an interface to happen?
> **the medium.**

: physical
&
: virtual

/levitation in a space that is neither nor, but
both_

CONCEPTUAL FRAMEWORK

1 Matrix Dissection

2 **The Medium: *Types of Realities***

3 The 5 Senses vs. The Medium

4 Mental Imagery

5 The 5 Senses vs. Mental Imagery

6 Program Definition

7 Mapping Mental Imagery

8 Spatial Manifestation

The Process

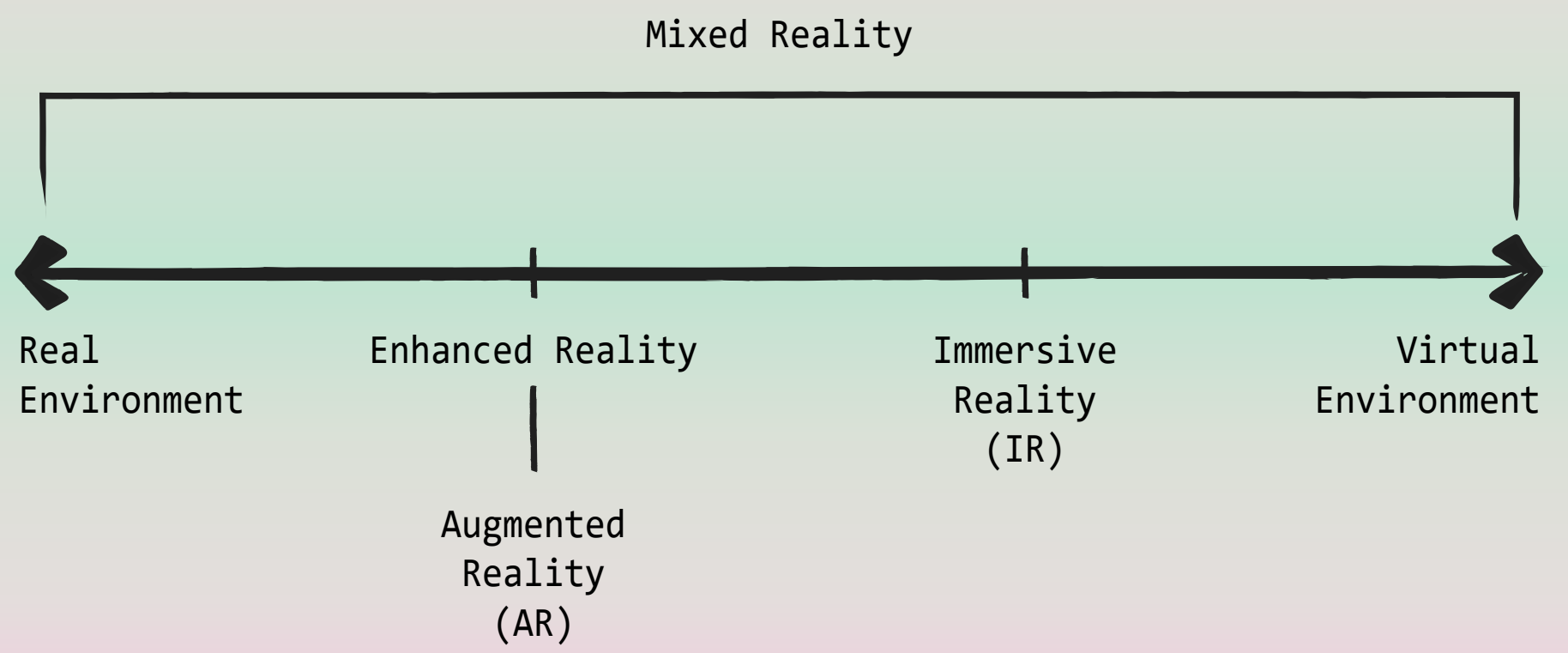
Now that the Medium has been identified as a focal point, the following investigates three types of mediums that allow for a levitation between physical reality and virtual reality:

1. Augmented Reality
2. Immersive Reality
3. Mixed Reality

Placing them on the *Reality-Virtuality Continuum* allows us to understand the degree of levitation achieved by each medium.



Reality - Virtuality Continuum



Mixed Reality

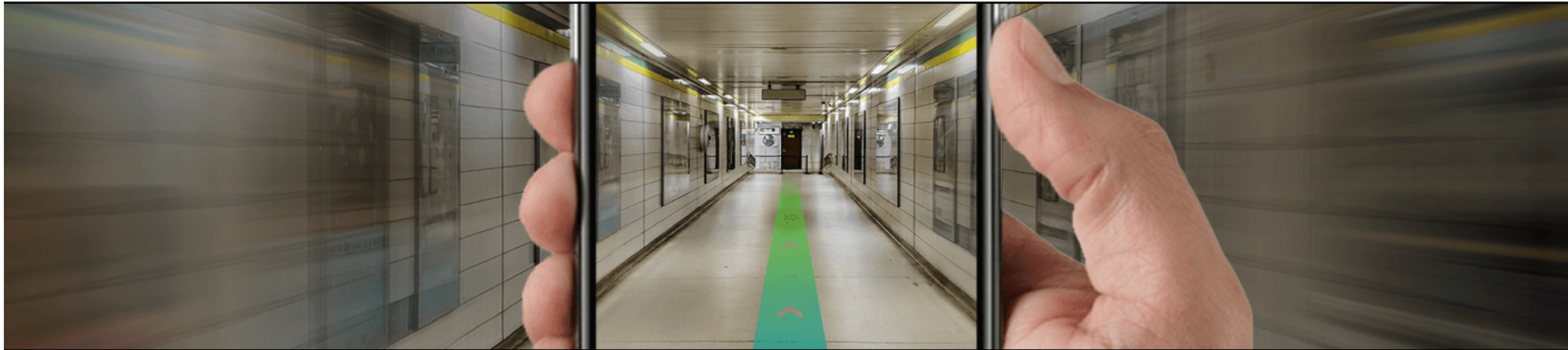
Immersive Reality

Augmented Reality

1

Augmented Reality

the use of technology to overlay digital information i.e. computer generated graphics, images, or a set of interactive data
↳ enhances the perception of space



/smartphone with a camera and an AR app_
software that calculates and projects computer-generated visuals

Apple
ARKit



Google
ARCore



2

Immersive Reality

a simulated and immersive experience that removes the real world and projects a 100% 3-D virtual environment into users sight
↳ manipulates the perception of space



/a headset projecting you into a simulation via a viewfinder_
lenses inside a viewport on headset + mounted device where the experience is computed



3

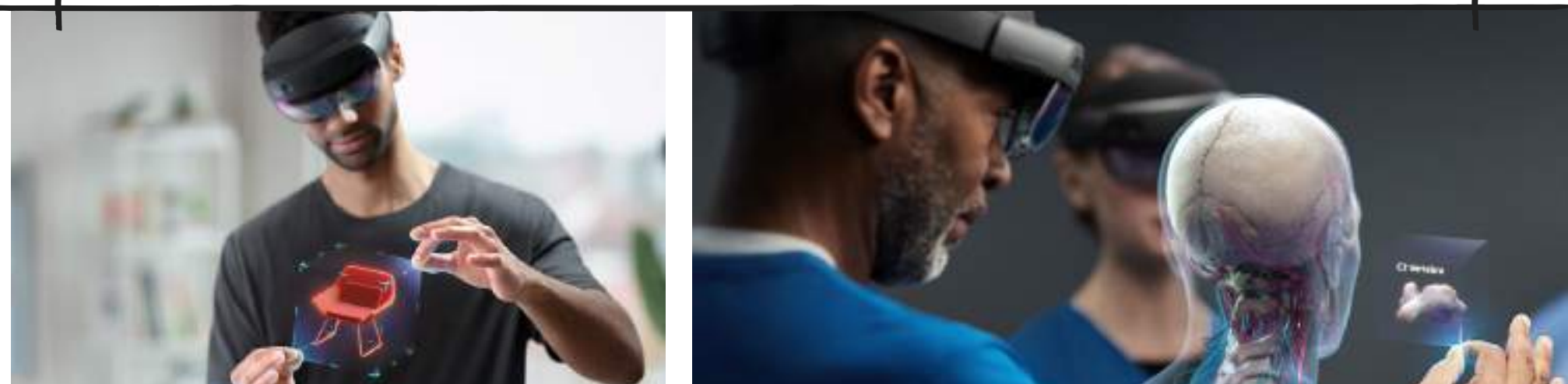
Mixed Reality

a hybrid of VR and AR by mixing real and virtual environments. It uses a headset like VR and projects visuals onto the environment

↳ interactive perception of space



/realistic rendering _
user interaction with the immersive content using the natural body and finger gestures



/Microsoft HoloLens holographic technology - physical interaction with holograms 102

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The Correlation

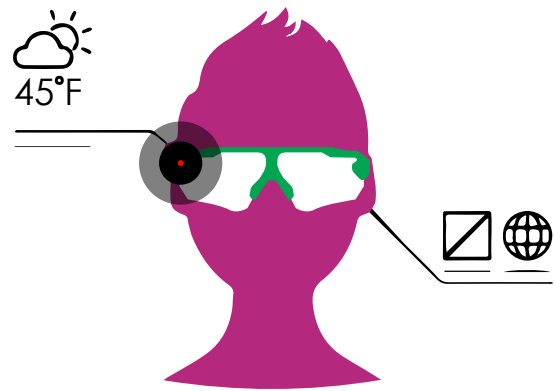
Senses are a focal factor in human experiences/human interface with space. Each of the three mediums provides a limited extent of sensory stimulation, which affects the level of engagement of human psychology with the space and the experience.

Identifying the sensory attributes to each medium provides a design guideline, governing the choice of medium as a way to provide a typology of a controlled experience.

1

Augmented Reality (AR)

Real environment with digital information overlay



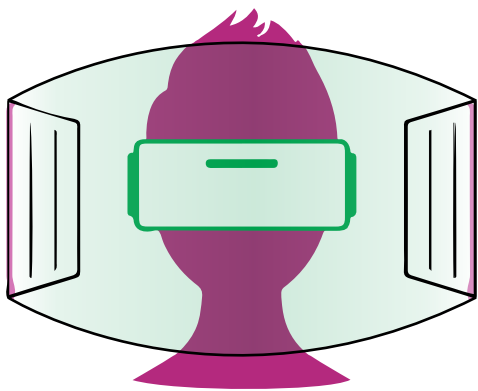
Real world remains central to the experience, enhanced by virtual details



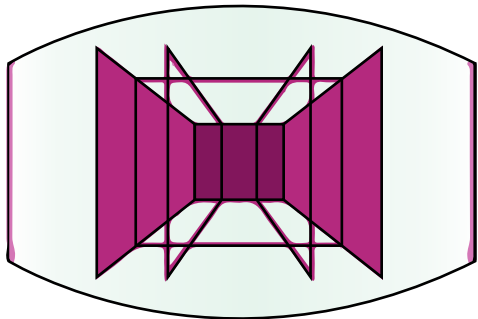
2

Immersive Reality (IR)

Completely digital environment



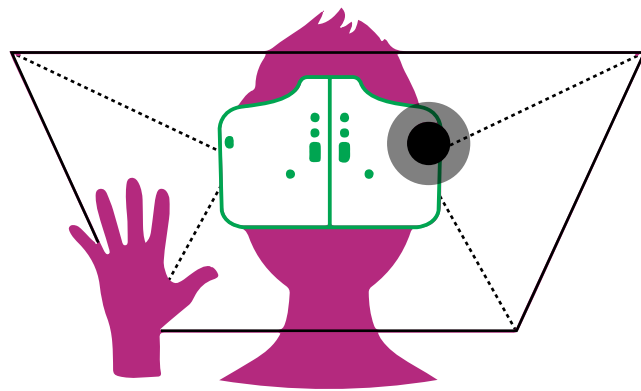
Fully enclosed synthetic experience with no sense of the real world



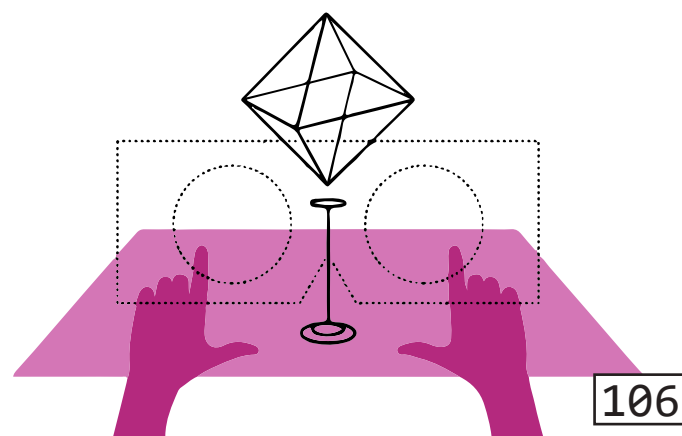
3

Mixed Reality (MR)

Real and digital environments intertwined



Interaction with and manipulation of both the physical and virtual environments



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Physical Perception

/the five senses_

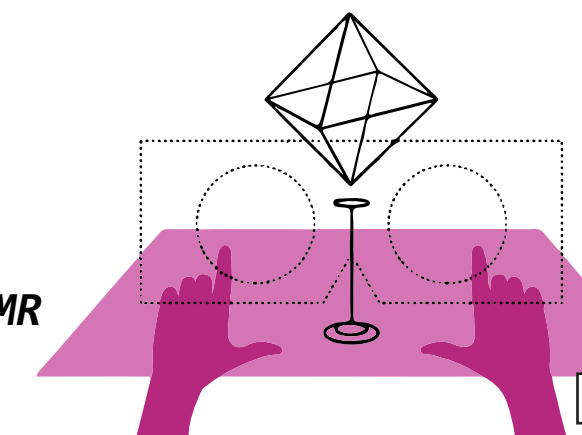
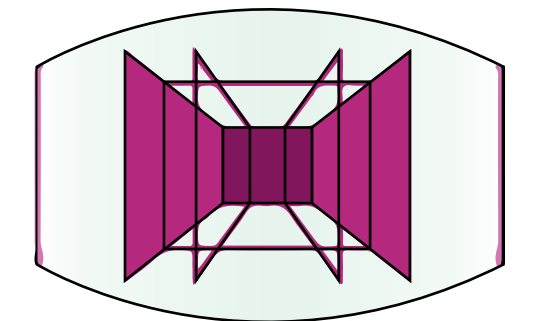
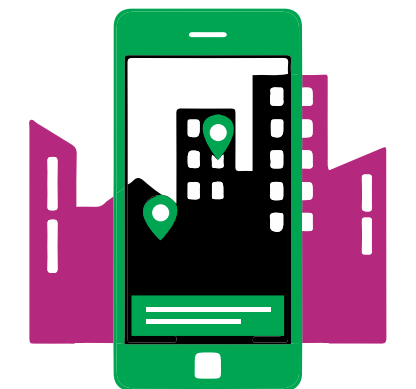


Information architecture

AR

IR

MR



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CONCEPTUAL FRAMEWORK

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The Process

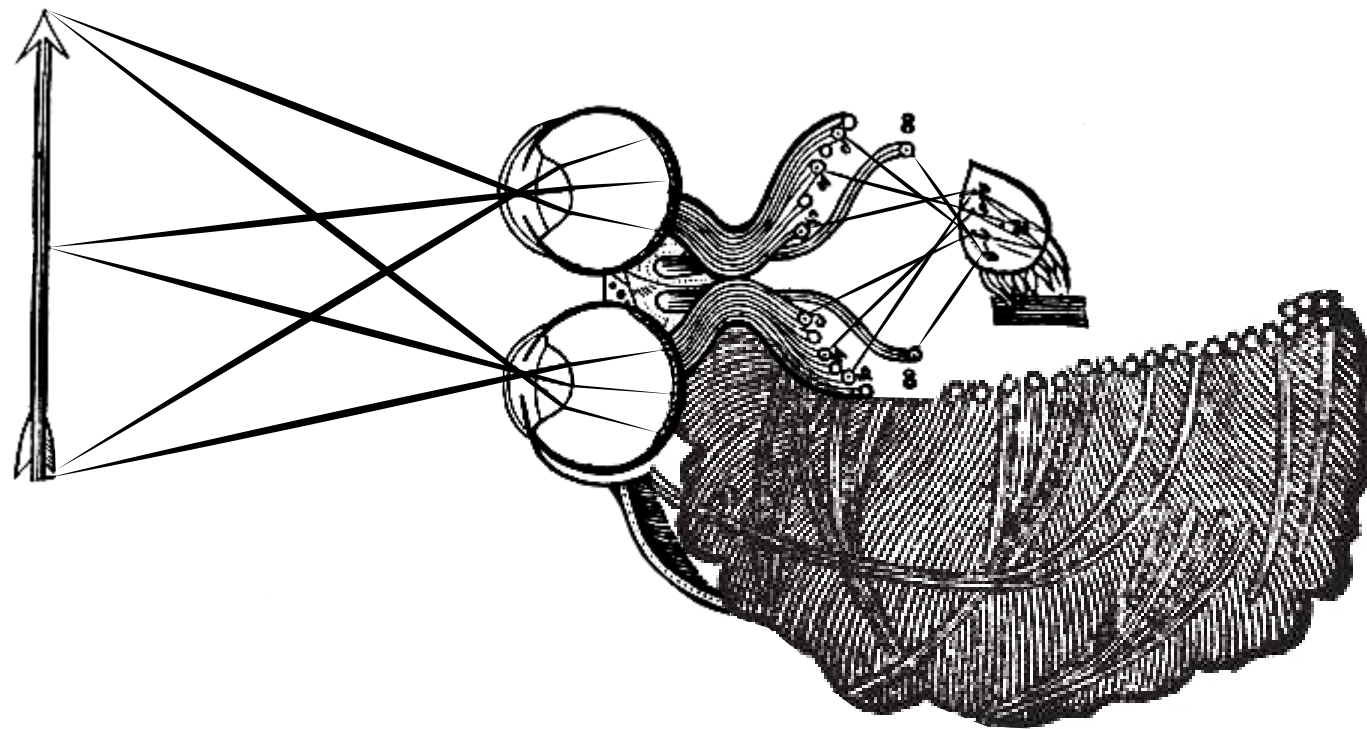
The identified point of interest is the _____ evolution of technology to allow complex experiences. (WHAT) can the virtual tools revive spatially? Levitational spaces _mental images.

The following investigates the concept of mental imagery, its conditions (absence of external stimuli), and its three typologies. The brain is at first understood in its biological composition, and is then looked at as a machine that scans images from the physical and translates it into imagery compiled into a collage in the brain.

Mental Imagery

/seeing in the Mind's Eye
Mind's Eye
Mind's Eye

/a quasi-perceptual visualization experience that occurs in the absence of the appropriate external stimuli



/visual perception model: Descartes' *Treatise of Man* (1664)
re-inverted mental image on the surface of the pineal gland

The Brain at Rest

I ask the following question:

How can one delve into his/her own world if the world they exist in is too stimulating for their attention to be driven elsewhere?

The answer is simple: *One can't.*

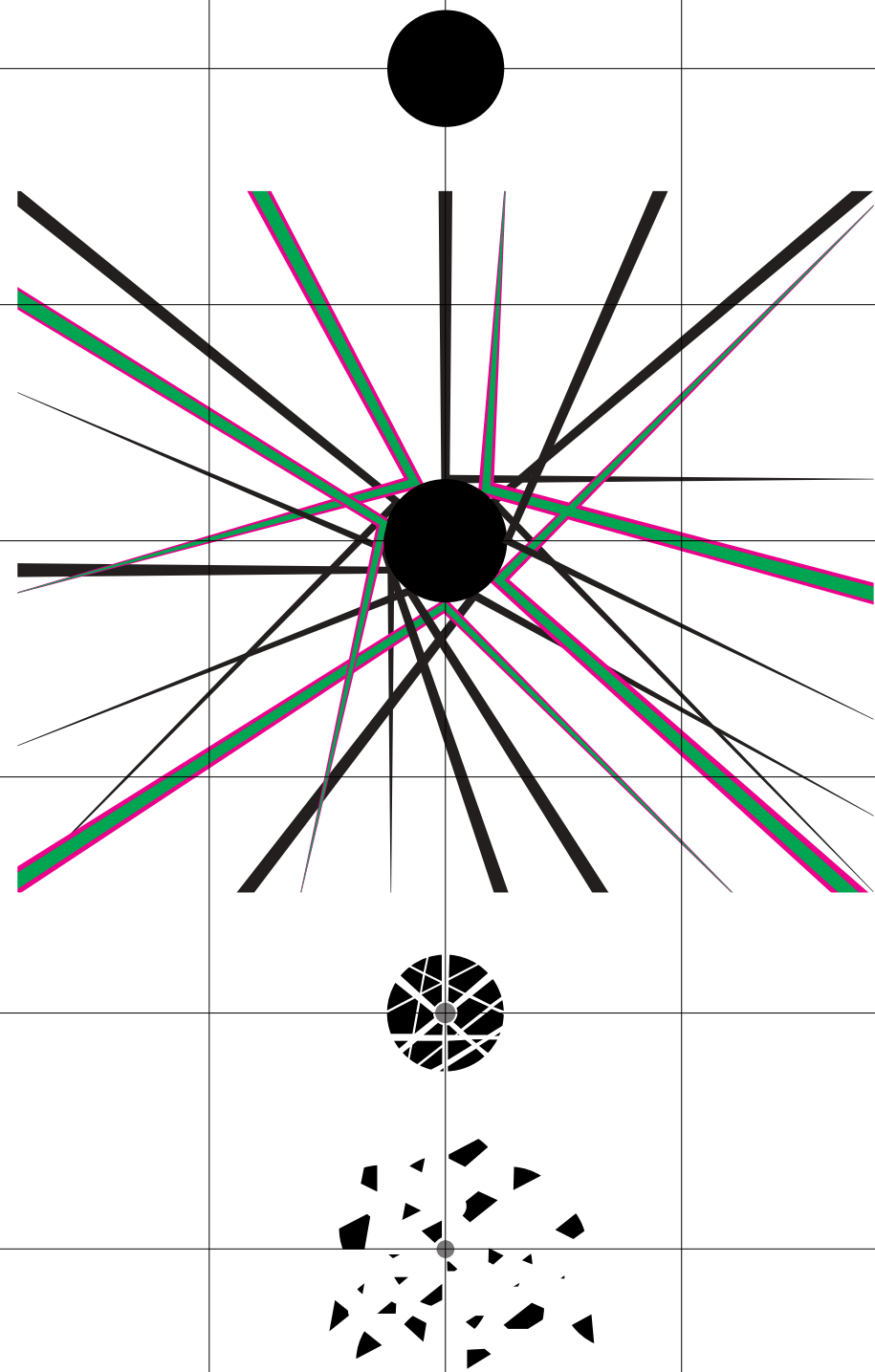
For the brain to be able to levitate, it requires an environment that does not impose distractions. In abstract terms, external stimuli -upon impact with the brain- lead to dispersion hence the interruption of the formation of mental imagery.

human brain

external stimuli

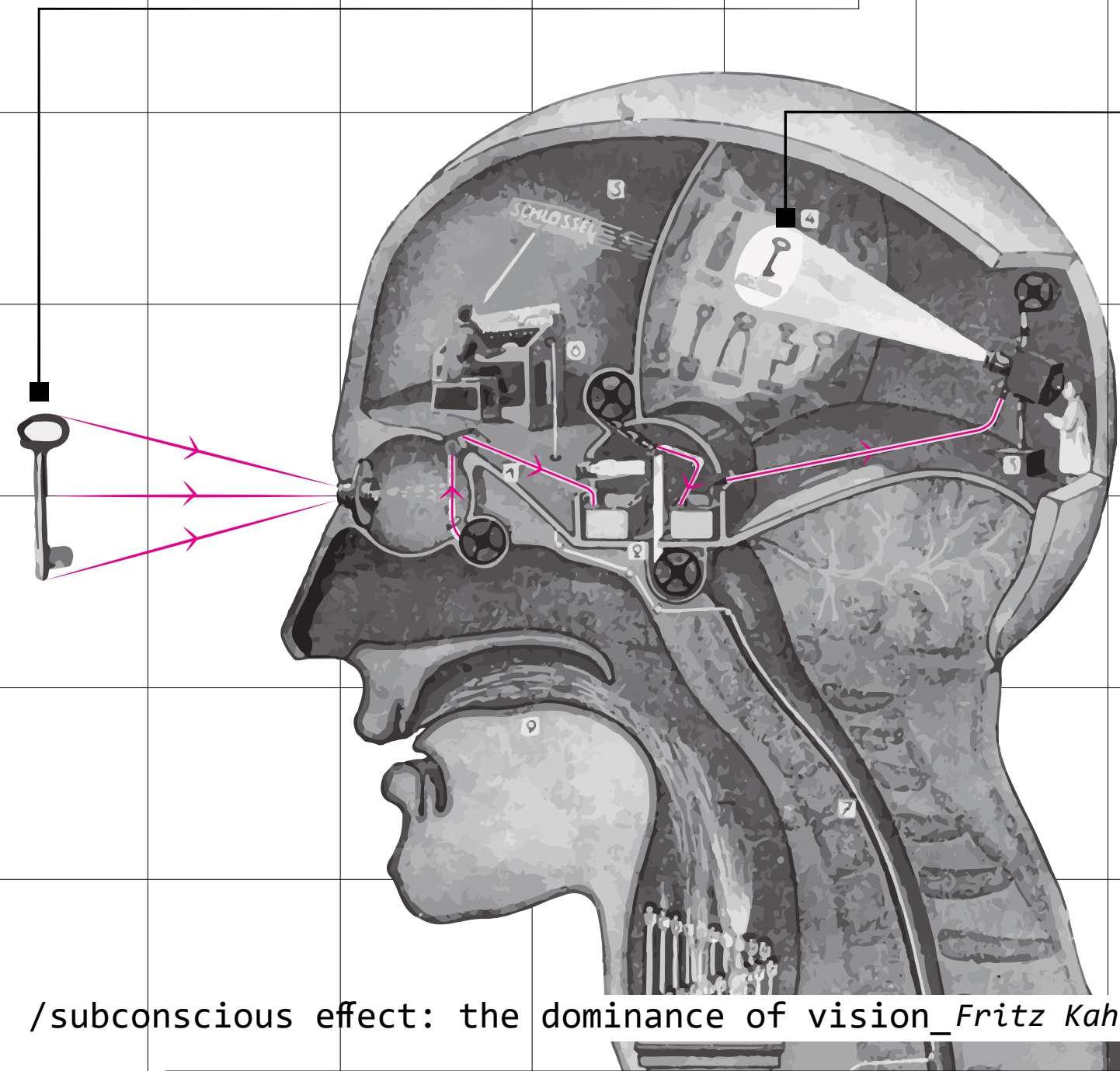
impact

mental dispersion



The Brain as a Machine_

Transforming visual perception to mental imagery



/subconscious effect: the dominance of vision_ Fritz Kahn(1922)

Mental Compartmentalization_

Inside the temporal lobe of the brain, the hippocampus enables us to remember, imagine and dream.

1

2

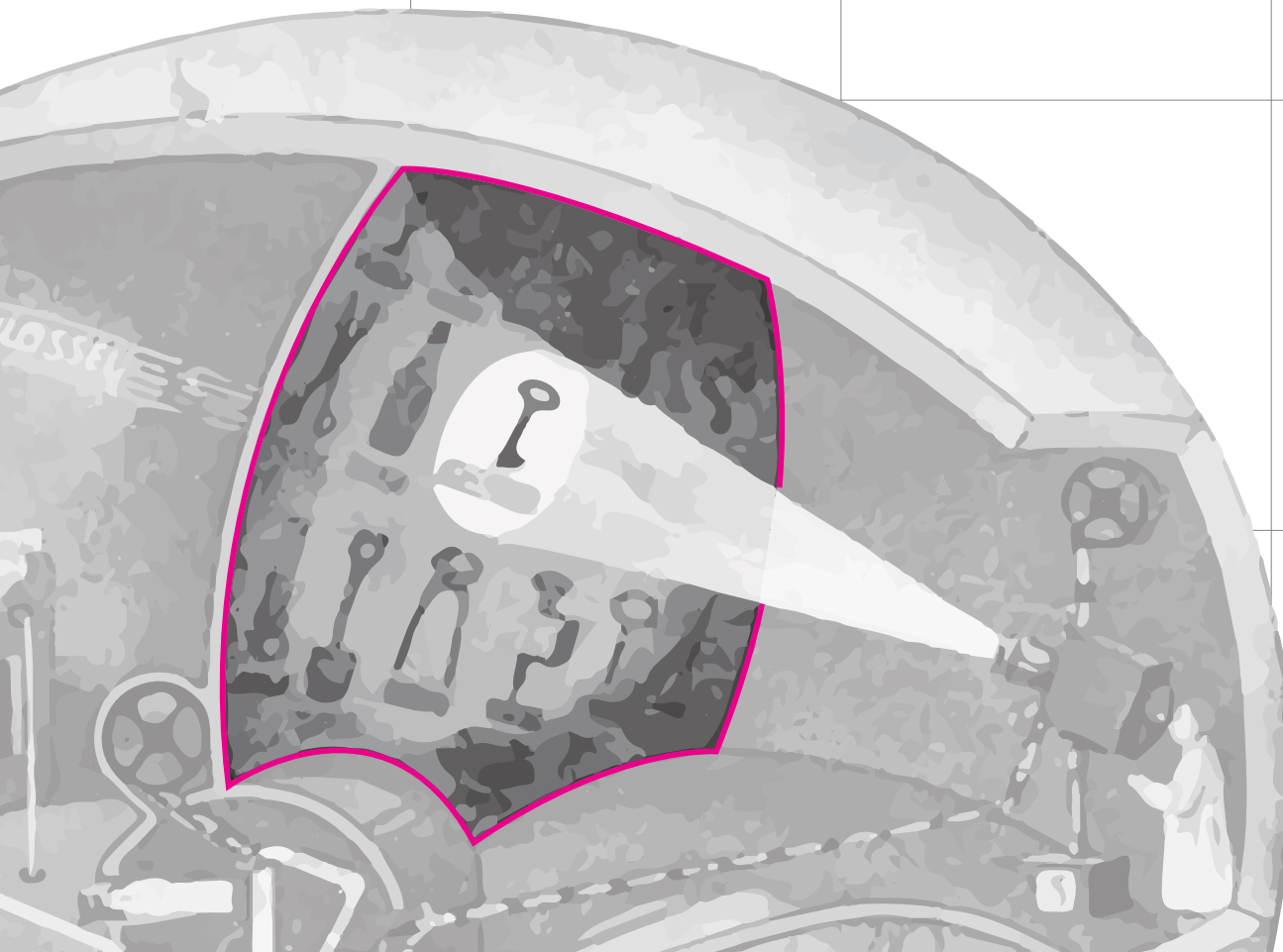
3

Typologies of Mental Imagery

The identified typologies filter into composing the program which is to be translated into information architecture.

The experienced spaces will thus be based on, and engulf the user (myself) into three modes of mental experiences.

The brain, beyond its biological composition, can be seen as a machine into which perceptual information are plugged in like a picture on the wall. The brain is compartmentalized, each zone storing a mental image. The result is a collage in the brain.



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The Correlation

Our brain captures data from the physical environment through sensory stimuli; our senses trigger the brain to notice, react to, and store information. Our senses react to the stimuli and trigger emotions and reactions. Revisiting information in the brain demands a prerequisite: *The activation of senses.*

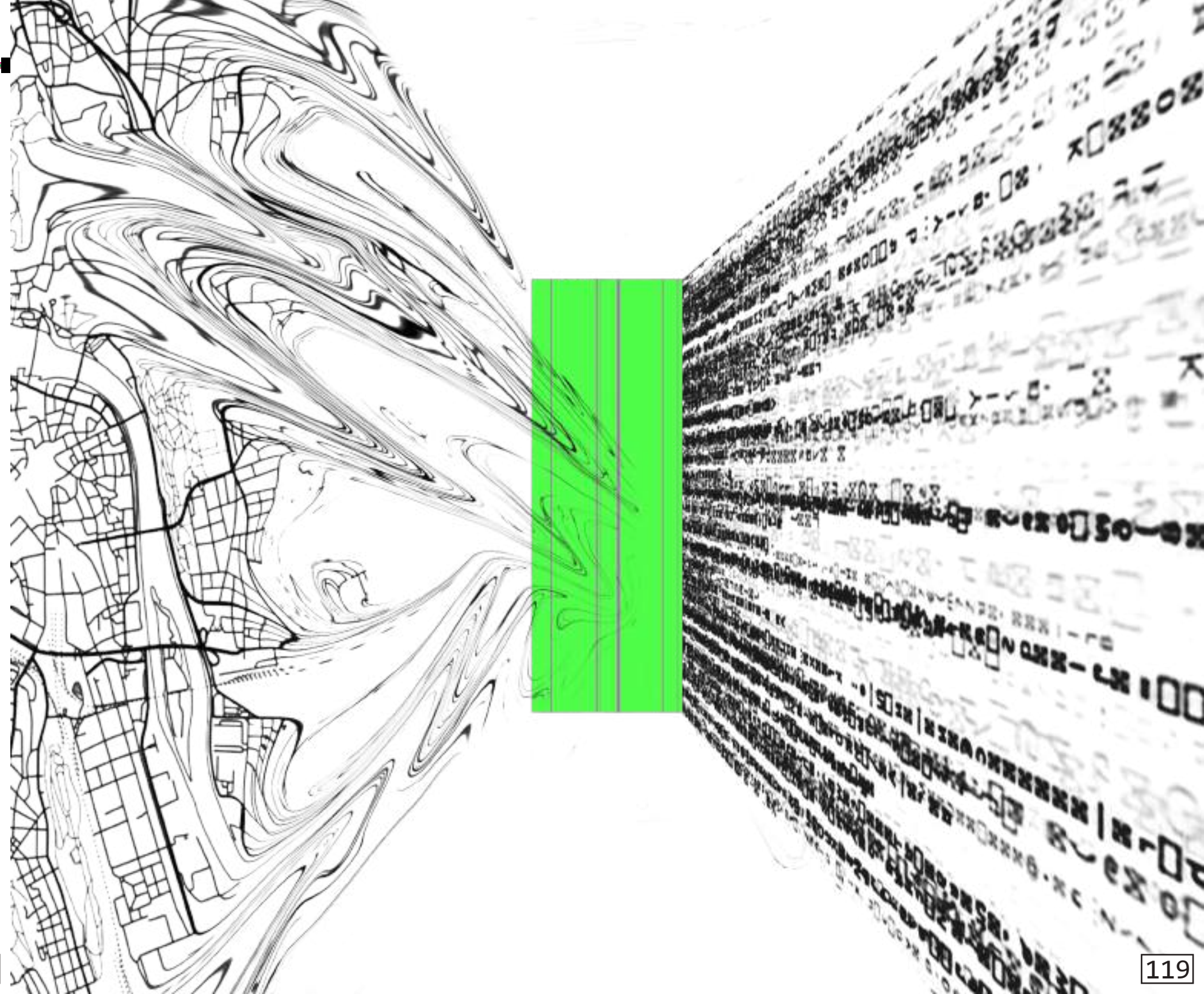
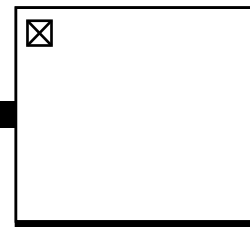
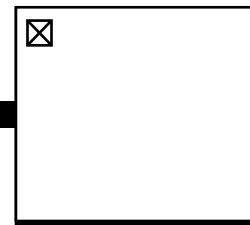
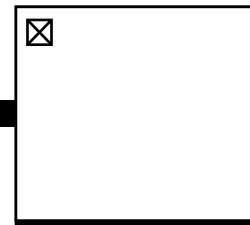
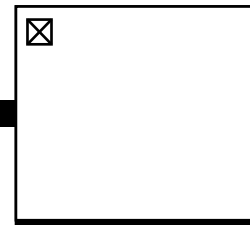
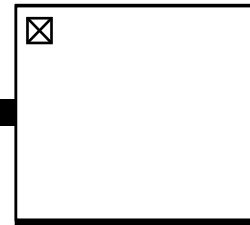
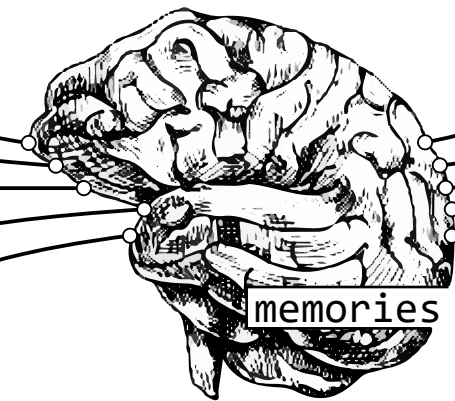
“Back when I was 12, I absorbed the aroma of my mother’s orange cake. Now I’m 22, and whenever I smell orange cake in coffee shops, I remember that of my mother.”

Physical Perception

Mental Imagery

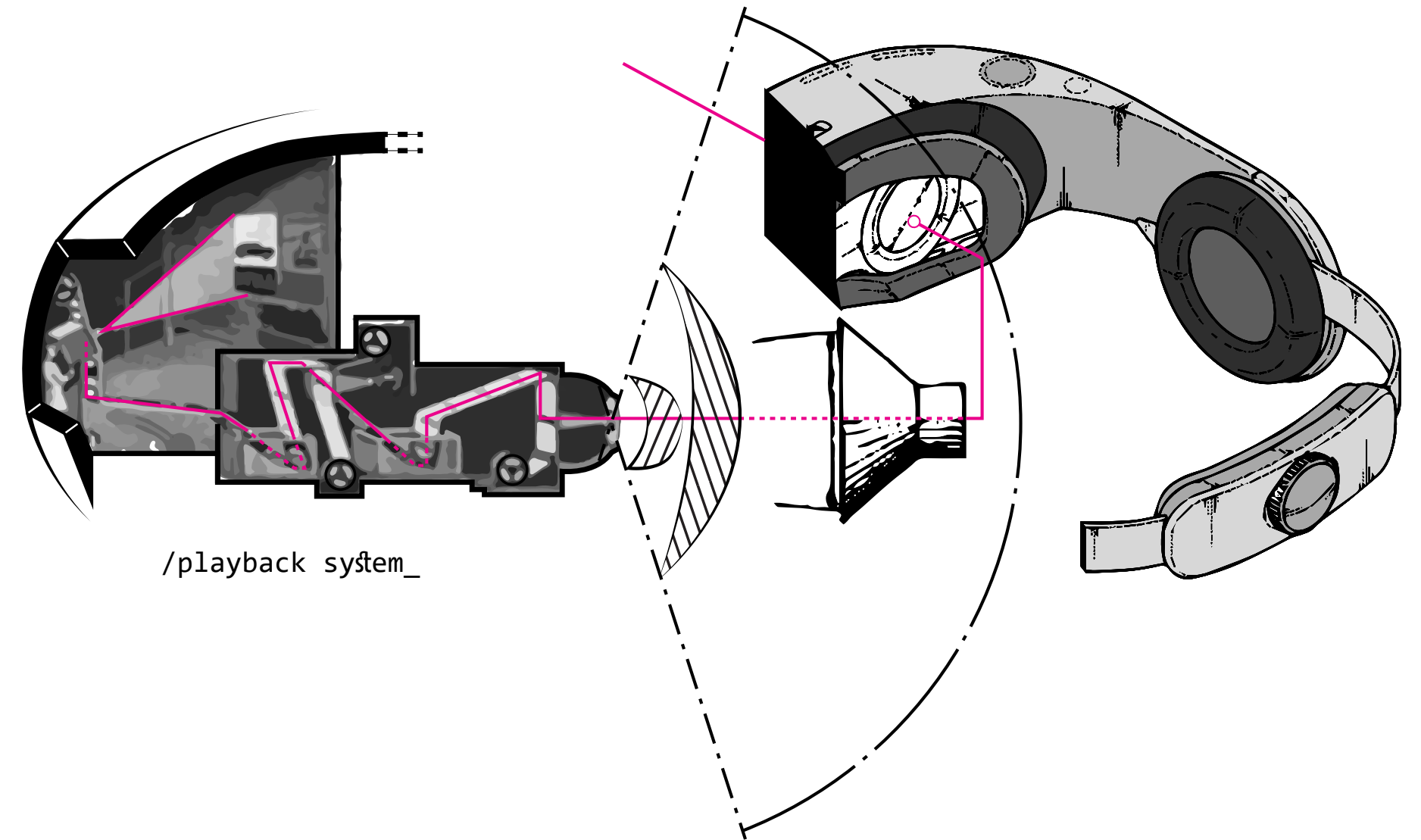
Information architecture

/the five senses_



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From Research to Application

Now that the concept of mental imagery is comprehended, it is intersected with the mediums of virtual reality (VR).

We often experience mental imagery as an intangible visualization in the brain. The project hires VR mediums as tools to extract mental imagery from the psych and manifest them into a visible and tangible experience.

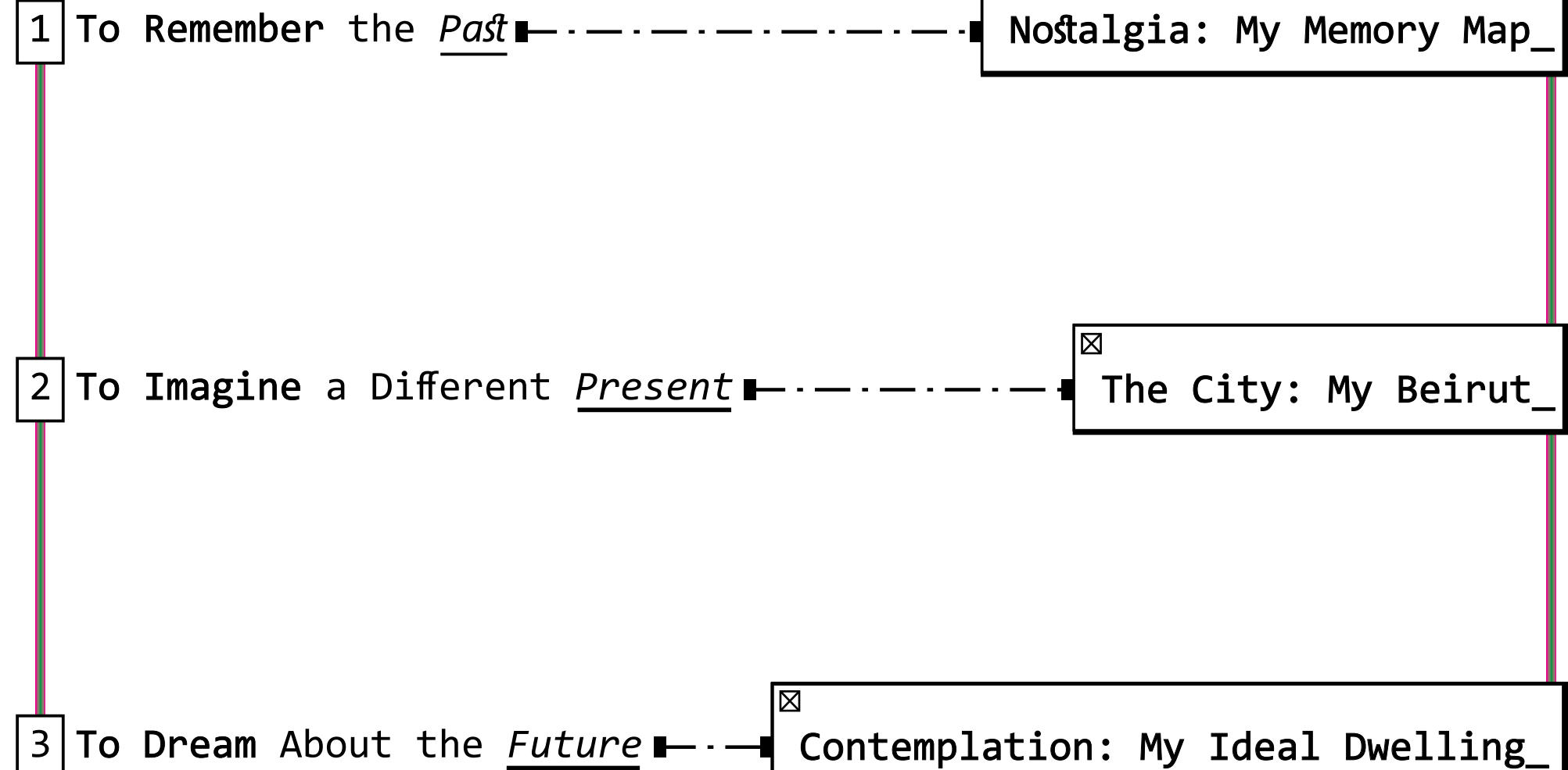
The Program

As previously identified, the human brain allows us to generate three kinds of mental imagery through the acts of remembering, imagining, and dreaming. Each of these mental activities are placed in juxtaposition with time: past, present, and future accordingly.

Taking myself as a case study, I designate a program to each mental activity. Each program is conceptualized by my brain.

Each program is further categorized based on the spectrum of privacy, transitioning from public space to social space to personal space to intimate space, I impose a spatial criteria that governs the formation of the program.

I am not the target of the project, but rather a lab rat onto which the experiment is carried out. Should this experiment succeed, I would have unlocked an unexplored realm where the physical and the virtual can be mediated.

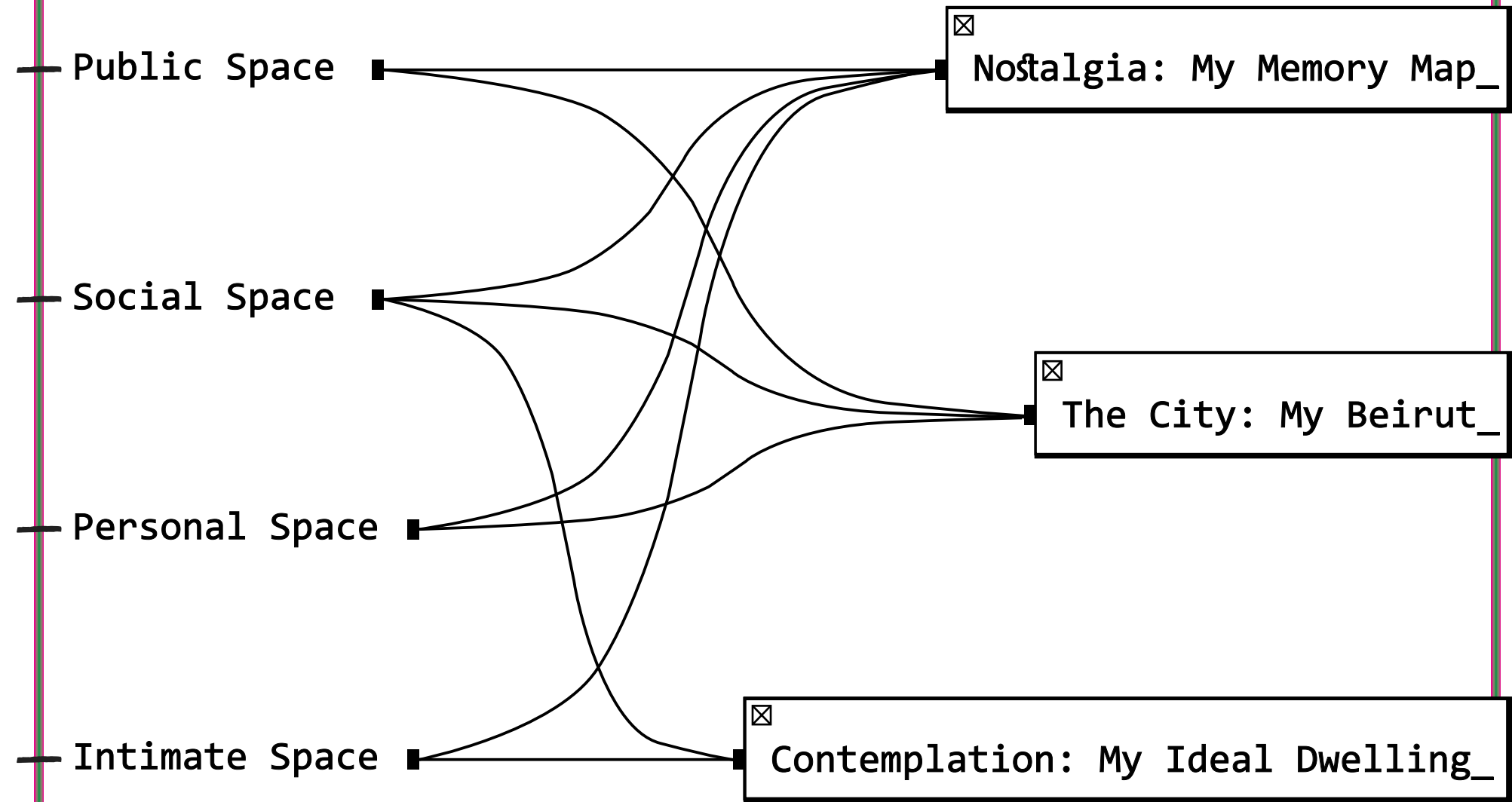


Intimate Space

Personal Space

Social Space

Public Space



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From Research to Application

In order to derive mental information to generate maps of information architecture, I engage in a dialogue with >the algorithm< I feed the algorithm information i.e. descriptions, sensory details, and images. The algorithm processes the information and generates maps.

The outcomes are the plans guiding the spatial manifestation

☒ **Nostalgia: My Memory Map_**

Dialogue /'dʌɪələʊg/

- Close you eyes, relax, and think about your past. Now let's talk about memories. What mental images play in your head when I ask you to look back?
- Um... I don't know where to start.
- Let me guide you through it_____

1 To Remember the Past

☒ **Nostalgia: My Memory Map_**

2 To Imagine a Different Present

☒ **The City: My Beirut_**

3 To Dream About the Future

☒ **Contemplation: My Ideal Dwelling_**

☒ Nostalgia: My Memory Map_

Public Space

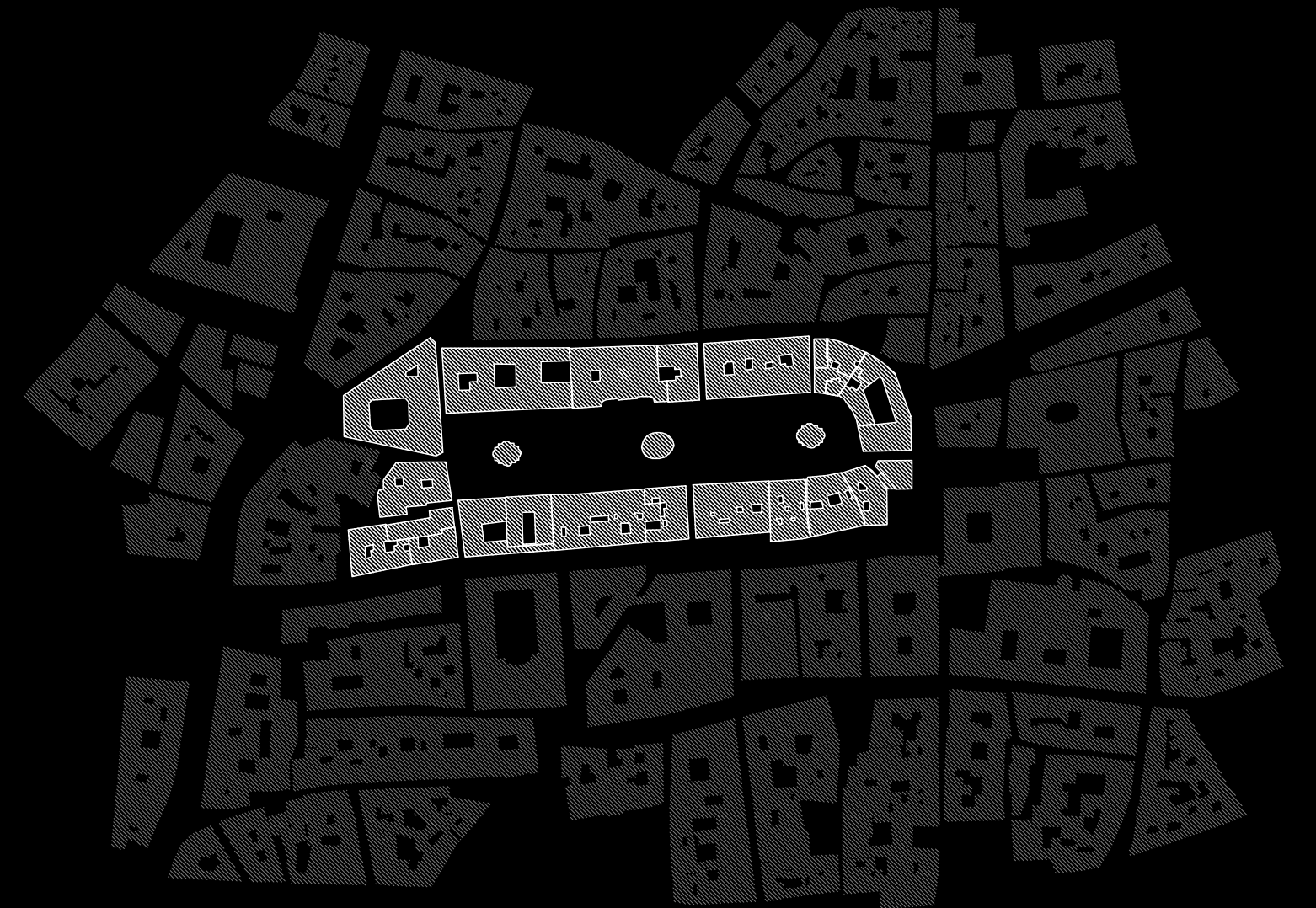
- Walk me through a memory in a public space. What comes to mind?

☒ Nostalgia: My Memory Map_

Public Space

- Walk me through a memory in a public space. What comes to mind?

- May 2017. I went on an academic trip to Rome correlated to an Art History class. We visited *Piazza Navona*.



☒ Nostalgia: My Memory Map_

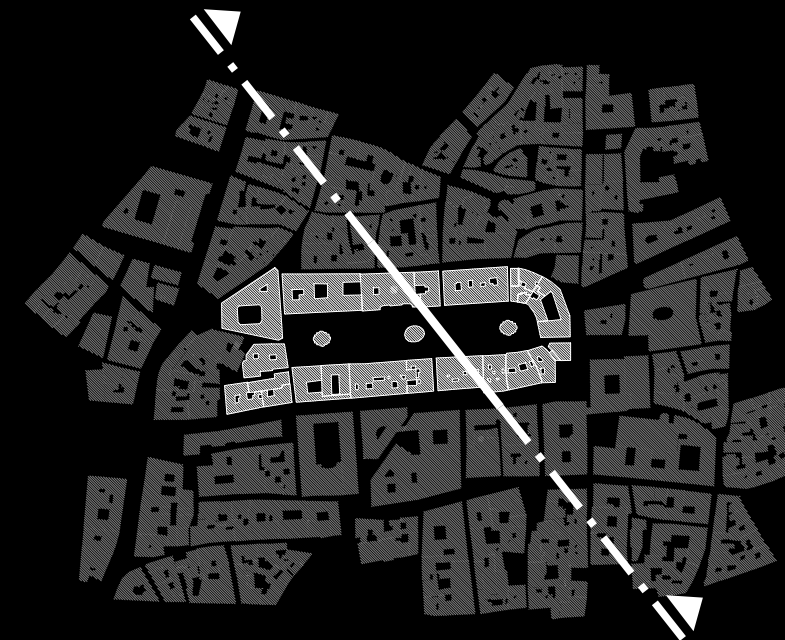
Public Space

- Walk me through a memory in a public space. What comes to mind?
- May 2017. I went on an academic trip to Rome correlated to an Art History class. We visited *Piazza Navona*.
- Tell me what you remember. Try to describe your sensory memories and how you felt in that space.

☒ Nostalgia: My Memory Map_

Public Space

- Walk me through a memory in a public space. What comes to mind?
- May 2017. I went on an academic trip to Rome correlated to an Art History class. We visited *Piazza Navona*.
- Tell me what you remember. Try to describe your sensory memories and how you felt in that space.
- I remember the ambience, looking at the architecture, listening to the water falling and the birds chirping, the people walking and murmuring. The weather was nice, sunny and breezy.



☒ Nostalgia: My Memory Map_

Social Space

- Walk me through a memory in a social space. What comes to mind?

☒ Nostalgia: My Memory Map_

Social Space

- Walk me through a memory in a social space. What comes to mind?

- February 2020. I went on another academic trip to Siwa Oasis in Egypt as part of the Design studio.



☒ Nostalgia: My Memory Map_

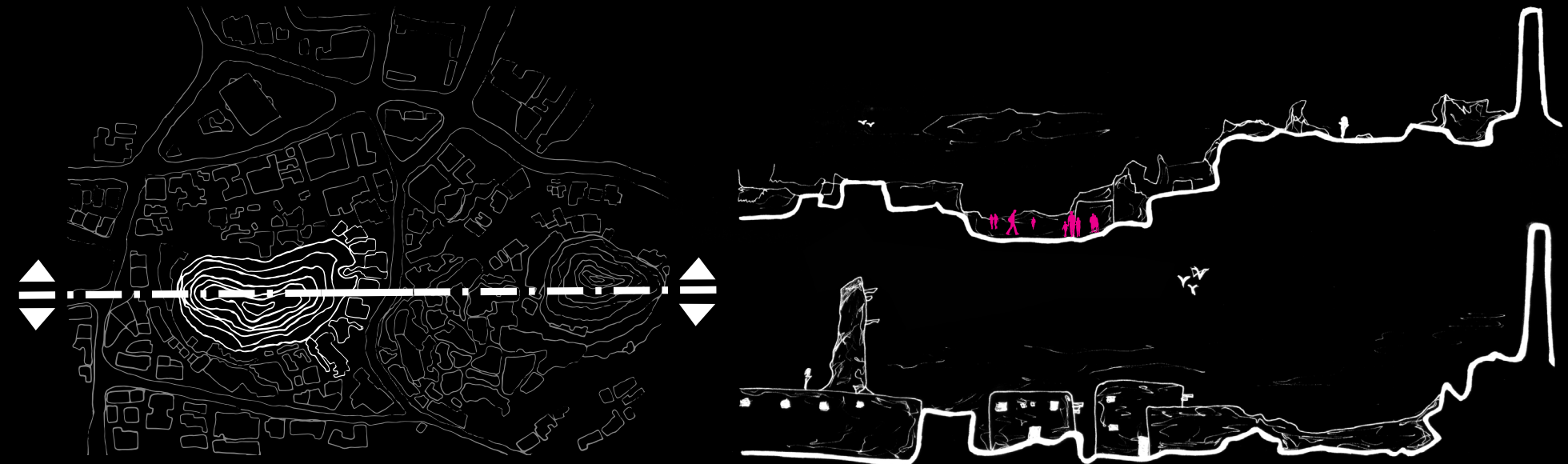
Social Space

- Walk me through a memory in a social space. What comes to mind?
- February 2020. I went on another academic trip to Siwa Oasis in Egypt as part of the Design studio.
- Tell me what you remember. Try to describe your sensory memories and how you felt in that space.

☒ Nostalgia: My Memory Map_

Social Space

- Walk me through a memory in a social space. What comes to mind?
- February 2020. I went on another academic trip to Siwa Oasis in Egypt as part of the Design studio.
- Tell me what you remember. Try to describe your sensory memories and how you felt in that space.
- I remember the center of Old Shali. My friends and I would go there to observe the architecture, discuss, sketch... The locals walk by us in the heat of day.



☒ Nostalgia: My Memory Map_

Personal Space

- Walk me through a memory in a personal space. What comes to mind?

☒ Nostalgia: My Memory Map_

Personal Space

- Walk me through a memory in a personal space. What comes to mind?

- I've been living in this house in Tyre with my parents since I was 12. I share my bedroom with my twin sister. I've never had my own personal space. The 7th floor is abandoned, semi-constructed, open. I made it my personal space.



☒ Nostalgia: My Memory Map_

Personal Space

- Walk me through a memory in a personal space. What comes to mind?
- I've been living in this house in Tyre with my parents since I was 12. I share my bedroom with my twin sister. I've never had my own personal space. The 7th floor is abandoned, semi-constructed, open. I made it my personal space.
- Tell me what you remember. Try to describe your sensory memories and how you felt in that space.

☒ Nostalgia: My Memory Map_

Personal Space

- Walk me through a memory in a personal space. What comes to mind?
- I've been living in this house in Tyre with my parents since I was 12. I share my bedroom with my twin sister. I've never had my own personal space. The 7th floor is abandoned, semi-constructed, open. I made it my personal space.
- Tell me what you remember. Try to describe your sensory memories and how you felt in that space.
- I go up to think, look at the view of the city, the trees. I see and hear the birds fly around and across the space.



☒ Nostalgia: My Memory Map_

Intimate Space

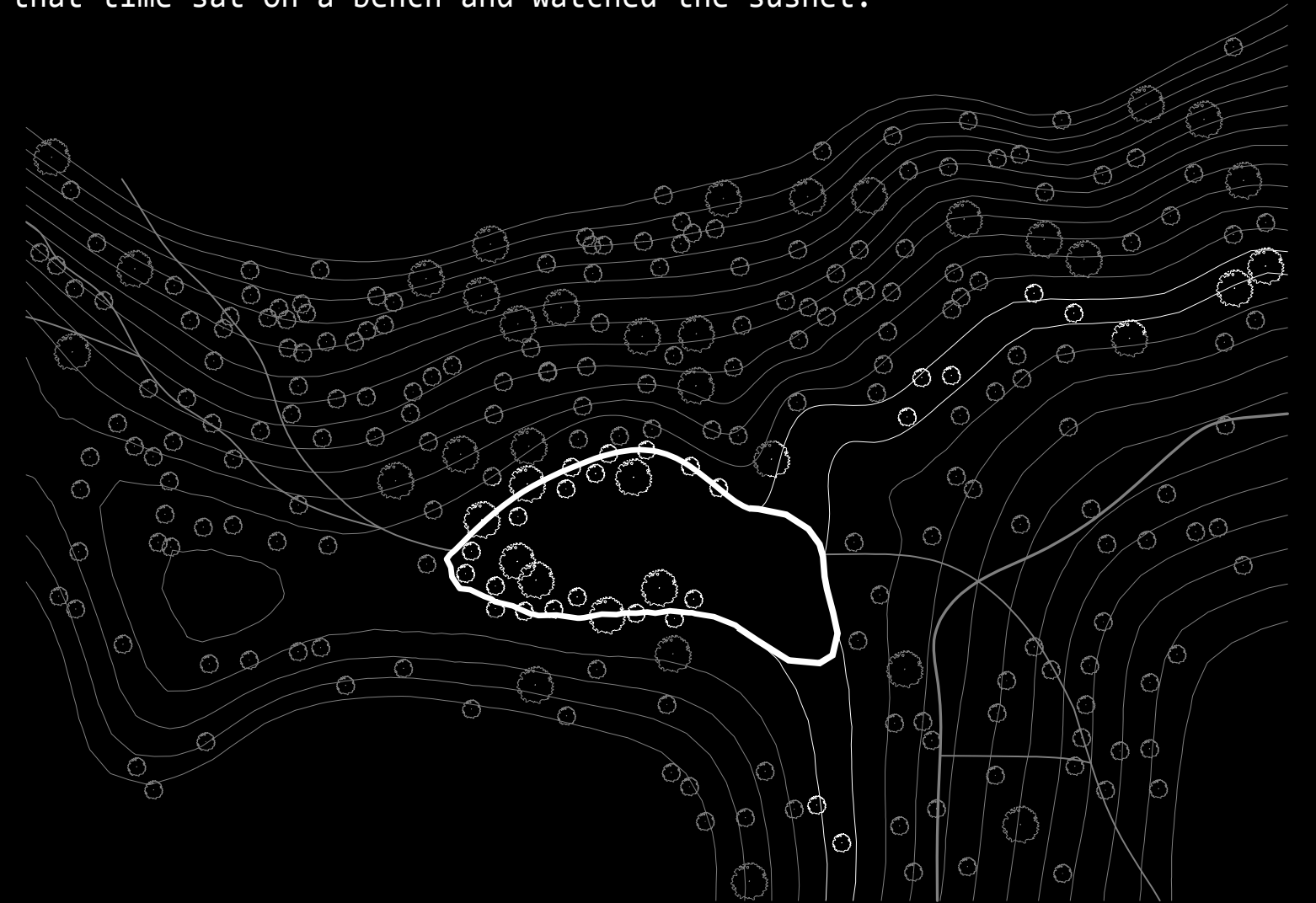
- Walk me through a memory in an intimate` space. What comes to mind?

☒ Nostalgia: My Memory Map_

Intimate Space

- Walk me through a memory in an intimate space. What comes to mind?

- This one's a faded memory. I went camping in Deir El Harf. Me and my boyfriend at that time sat on a bench and watched the sunset.



Intimate Space

- Walk me through a memory in an intimate space. What comes to mind?
- This one's a faded memory. I went camping in Deir El Harf. Me and my boyfriend at that time sat on a bench and watched the sunset.
- Tell me what you remember. Try to describe your sensory memories and how you felt in that space.

Intimate Space

- Walk me through a memory in an intimate space. What comes to mind?
- This one's a faded memory. I went camping in Deir El Harf. Me and my boyfriend at that time sat on a bench and watched the sunset.
- Tell me what you remember. Try to describe your sensory memories and how you felt in that space.
- We spent our time gazing out at the forest. I think it was Spring. It was breezy and the birds were chirping all day



Loading...
Generating Memory Map

☒ Nostalgia: My Memory Map_

☒ Immersive Reality



☒ **The City: My Beirut_**

Dialogue /'dʌɪələʊg/

- Now I want you to channel your imagination. The city is never the same for us all. Each of us experience the city differently. A city is a thousand cities, and I want you to show me yours.
- I'll tell you about My Beirut_

1 To Remember the Past

☒ Nostalgia: My Memory Map_

2 To Imagine a Different Present

☒ **The City: My Beirut_**

3 To Dream About the Future

☒ Contemplation: My Ideal Dwelling_

☒ The City: My Beirut_

Public Space

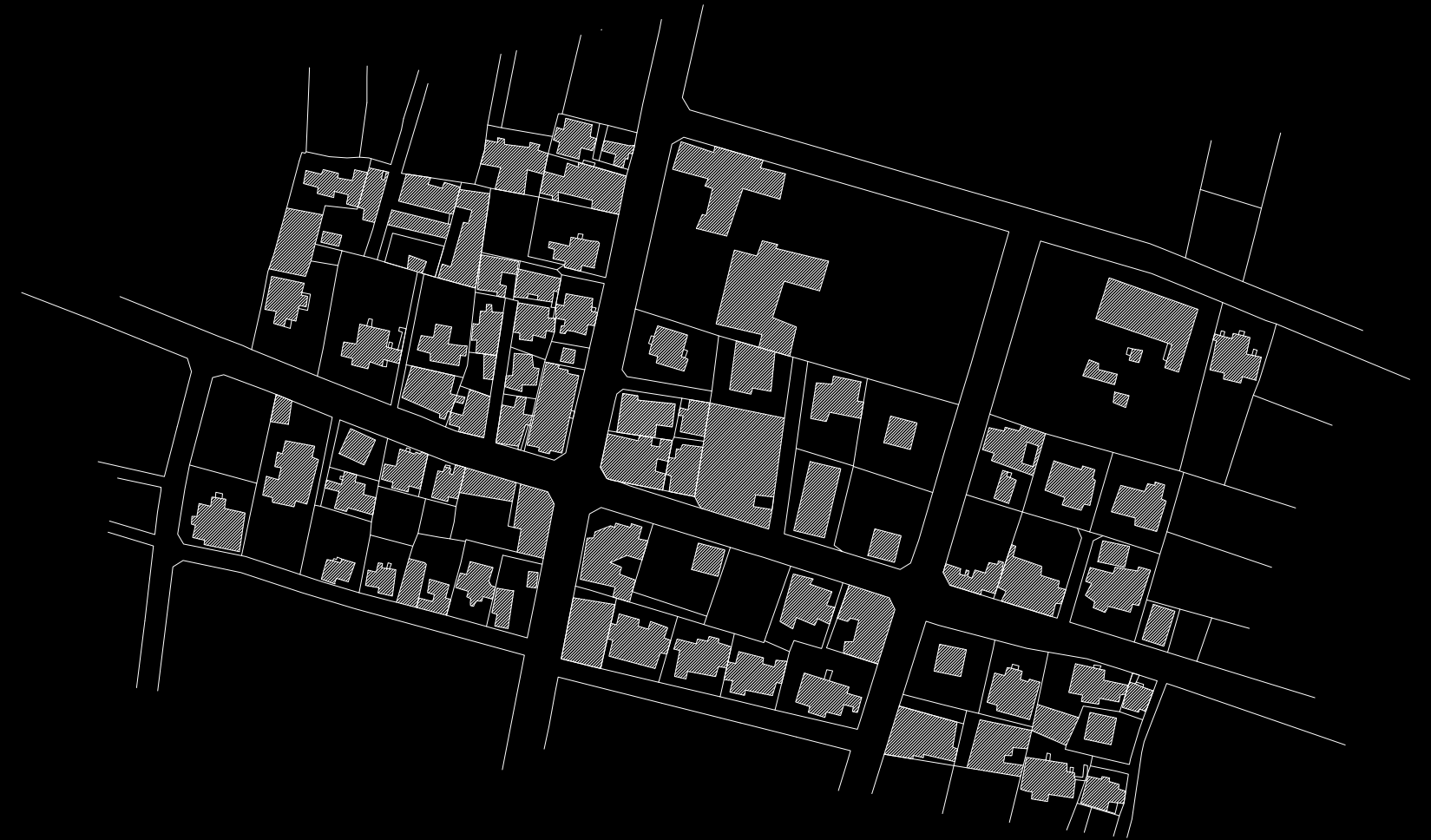
- Since the port explosion, Armenia Street in Mar Mikhael has been the most public space I've engaged with. I took part in community projects there. I know it like the back of my hand by now.



☒ The City: My Beirut_

Social Space

- Not many Beirutis know this place, which is why I love it. Raseef Beirut is a hidden coffee shop by day and pub by night in Hamra. Takes me a 10 minute walk to get there.



Personal Space

- I moved to Hamra 5 years ago when I got into AUB. My personal space in the city is the studio apartment I live in with my sister.



Generating City Map

☒ The City: My Beirut_

☒ *Augmented Reality*



☒ **Contemplation: My Ideal Dwelling_**

Dialogue /'dʌɪələʊg/

- We spoke about the places you've been to in the past, places that are part of your present. Now let's talk about the future.

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.

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Dreams are not only those we experience in our sleep. They are also ideas we create in our head.

.

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.

Translate to me your mental image about your ideal dwelling.

1 To Remember the Past

☒ Nostalgia: My Memory Map_

2 To Imagine a Different Present

☒ The City: My Beirut_

3 To Dream About the Future

☒ **Contemplation: My Ideal Dwelling_**

☒ Contemplation: My Ideal Dwelling_

- What interests me is spatial manipulation by blurring the physical boundaries that enclose a space. In the realm of technology, cinematic production has been incorporating green screens to insert complex landscapes since 1940.



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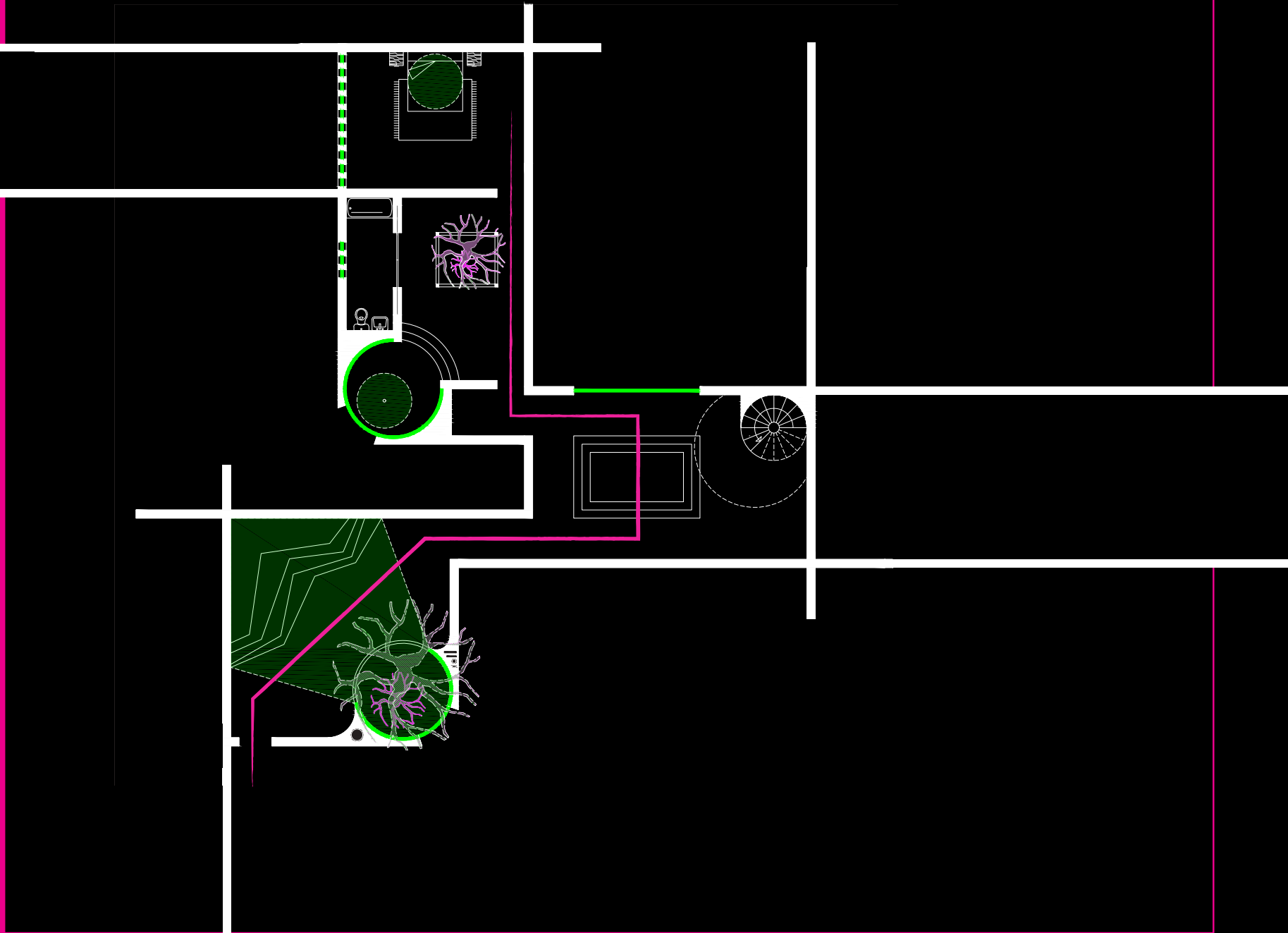


Generating Dwelling Map

My ideal dwelling would be the space where I manipulate boundaries, project sceneries and landscapes.

☒ Contemplation: My Ideal Dwelling_

☒ *Mixed Reality*



CONCEPTUAL FRAMEWORK

- 1 Matrix Dissection
- 2 The Medium: Types of Realities
- 3 The 5 Senses vs. The Medium
- 4 Mental Imagery
- 5 The 5 Senses vs. Mental Imagery
- 6 Program Definition
- 7 Mapping Mental Imagery
- 8 Spatial Manifestation**

From Mapping to Information Architecture

The generated maps are used to spatialize mental imagery. Bearing in mind the **relationship between mental imagery and time**, the three programs of mental imagery are overlaid to generate *time capsules* that are burried in the ground to host the **past**, interface with the ground level to host the **present**, and rise above it to host the **future**.

The architectural manifestation is a walk-through in a virtual and programmable landscape. The four time capsules fall on a grid, and each of them hosts a program typology /public,social,personal,intimate/ and are connected by a continuous start-to-finish pathway. The pathway is surrounded by trees. Each of the capsules acquires vertical circulation through structural tubes that host the information system connected to the underground control panel.

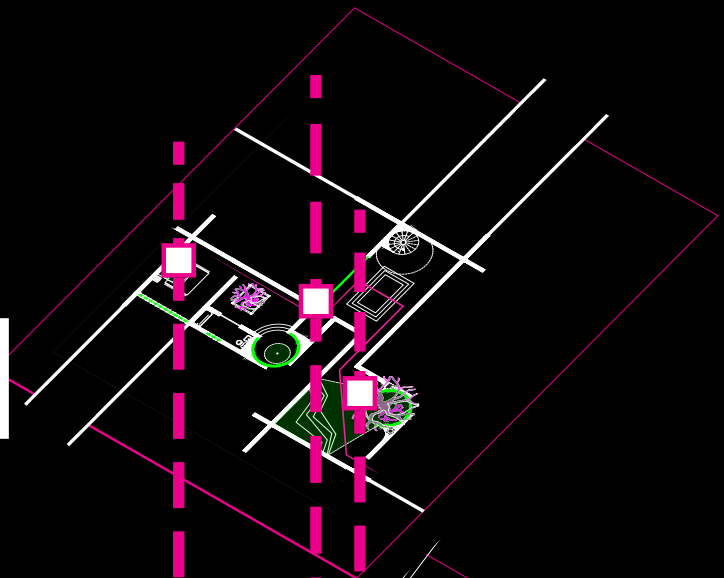
Question to be addressed:

-What is the prupose of building space to host headset-sponsored experiences?

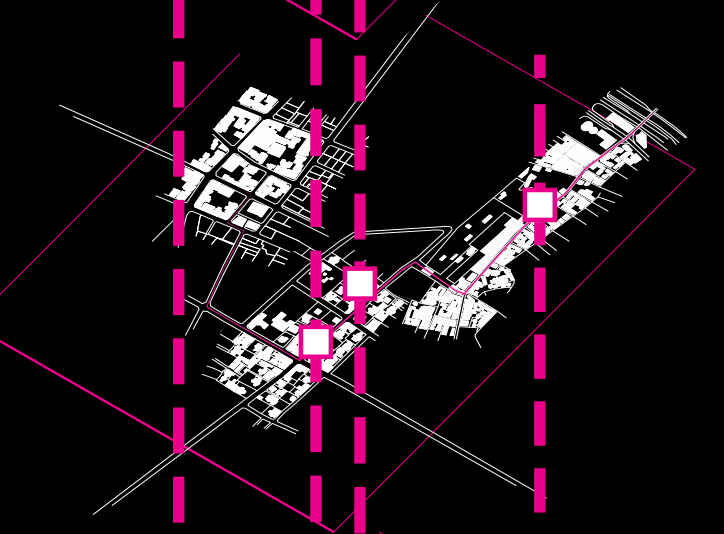
-VR Headsets contain virtual information, scenery, etc. (any information related to mental imagery). However, for the user (myself) to experience a well rounded mental journey, the five senses ought to be governed by eliminating external stimuli: all the sensory-stimulating factors are controlled in relation to the mental image. Aditionally, the spatial layout is designed in accordance with the program it hosts. Some of the spaces are replicas of the original, others are round to host 360 immersive experiences, and others are elongated to host street walks.

/relies on programmatic scale_

☒ Contemplation: My Ideal Dwelling_



☒ The City: My Beirut_

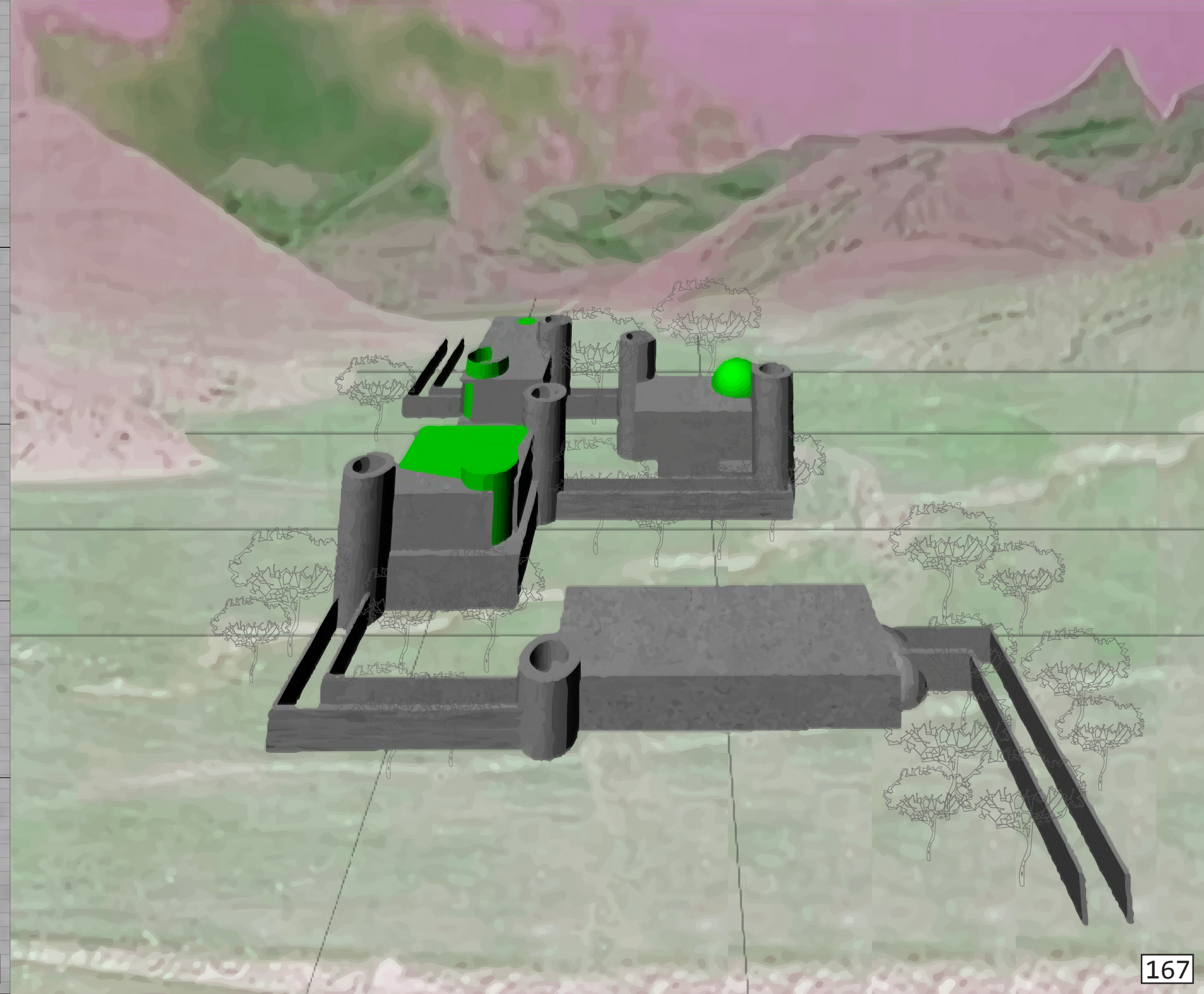
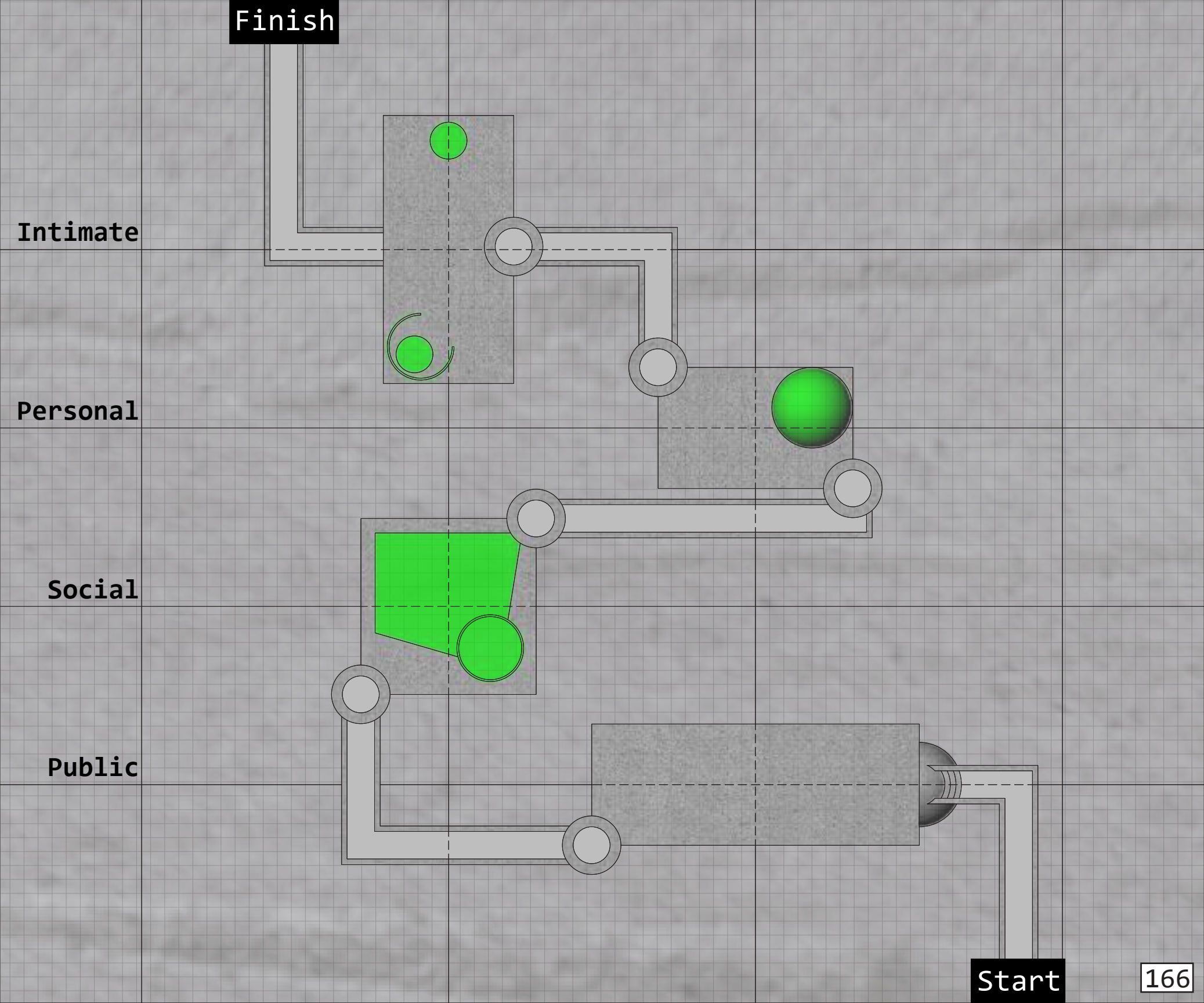


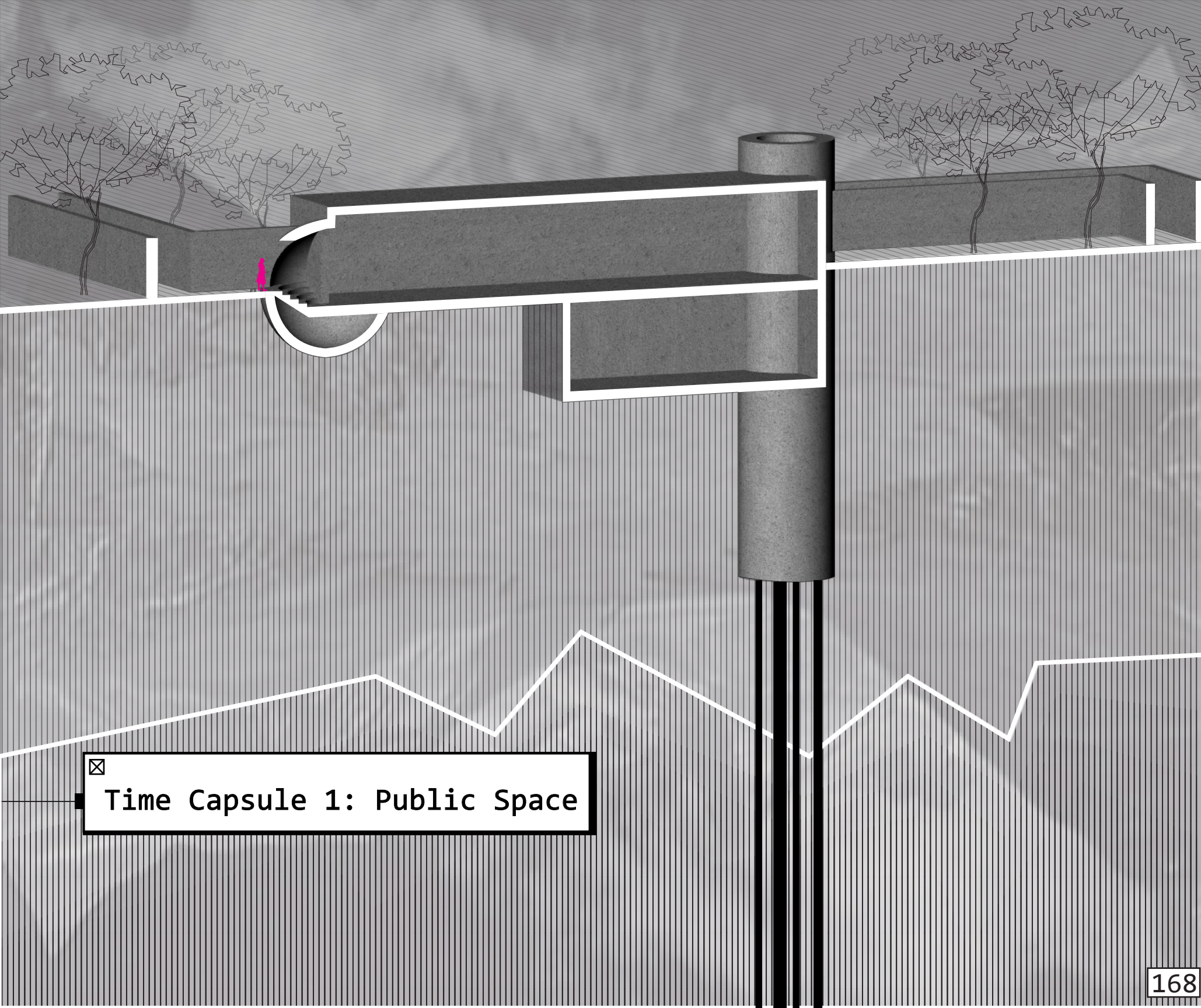
☒ Nostalgia: My Memory Map_



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Generating Time Capsules



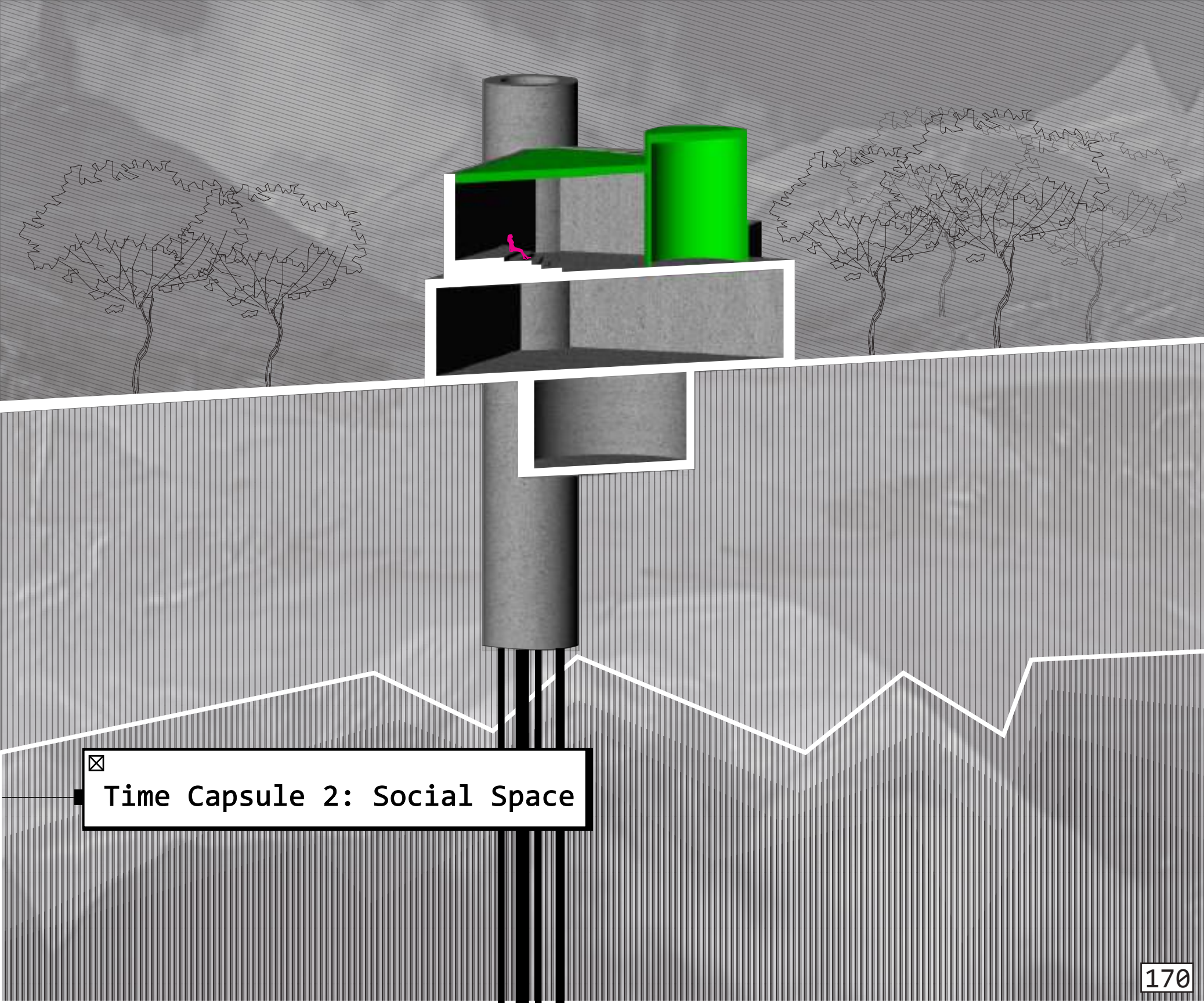




☒ Time Capsule 1: Public Space

Time Capsule 1

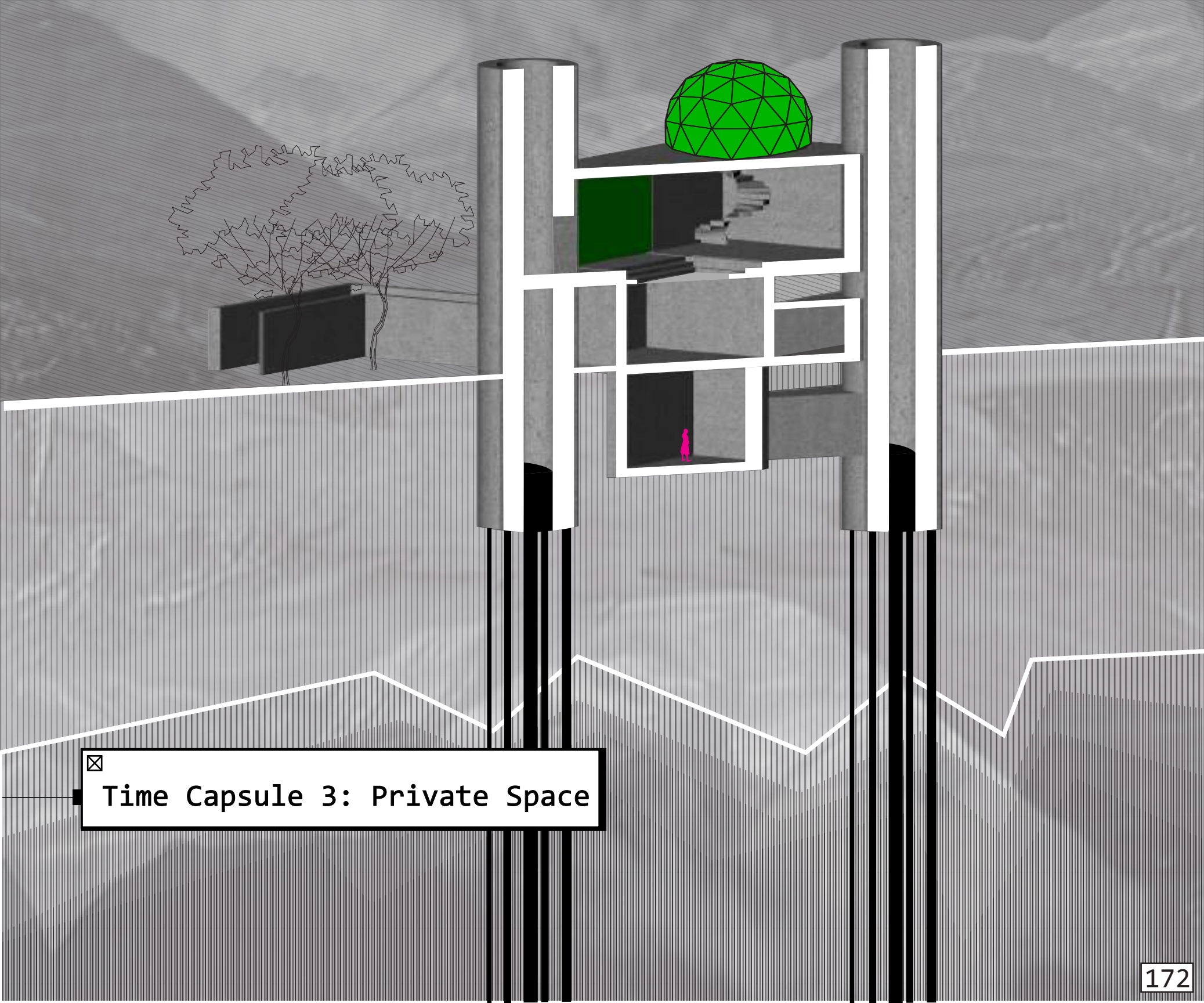
It hosts the urban landscapes of the past /Piazza Navona_ underground and the present /Mar Mikhael_ on the ground level. The enclosed spaces are elongated so that I (the user) feel immersed into the experience as I walk in the simulated streets.



☒ Time Capsule 2: Social Space

Time Capsule 2

It hosts the urban landscape of the past /Siwa oasis_ in a circular space to allow for a 360 immersive experience, my resto-pub social experience in the present /Raseef Beirut_ in a squared room as is the layout of the actual space, and an imagined social space in my brain-simulated future dwelling.



☒ Time Capsule 3: Private Space

Time Capsule 3

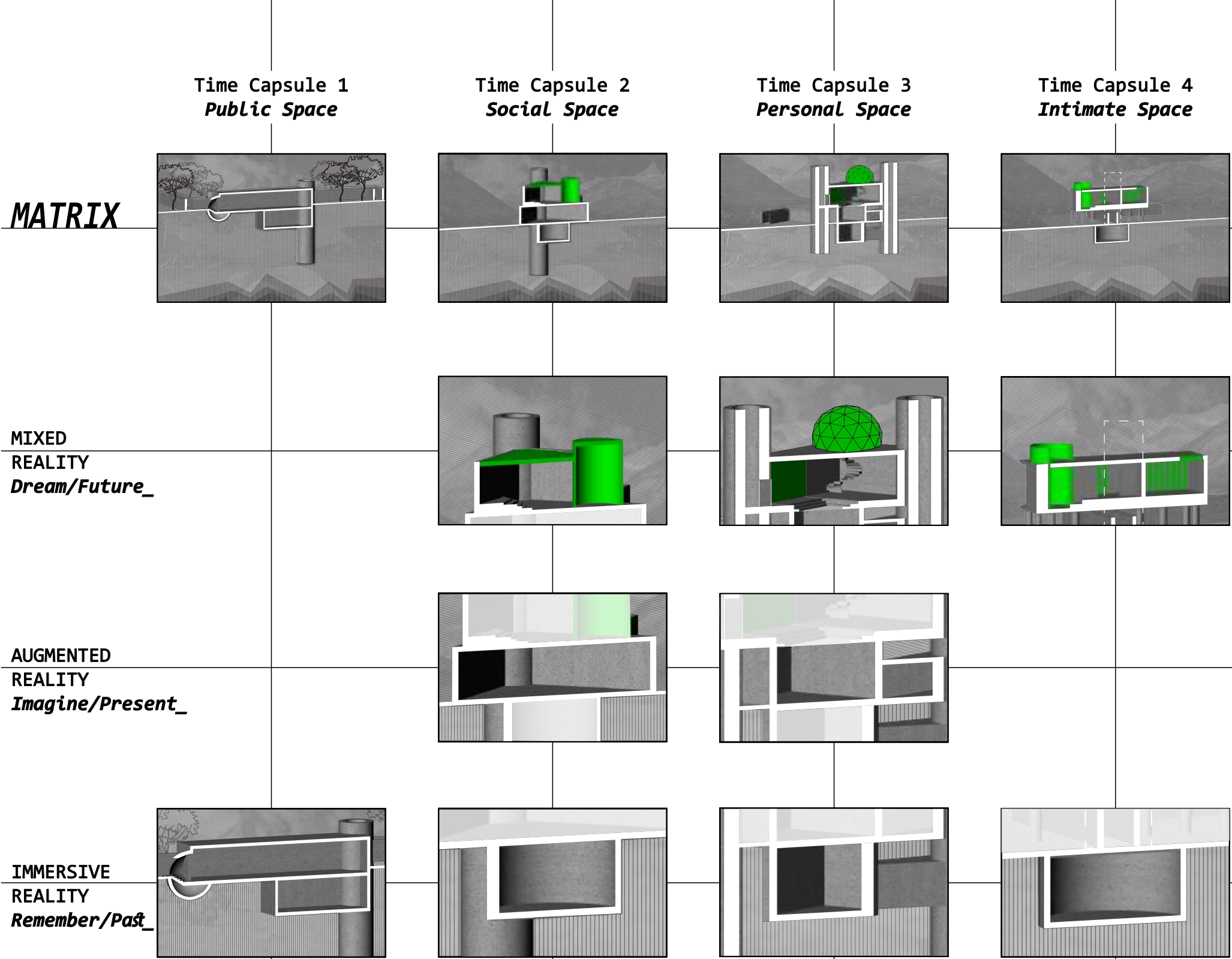
It hosts the rooftop of my childhood dwelling in the past /Tyre_ and my independent dwelling in the present /Hamra_ and an imagined personal space in my brain-simulated dwelling.



☒ Time Capsule 4: Intimate Space

Time Capsule 4

It hosts a space of intimacy in the past /mountain forest_ in a circular space to allow for a 360 immersive projection of the scenery, and an imagined space of intimacy in my brain-simulated dwelling.



The Matrix - Reinterpreted

The matrix becomes the product of the four time capsules and the three modes of medium-regulated-realities. Each medium is designated to a frame of time

1. Immersive Reality > the past (pp. 178-179)

Taking as an example the public space of an urban scale in Roma, I (the user) revisit the memory of the past by being immersed into a simulated walk through the space. The elongated layout of the space allows for the generated feeling that I am actually there.

2. Mixed Reality > the future (pp. 180-181)

Taking as an example the social space in my brain_simulated dwelling, the space is designed with physical spatial components /an amphitheatre/ in addition to green screens as roofing and as a spatial volume. Through augmented reality, I (the user) experience a boundless space where green screens are replaced with extended projections of views. The experience thus balances between the physical and the virtual components.

3. Augmented Reality > the present (pp. 182-183)

Taking as an example my present dwelling in Hamra, the layout of the studio apartment is replicated in the capsule. Upon entering the space, I(the user) get the feeling as though I am in my actual room. The space is augmented by overlaying holograms of re-imagined friends, family, visitors, and experiences into the room. The projected images are not ones I can interact with, but can rather observe.

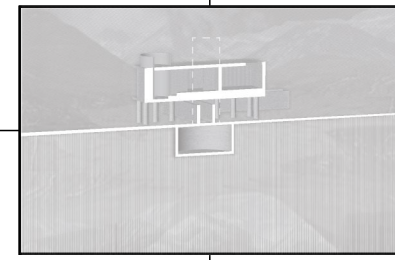
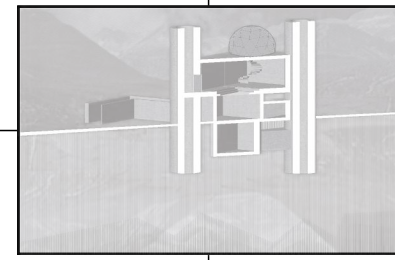
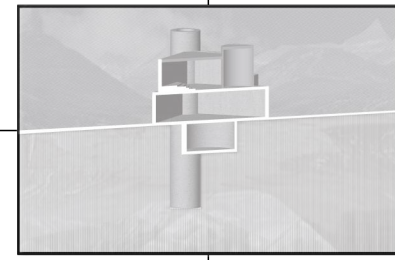
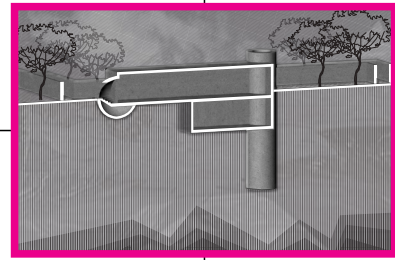
MATRIX

Time Capsule 1
Public Space

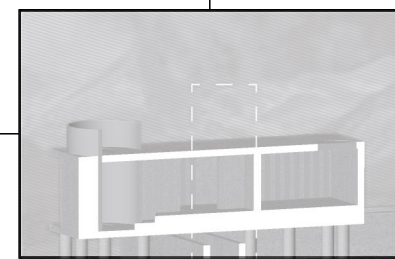
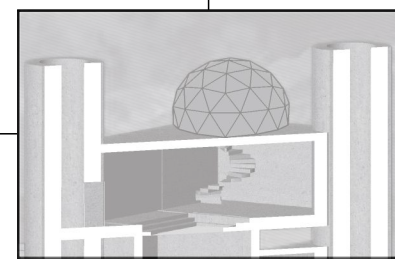
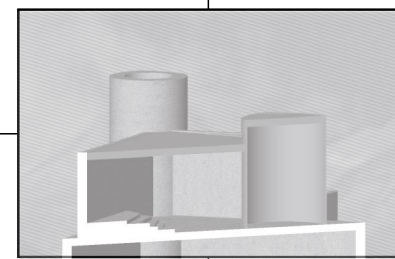
Time Capsule 2
Social Space

Time Capsule 3
Personal Space

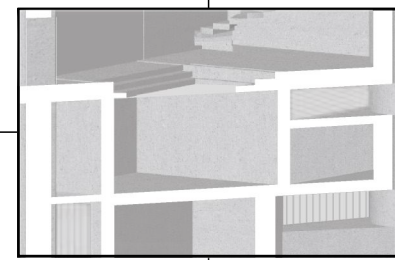
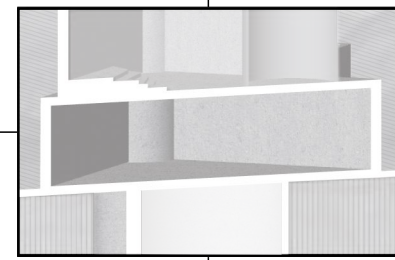
Time Capsule 4
Intimate Space



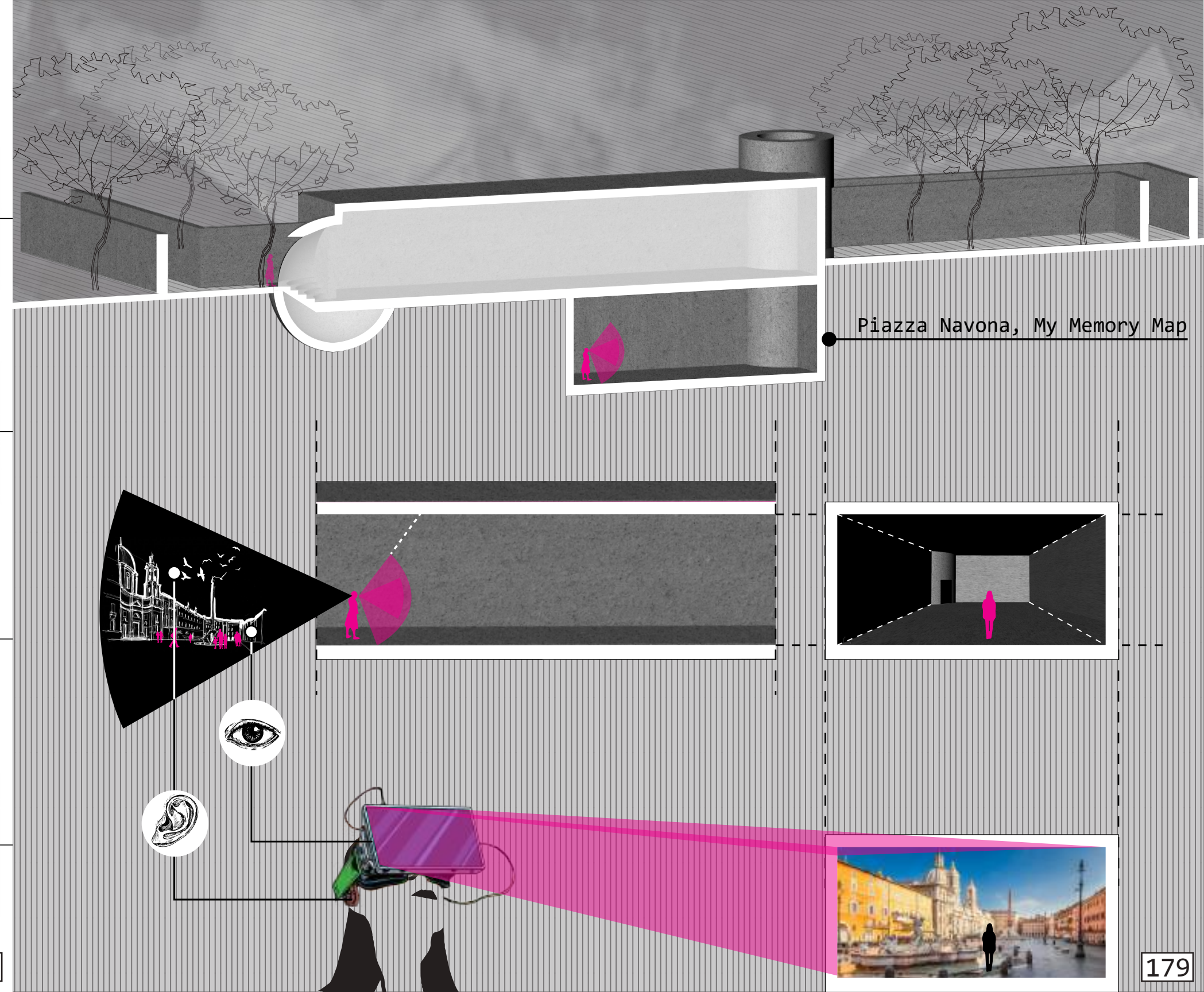
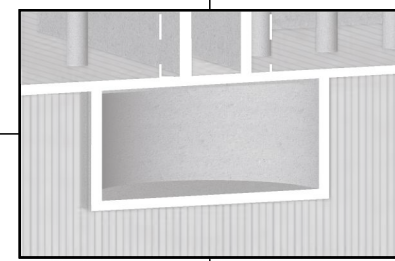
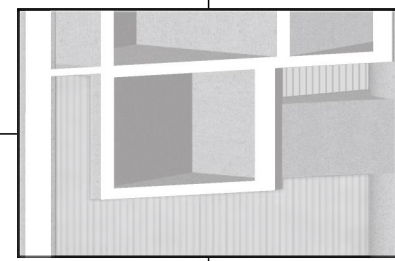
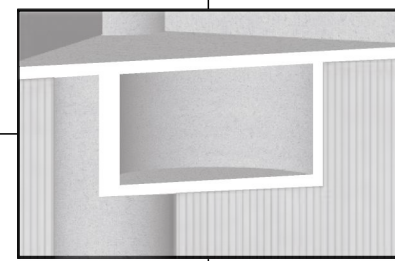
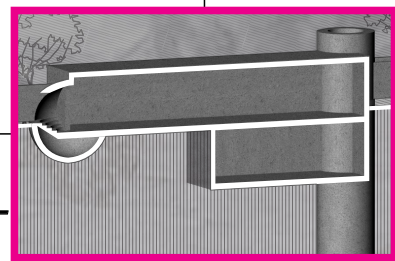
MIXED
REALITY
Dream/Future_



AUGMENTED
REALITY
Imagine/Present_



IMMERSIVE
REALITY
Remember/Past_



Piazza Navona, My Memory Map

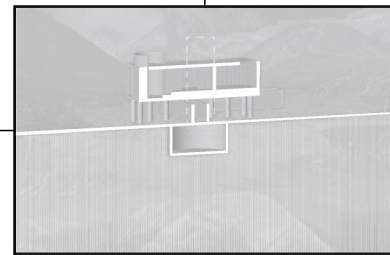
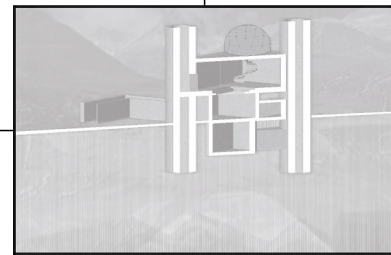
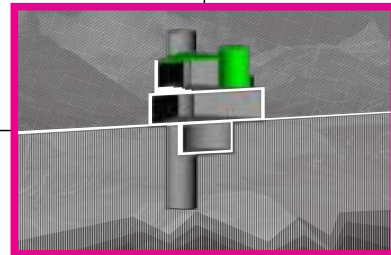
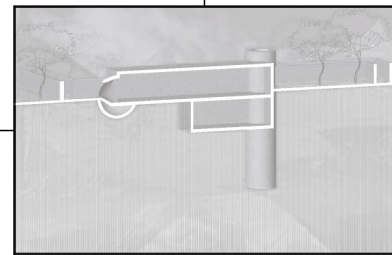
MATRIX

Time Capsule 1
Public Space

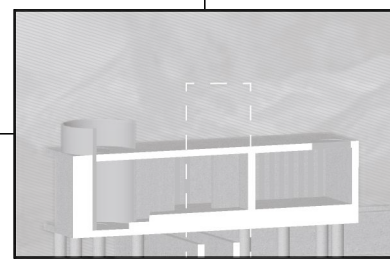
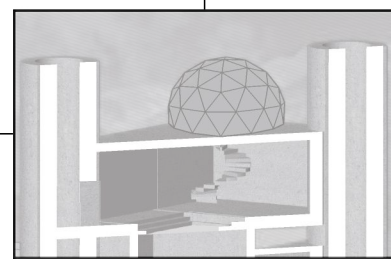
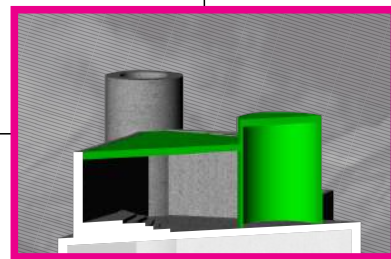
Time Capsule 2
Social Space

Time Capsule 3
Personal Space

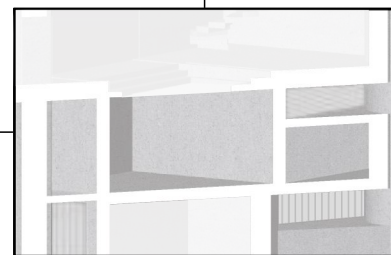
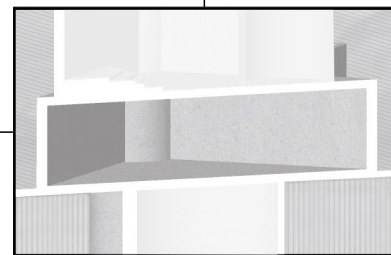
Time Capsule 4
Intimate Space



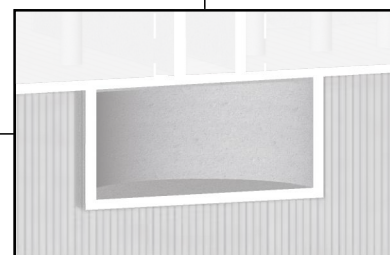
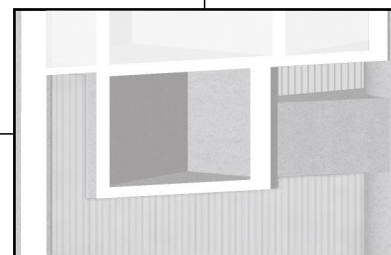
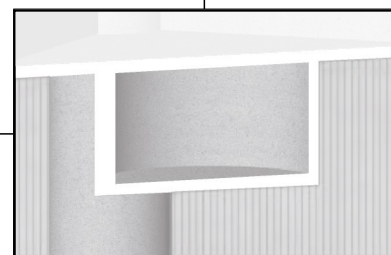
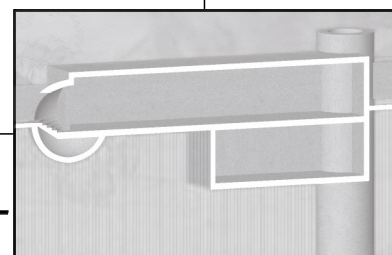
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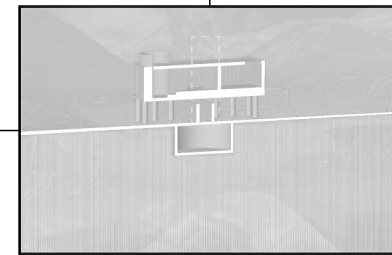
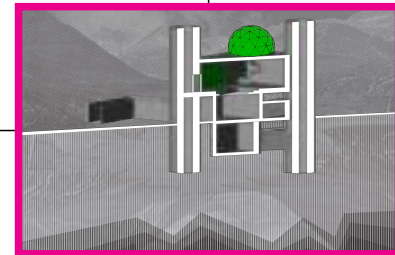
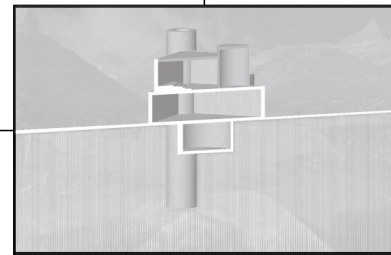
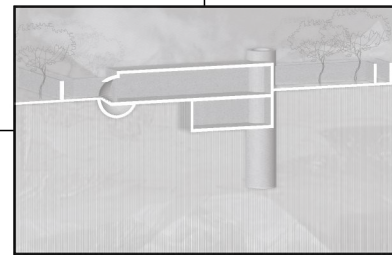
MATRIX

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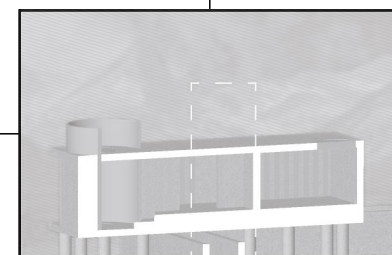
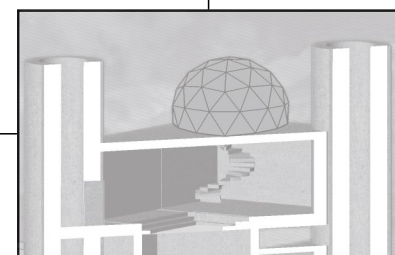
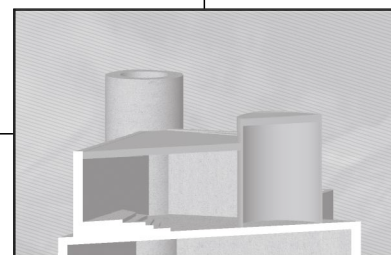
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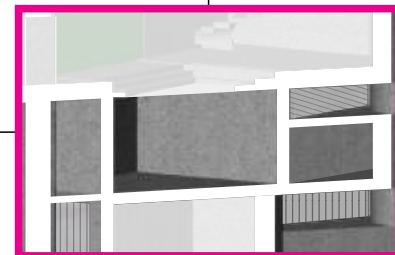
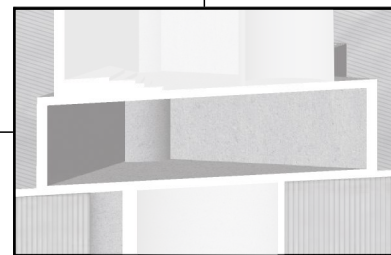
Time Capsule 4
Intimate Space



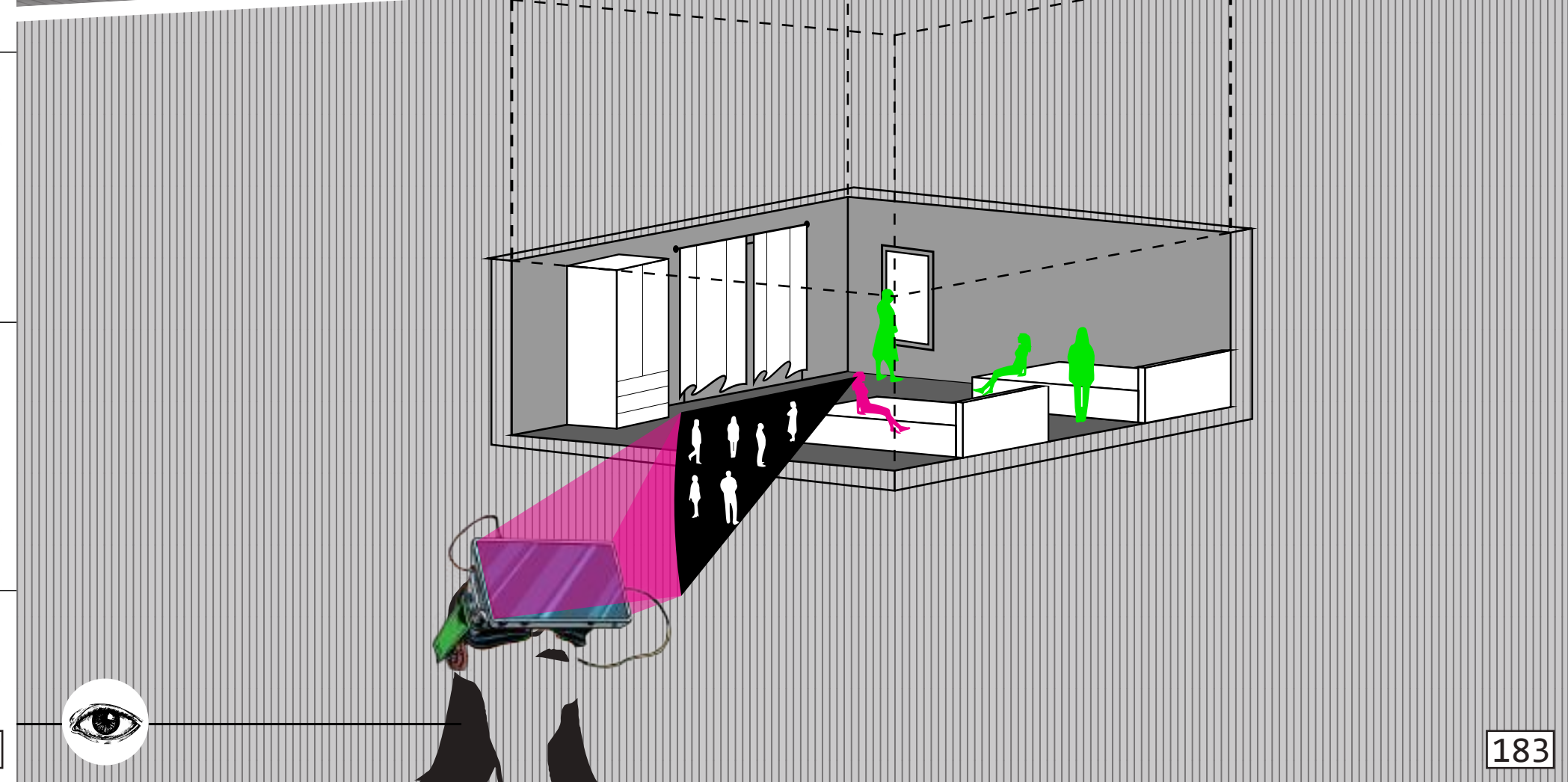
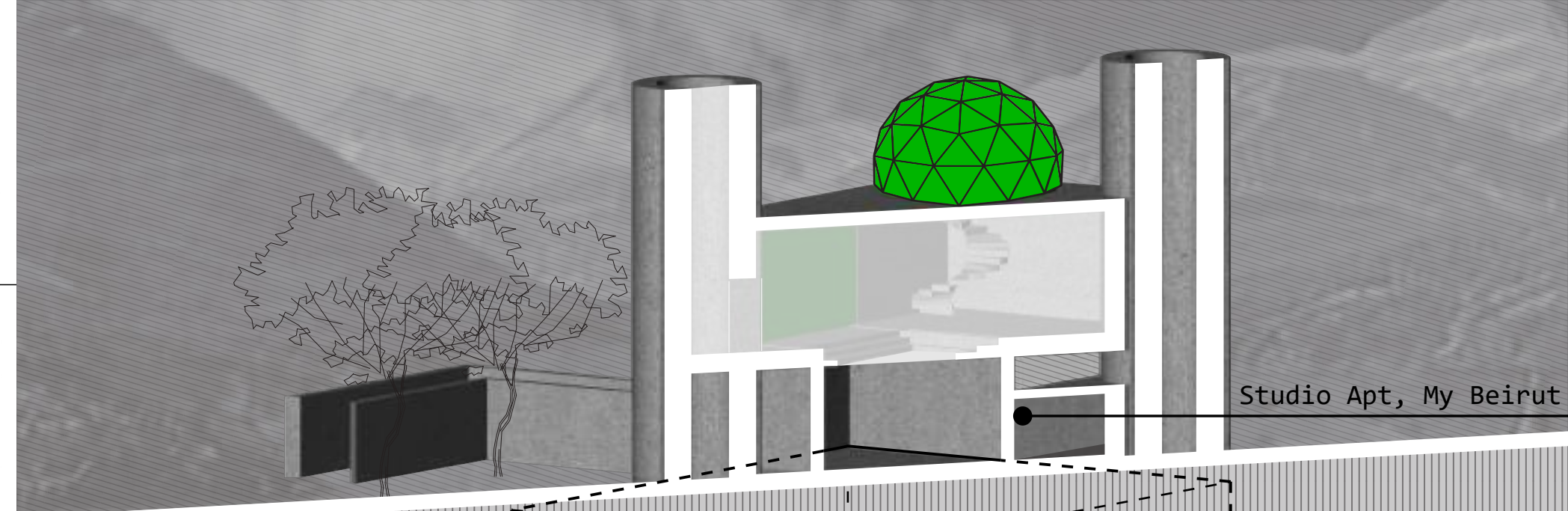
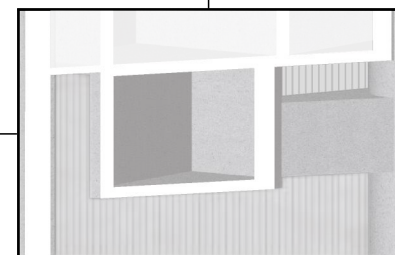
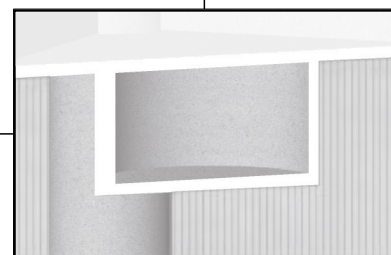
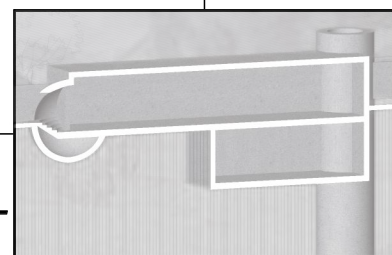
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IMMERSIVE
REALITY
Remember/Past_



/THE END_

Special regards and gratitude to my year-long Thesis advisor, ***Professor Robert Saliba***. Over the entire year of 2020-2021, I was driven by his curiosity to investigate the topic at hand and free myself enough to trust the creative process I started with. Thanks to him, I withstood the challenges posed by the complexity of the topic, and I indulged in a rigorous investigation framework which informed my spatial manifestation.

