

# How people find their way in 2035

Exploring the intersection between  
authenticity and sense making in  
the future of wayfinding

Master thesis  
Lotje van den Burg

August 2025

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**FUTURE OF WAYFINDING**

Master thesis  
MSc Design for Interaction  
Faculty of Industrial Design Engineering  
Delft University of Technology

28 August 2025  
Lotje van den Burg

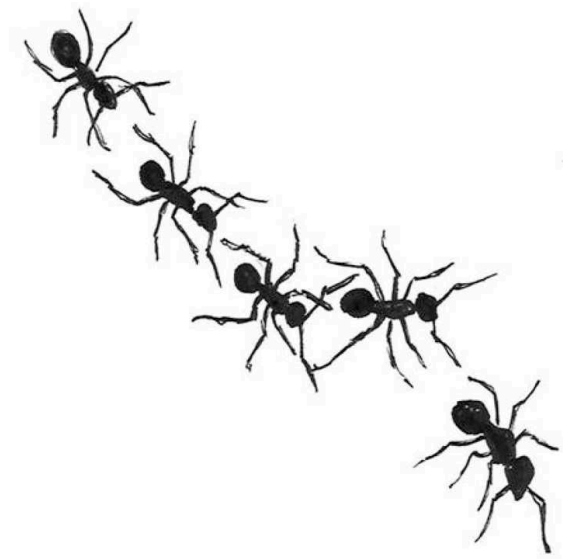
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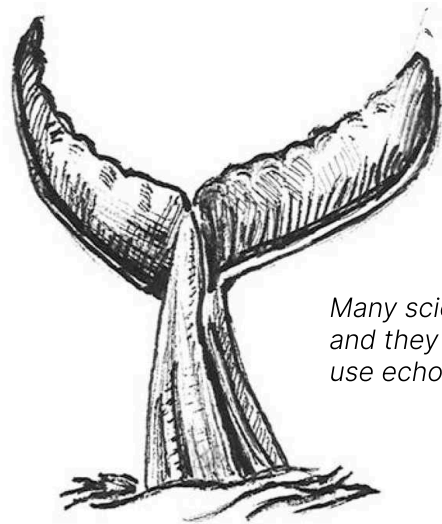


Migratory birds find their way with a combination of methods: they use the sun, the Earth's magnetic field and physical landmarks such as coastlines and rivers. They also use a star compass, knowing that dots of light rotate around a center, depending on the hemisphere, corresponding to north or south.

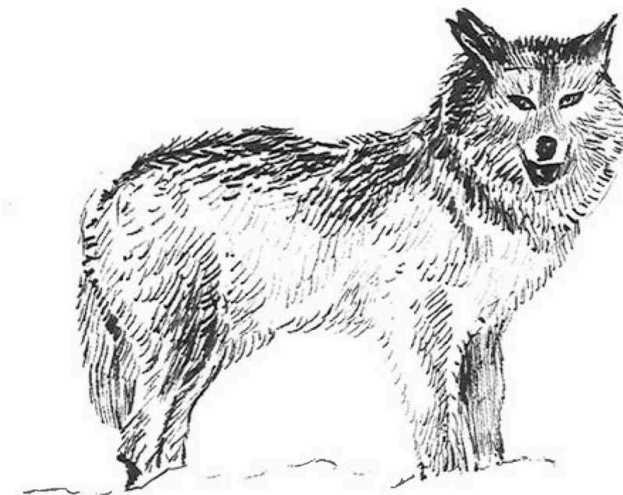
Monarch butterflies migrate up to 3,000km from North America to Mexico, using their perception of the sun and an internal biologic clock as internal compass.



Desert ants have the fascinating skill to navigate home in a straight line through unfamiliar ground after meandering hundreds of meters from its nest.

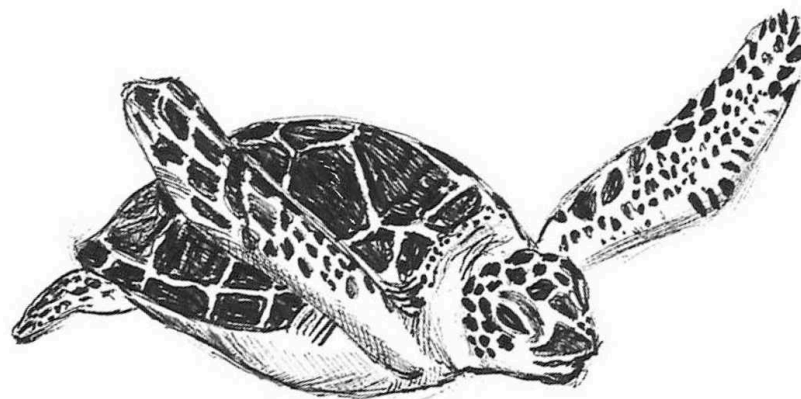


Many scientists believe that whales can sense the Earth's magnetic field, and they use it to guide their journeys as a built-in compass. They also use echolocation in environments where other senses may not allow.



Wolves, dogs and pigeons navigate using their sense of smell (olfaction). They possess an extremely accurate sense of smell.

Sea turtles are known for swimming back thousands of kilometers to return to the beach where they were born. They use unique magnetic signatures the coastlines for their annual migration.



Fiddler crabs use path integration to navigate to and from their burrows. With this technique, animals track their movements (distance and direction) to calculate its current position relative to a starting point, also known as dead reckoning.

# PREFACE

This project grew from a fascination with finding your way, and perhaps even more with getting lost. Along the process, I sometimes felt that same disorientation myself. The project’s scope stretched far beyond the familiar background of design and wayfinding, and at times I nearly lost my own sense of direction within its complexity. But the continuous explorations every time brought surprising outcomes and that experience became part of the message I want this thesis to carry: in a world where routes are increasingly predefined, where trips across the globe can be fully planned and mapped before departure, I hope to remind people of the fulfillment that comes from choosing their own path and embracing the serendipity along the way.

*Finding your way is not only about reaching a destination, but about how you decide to travel there.*

This report documents my master thesis at Mijksenaar, exploring the driving forces behind how people find their way, and bringing them together in a framework of nine typologies. Using the Vision in Product Design (ViP) method, each step was grounded in the preliminary research. The framework is illustrated by using the Louvre Museum. A place of overwhelming scale, complexity, and cultural weight. With its endless wings, iconic artworks, and daily flow of millions of visitors, the Louvre is both a treasure and a maze. It is a perfect stage to rethink how people find their way and how to align a museum experience to this.

I hope this report gives you a glimpse of that journey, and inspires you in the moments ahead when you are finding your way.

Lotje van den Burg



# ACKNOWLEDGEMENTS

I feel very grateful to conclude my time as an industrial design engineering student with this project. I enjoyed it from beginning to end. It allowed me to grow as designer and to apply my personal interest and skills in a new topic and new method.

This project would not have been possible without the people who supported and inspired me along the way. I feel very grateful for the trust, patience, and encouragement I received throughout this journey.

First, I would like to thank my supervisory team from TU Delft, Matthijs van Dijk and Joost Alferink, for supporting me in the design process and giving me the freedom and trust to shape my own project. Thank you both that I could surprise you again and again.

Matthijs, thank you for understanding always with very little words the broad and complex directions I was exploring, and for pushing me each time to refine the nuances and make things fit just a little better. It was a pleasure to learn about the ViP methodology from you.

Joost, thank you for the inspiring talks, sharing practical experiences and for thinking along with me about ideas for the Louvre. I appreciated your patience in following the ViP steps with a practical mindset, it brought a valuable balance to the process.

From Mijksenaar, I would like to thank everyone I crossed paths with in this project: thank you for the conversations and encouragement. Fenne, thank you for your guidance and for always suggesting valuable research and references that broadened my perspective. Stefan, thank you for our conversations about the overall future vision of wayfinding; they helped me to connect the future context to my personal future vision.

Alessandra, thank you for being on this thesis journey at the same time, for sharing the high and low moments, and for supporting me through them. John Körmeling, thank you for your discussions, which allowed me to approach things from fresh angles and find my place within them.

Finally, I would like to thank my parents for your support, opinions, and for always standing by me. Many interests and passions that you allowed me to explore became useful in this project.

To each of you, thank you for being part of this journey. I could not have done it without you.

# EXECUTIVE SUMMARY

This graduation project explores the future of wayfinding in 2035, using the Louvre Museum as a design context. Conducted at Mijksenaar, a design studio specialized in wayfinding, and following the Vision in Product Design (ViP) methodology. The project investigates how people may orient, navigate, and experience places in a world where technology increasingly provides the way for us.

Wayfinding today is often framed as a problem to be solved with clarity and efficiency. Digital tools, signage systems, and pre-planned routes ensure that the shortest path is always within reach. Yet this convenience also reduces the role of our intrinsic wayfinding skills, and with it, opportunities for exploration, discovery, and agency. This project starts from the belief that finding one's way should not only be about reaching a destination, but about how we experience movement, space, and place along the way.

The process combined literature research, expert interviews, and future context exploration to identify 150 context factors that will shape wayfinding in 2035. These were clustered into eleven patterns and organized into a 3×3 future framework, structured along two dimensions: sense-making of space (intrinsic, social, systemic) and authenticity of place (physical, cognitive, emotional) This framework describes nine typologies of wayfinding behavior and spatial guidance, each highlighting a differet mode of orientation in 2035. From this, a vision was developed for the Louvre: rather than directions to find your way, visitors should choose how to navigate, orient and experience the museum, and view the collection through an intentional lens.

## Main outcomes

The outcome of the project is the framework as route for the future way. The proposed wayfinding experiences in the Louvre Museum, are used as example of applying the framework in a context.

### RESEARCH

Literature study and expert interviews identified 150 future context factors for wayfinding.

### FRAMEWORK FOR FUUTURE WAYFINDING (2035)

Eleven patterns were clustered and organized into a 3×3 framework for envisioning the future of wayfinding, where spatial guidance helps people to make sense of space and find authenticity in place in 2035.

### DESIGN VISION

Nine visionary design statements were formulated, providing tools for translating the framework into design practice. Each vision statement was clarified with an analogy.

### APPLICATION IN THE LOUVRE

For the Louvre, nine speculative design interventions were developed, that illustrate how the typologies could be manifested in a complex museum context.

### PATHWAYS CONCEPT

A holistic design concept that integrates all nine strategies into one adaptive wayfinding system. Pathways highlights how different parallel experiences can be brought together in one museum, supported by emerging personalization technologies.

For Mijksenaar, the work provides:

- A strategic tool for spatial guidance.
- A vision-driven method for aligning contexts with human experience.
- A proof-of-concept (Pathways) that demonstrates the potential of personalized and meaningful navigation in public space.

## Experiential layers of Pathways

Each of the nine typologies is reinterpreted in the Pathways concept as an experiential layer of movement:

### SYSTEM HABITS IN MOVEMENT

Optimized routes for efficiency and flow.

### COGNITIVE OUTSOURCING

Decision support through curated, simplified options.

### CONFIRMATION THROUGH SYSTEM SUPPORT

Emotionally responsive pathways that reassure, encourage and surprise you.

### SHARED VISITS

Tools for companions to stay connected without controlling one another.

### SHARED STORIES

Live data visualizations of where crowds gather, shaping decisions to join or avoid.

### PLACES OF BELONGING

Highlighting familiar zones and focusing on the destination rather than on the route to reach it.

### INTUITION

Opportunities to train natural orientation skills.

### REFLECTION

Quiet spaces that allow stillness and thought.

### FRICTIONAL EXPERIENCE

Routes that demand attention, effort, and engagement while wandering and exploring.

## Conclusion

In conclusion, this thesis aims to inspire both designers and non-designers to reconsider the role of wayfinding in our lives. In a world where the way is increasingly found for us, we can still choose to find our way differently and embrace the richness of movement, discovery, and getting lost.



# How people find their way in 2035

## FUTURE FRAMEWORK

A future framework outlining nine typologies of how people may find their way in 2035. It shows how spatial guidance supports sense-making and fosters authenticity of place, in a world where the way is increasingly found for us. Rather than prescribing one path, the typologies invite people to choose their own way of finding.

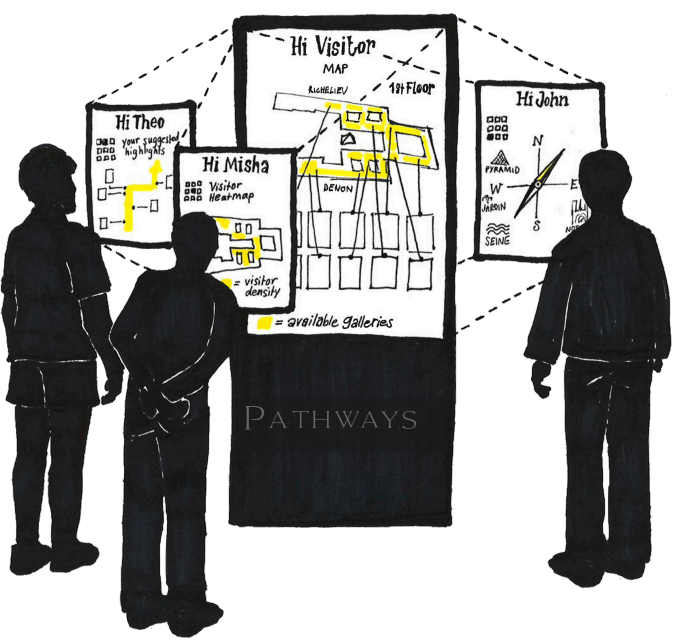
## NEEDS & VALUES

- AGENCY**  
Visitors need the freedom to choose how they navigate.
- INCLUSIVITY**  
Different visitors require guidance tailored to diverse rhythms, abilities, and preferences.
- SERENDIPITY**  
Not every route should be optimized; users value moments of wandering, friction, and unexpected discovery.
- BALANCE**  
Visitors want guidance that helps them orient, but without overshadowing the artworks.

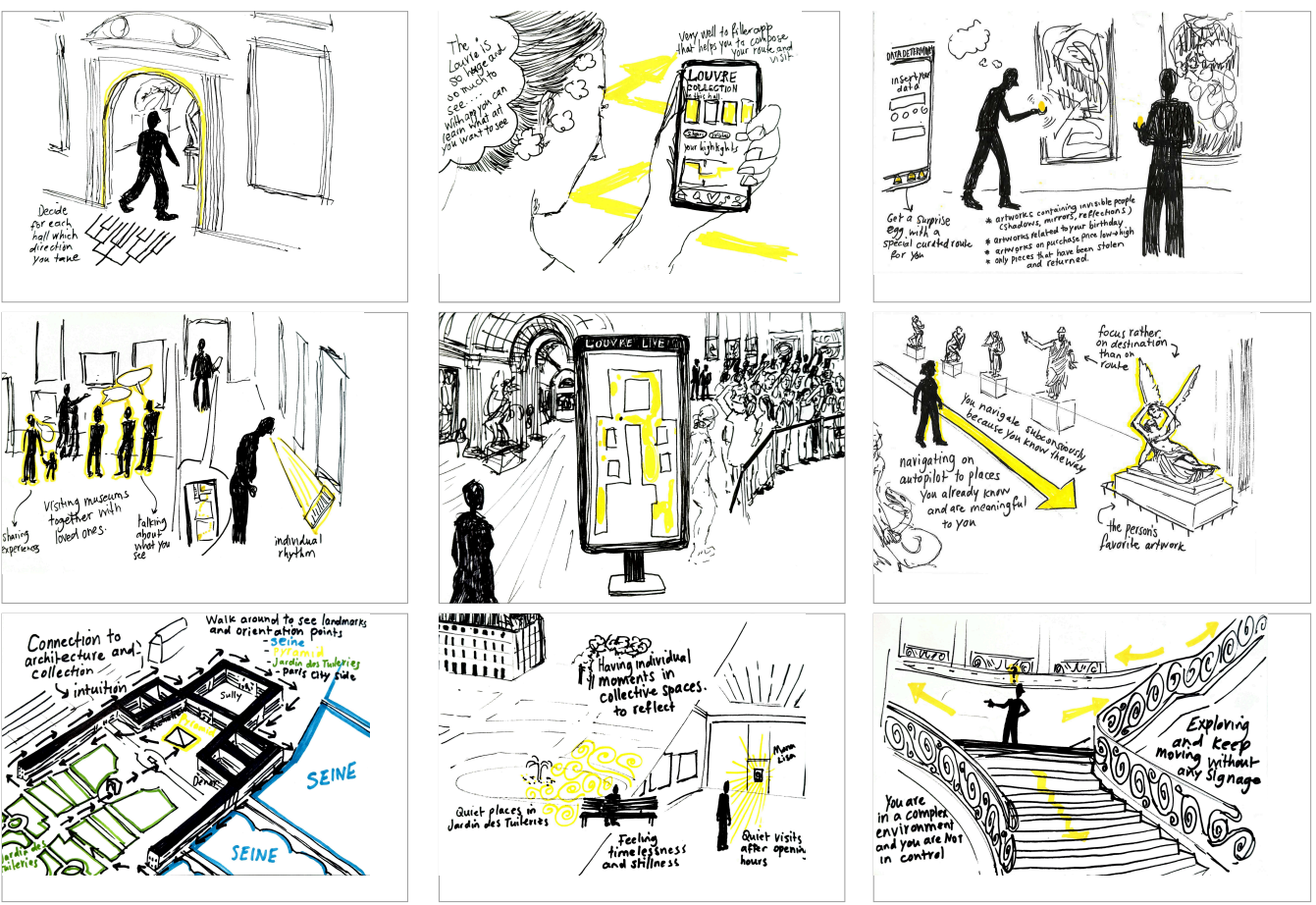
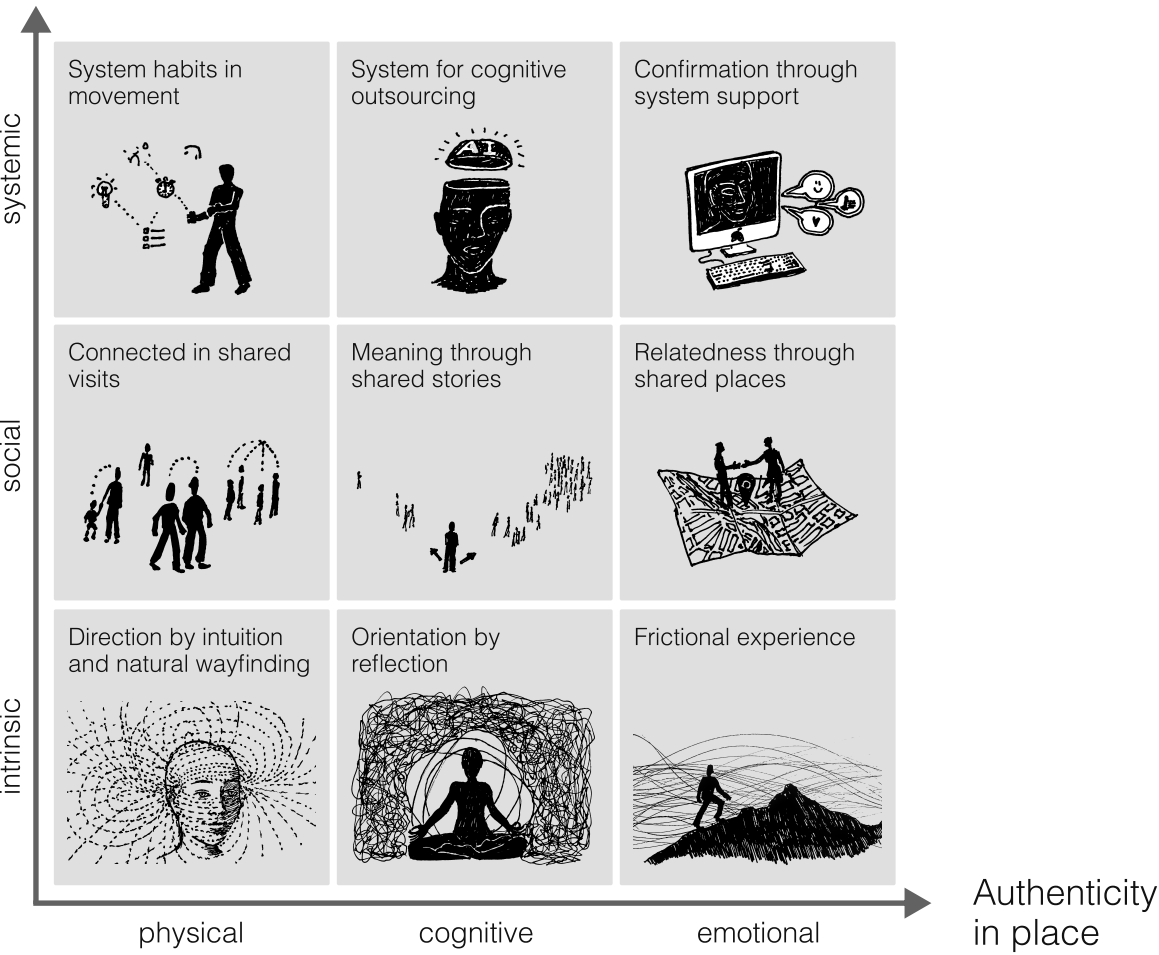
Exploring the intersection between authenticity and sense making in the future of wayfinding

## CONCEPT “PATHWAYS”

Pathways reimagines navigation for the Louvre of 2035. Visitors choose how they want to find their way. Supported by emerging technologies with parallel experiences, Pathways balances clarity with discovery, turning movement into a personal journey within a collective space.



Sense-making of space



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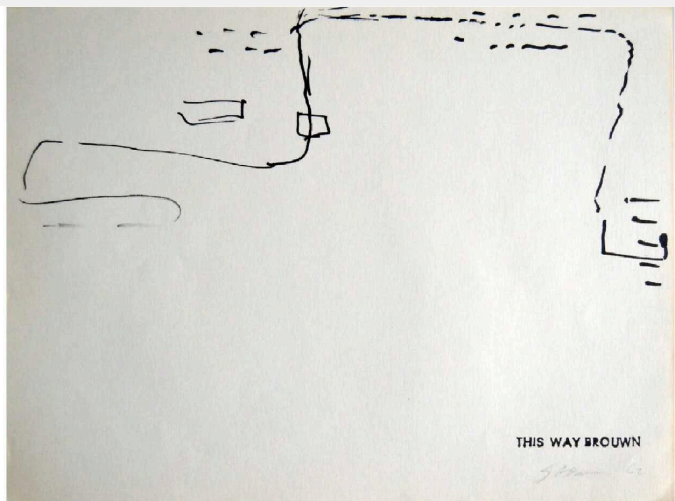
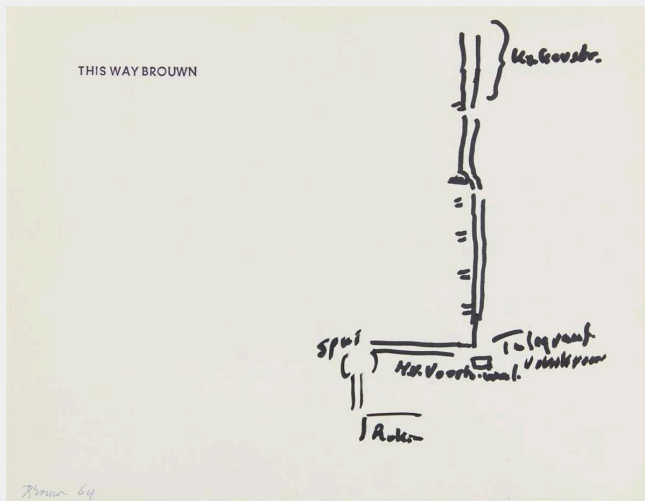
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# INTRODUCTION

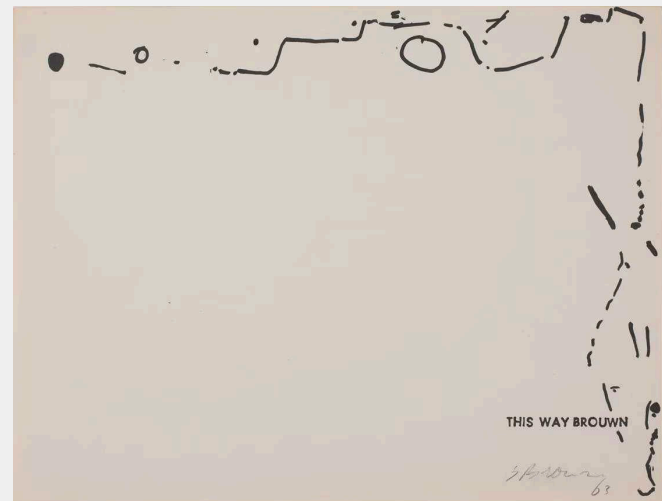
This introduction chapter marks the baseline of the project. It contains practical information to support both understanding the thesis and navigating how to read it, as an instruction to not get lost in this journey through future wayfinding.

The following chapters dive deeper into the domain of wayfinding, the future context and the implications for future proof wayfinding experiences in this context.

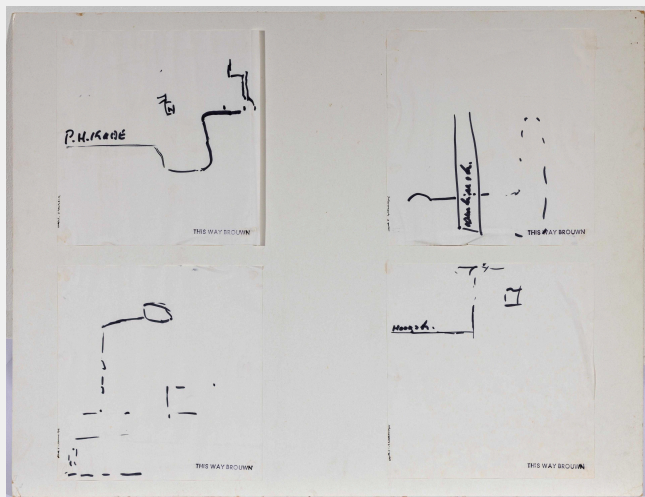
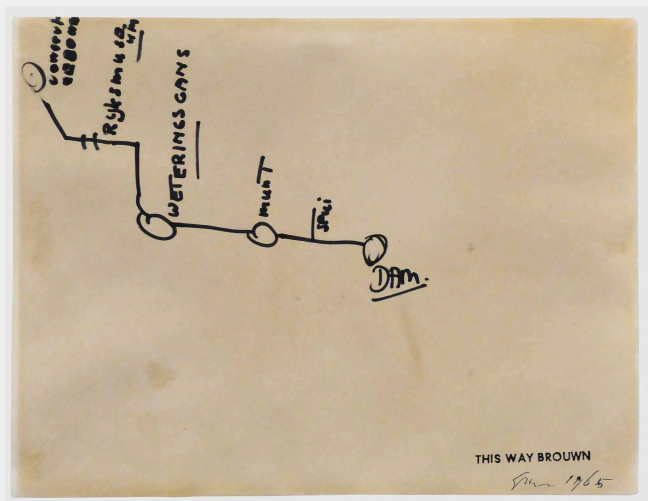




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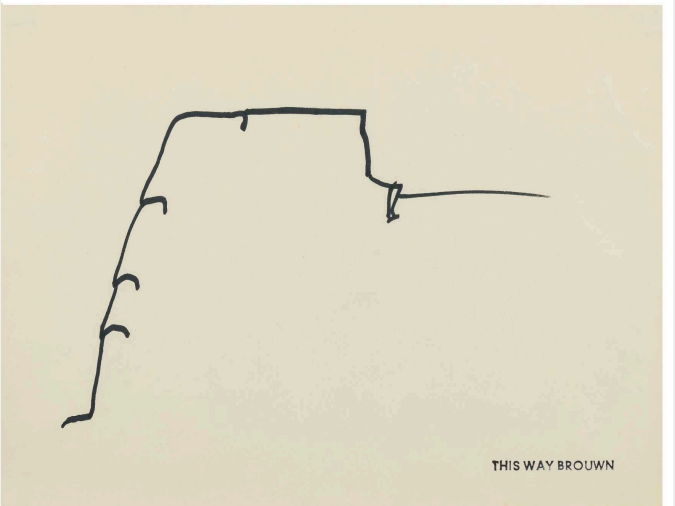
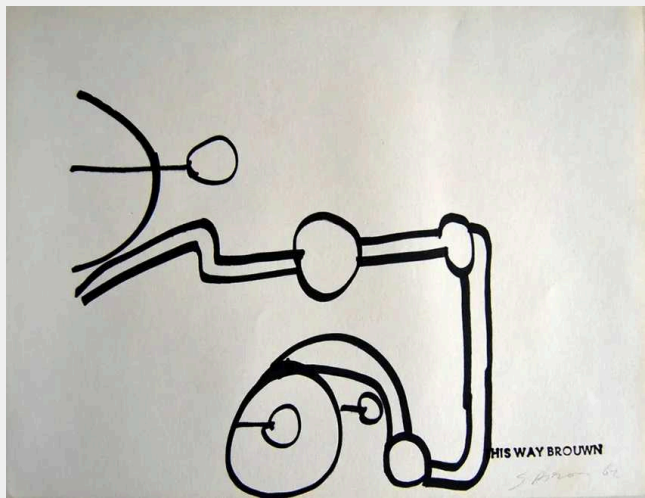
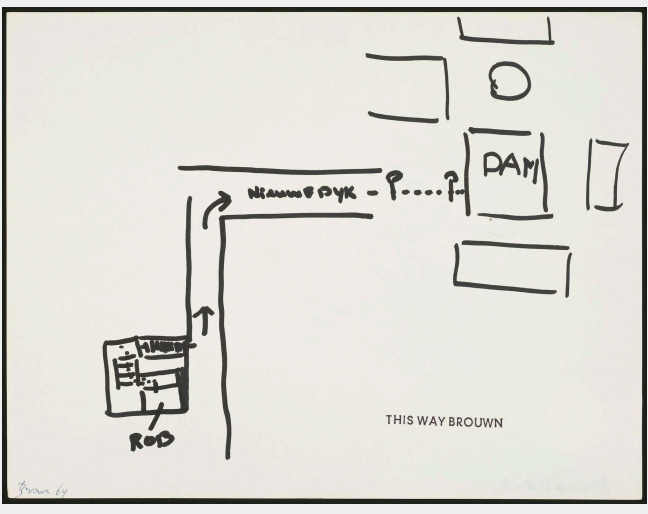
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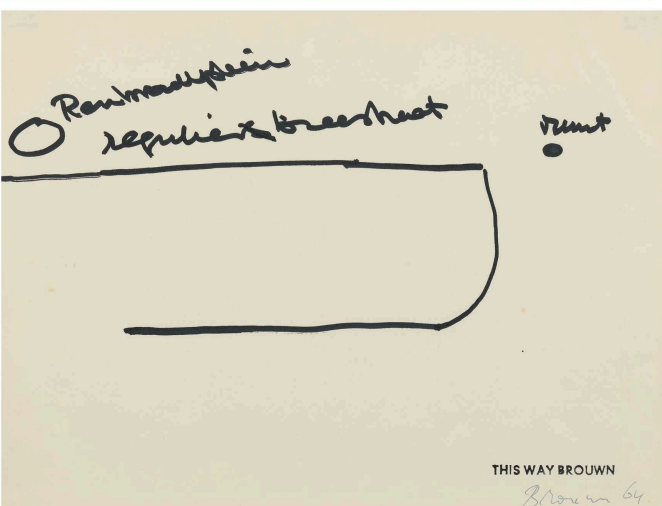
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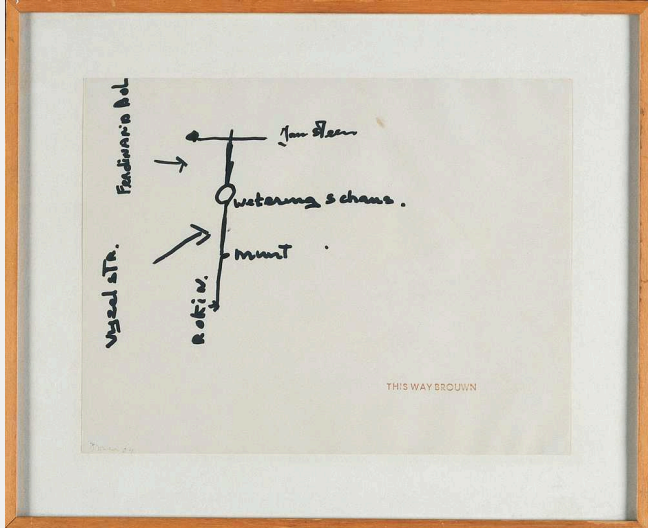


Figure 1: This way Brouwn (1960-1964)  
Map 1 (ArtReview, 2017), Map 2 (Konrad Fischer Galerie, 2015), Map 3 (Bronwasser, 2017), Maps 4,5,6,7, 10,11 (Mutual Art, 2022), Map 8 (Walker, 2007), Map 9 (Russeth, 2017), Map 12 (FRAC, 1989)



# 1.1 CONTEXT OF THE STUDY

In the series, *This Way Brouwn* (1960-1964), Stanley Brouwn asked passers-by to draw a route from A to B through Amsterdam (figure 1). The drawings on page 15-16 show external representations of the city layout and routes from point to point. As cities grow denser (United Nations, 2018), systems become smarter (Harari, 2017), and public spaces more layered with information and stimuli (Powell et al., 2023), the act of finding one's way is no longer just about reading a map or following a sign. Digital technology is now shaping all stages of the travel experience (Nortal, 2025) and there are also big shifts in the development of the individual and of society. The continuing increase in aging population requires different needs for the public space (EPSAS, 2024). Fortunately, over the last years, more and more wayfinding design is prioritizing user needs, preferences and feedback to improve usability and satisfaction (Mullen et al., 2016).

## Wayfinding

Wayfinding involves all strategies that people use to find their way in familiar or new settings, based on their perceptual and cognitive abilities and habits (Arthur & Passini, 1992). People have different and diverse strategies to navigate, in which habits and expectation play a significant role (Summerfield & Egner, 2009) (Riccio et al., 2013) (Salovich et al., 2017). Some people rely more on route-based strategies, others rely on survey-based strategies for building a spatial overview, and they often use a combination of strategies (Maguire et al., 2006).

In information design, wayfinding is more than just signage. There are many forms of information (Mijksenaar, 2020), like subtle cues from light and architectural shapes, vocal instructions, human staff directions, your own constructed mental maps of past experiences (Lynch, 1964), media and the flow of other passengers. This means there are infinite ways how people find their way and how they experience this. With the rise of digital technologies, especially GPS-based applications and algorithmic routes, wayfinding has increasingly become a technologically mediated activity. This shift has transformed not only how people find their way, but also how they engage with physical space and personal agency in navigation. This research explores how the wayfinding behavior might evolve over the next ten years, and envisions the role of the wayfinding field for this future.

## Mijksenaar

This project is done in collaboration with Mijksenaar, a leading information and wayfinding design agency, founded in 1986 by Paul Mijksenaar. Three years later, in 1989, the collaboration with Schiphol started for the wayfinding of the airport (figure 3). Besides airports, Mijksenaar designs wayfinding solutions for many different locations, from campuses to museums and from cities to stations (figure 3). For each project, they start with a detailed analysis, then developing a wayfinding strategy for a better readable and navigable location (Zijlstra, 2015). The solutions are on the intersection of information and spatial design, like interventions in architecture, interior, lighting, placing of landmarks, digital tools, maps and signage. (Mijksenaar, 2023)

The company has a multi-disciplinary team with a user centered focus, with backgrounds in architecture, digital, industrial design, psychology, user experience and graphic design. Their vision is that by aligning orientation, navigation and experience, they are *connecting people with spaces and places*. (Mijksenaar, 2023)

## Orientation

At Mijksenaar, they define orientation as analyzing and using spatial characteristics. Think of rhythm, landmarks, or light conditions of a place. These help people to intuitively 'read' and understand their surroundings, before needing explicit and written information. (Mijksenaar, 2023)

## Navigation

Navigation is addressed by defining the need for information, through mapping the different journeys of people and developing the total information hierarchy. (Mijksenaar, 2023)

## Experience

Next to pure functionality, Mijksenaar also provides a layer of 'identity' through wayfinding, as visual storytelling helps to establish sense of place and recognitions to create memorable spaces and experiences. (Mijksenaar, 2023)

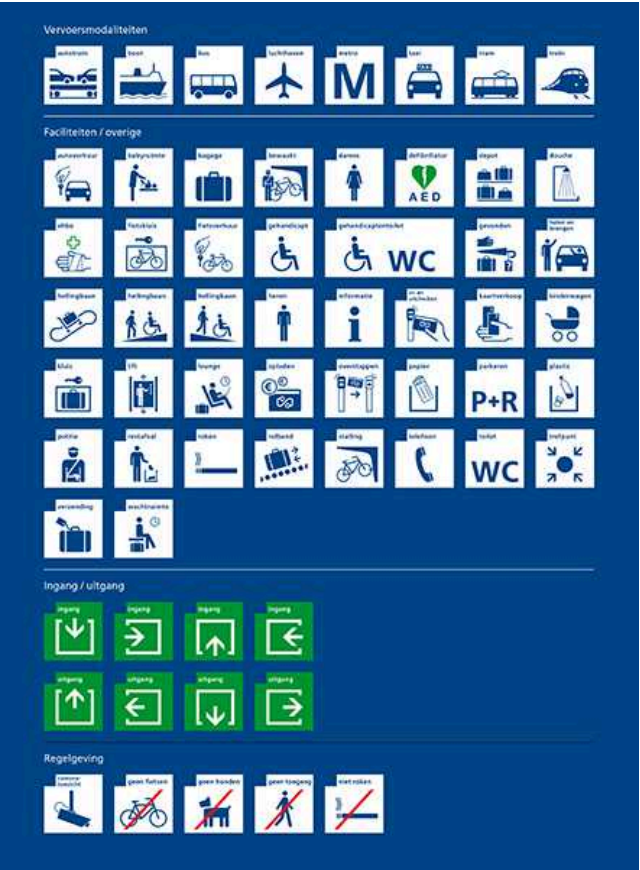


Figure 2: NS Pictograms (Huygen, 2020)



Figure 3: Schiphol wayfinding since 1989 (Mijksenaar, 2013)

# 1.2 GOAL AND SCOPE OF THESIS

## Project goal

The research question is: *How do people find their way in 2035?* and the goal of this thesis is to explore how wayfinding should evolve in response to future societal changes. Current wayfinding design often focuses on solving practical issues of confusion or unclarity, this project however takes a broader approach. It investigates what wayfinding should be in order to meet the needs of people in 2035. This is especially relevant in an increasingly complex and technologically mediated world.

## The year 2035

This year was chosen carefully, as 2035 is far enough to step outside today's way of seeing the world, but near enough to remain connected to current trends and developments in technology, urban development and human behavior. This way, we can envision an evidence-based plausible future. (Hekkert & Van Dijk, 2011)

## Value for Mijksenaar

This project extends Mijksenaar's ambition into the speculative and strategic domain: *How can wayfinding evolve beyond signage, toward becoming an adaptive, responsive, and socially meaningful layer of future public space?* In doing so, this thesis does not attempt to design a single tool or product. It aims to contribute a vision with an exploration of how people might orient themselves, move through space, and stay connected to others in the year 2035.

Through the multi-disciplinary approach of the research, it highlights the consequences of wayfinding behavior that are deeply connected to other experiential and societal processes. This emphasizes the shift of wayfinding from only functional to more experiential.

## Scientific relevance

Importantly, each step of the process can be interpreted both as a source of research insight and as an act of creative synthesis. When this project is continued or revisited in the future, the context analysis can serve as a foundation for new interpretations, while the vision and concept should be seen as one possible outcome rather than a fixed solution. It is a way to illustrate the framework.

# 1.3 PROJECT APPROACH

Instead of responding to existing wayfinding issues, this thesis project explores how future behavior shapes the opportunities for wayfinding: how people orient themselves, move through space and stay connected in public environments.

## Vision in Product Design methodology

To guide this process, the Vision in Product Design (ViP) method (Hekkert & van Dijk, 2011) is used. ViP is a future-oriented design approach that is reframing the current design space to generate a long-term value, grounded in the needs of future behavior in the domain. The ViP method follows a structured exploration through the levels of product, interaction and the context level (figure 4). It combines insights from different research backgrounds to construct a credible future context and design response. (Hekkert & Van Dijk, 2011)

The method was relevant to research a deeper layer of wayfinding, and image wayfinding as a social and experiential practice.

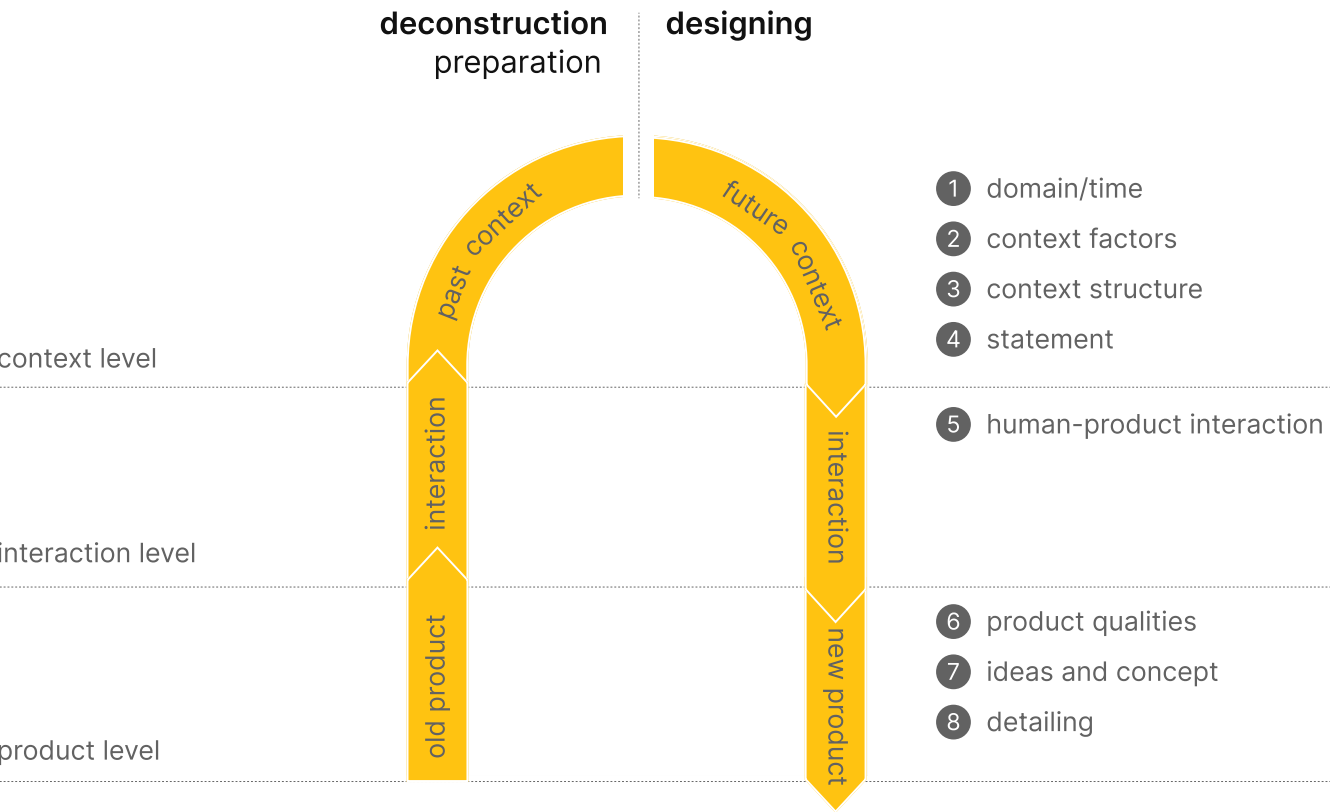


Figure 4: Visual representation of Vision in Product Design process

## Steps of ViP method

Each step of ViP that was applied in the project:

- D deconstruction** starts by understanding the current relationship of product, interaction and context and what factors shaped it the way it is.
- 1 domain definition** sets the scope of the project by defining a relevant time frame and focus area.
- 2 gathering context factors** as states, principles, developments and trends from different disciplines.
- 3 clustering & structuring the context** analyzes relations between individual factors and translates them into future patterns and a design framework.
- 4 vision statement** describes the intended experiential effect of how as designer you relate to the future behavior in the framework.
- 5 desired interaction** describes in what way the vision should be realized on the interaction level.
- 6 product qualities** emerge from the analogy as qualitative characteristics that should guide the design solution.
- 7 concept development** is the generation of ideas and further concept design based on all previous steps of the methodology.
- 8 connecting now-future** translates the current concept to the future context by a transition path.



# DOMAIN

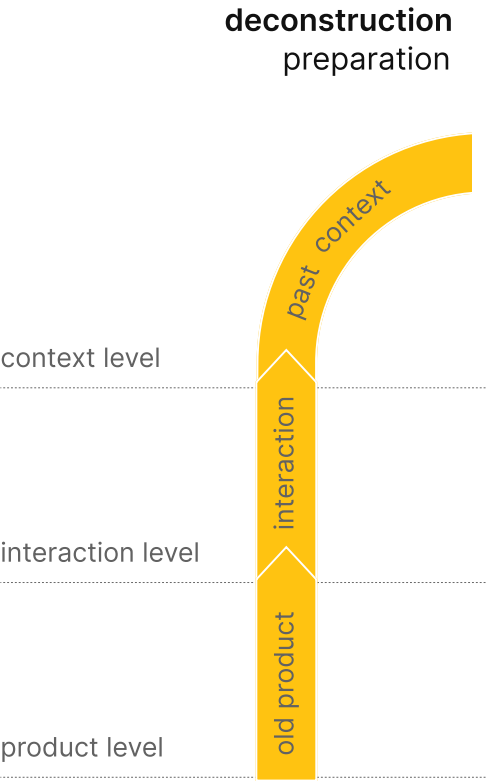
This chapter analyses the current wayfinding domain. Through deconstructing the wayfinding in Schiphol airport, a deeper understanding is created on how the current wayfinding system is shaped. The domain, however, was not narrowed down to airports, but a specific context analysis was needed for an in-depth interpretation.

All insights are combined into a model that visualizes the wayfinding domain for this thesis. The domain is defined as:

*How people use information to understand and orient in the public space for navigation and experience, in 2035.*



# 2.1 DECONSTRUCTION OF SCHIPHOL WAYFINDING



## product level

The ‘product’ is the wayfinding system at Schiphol. It consists of the signage, service, architecture and interior, policies and area surrounding the airport. It is hard to give a complete overview, nevertheless, this section is an attempt to highlight some of the characteristics of the product.

An initial characteristic is the yellow signs. The color is warm yellow that is dominant and catches the attention. It is part of a color coding for different sorts of destinations. Yellow is for everything related to arrivals and departures, grey indicates facilities, green marks emergency routes, and blue is used for shops, cafés and restaurants.

Schiphol operates day and night, so lighting is important. Most signs are self-illuminated to improve visibility. There is also a growing amount of digital signs, where the content can be adapted to current circumstances.

The information is designed to be clear, intuitive, predictable, and unambiguous. Gates are indicated by a capital followed with a digit. Sentences and names of destinations are written with a capital as first letter to also increase legibility. Pictograms are supporting people who have trouble reading Dutch or English, and they are also useful for people with a low literacy level or dyslexia. (Berkers, Linders & Bosma, 2013)

For the wayfinding in Schiphol applies the rule ‘form follows function’, as design consideration are based on legibility, comprehension, clarity and attentional capture. The yellow signs demonstrate this, as the yellow color with black text is chosen for the high contrast and readability (Berkers, Linders & Bosma, 2013). The visual design with arrows and pictograms expresses simplicity. Wayfinding in Schiphol follows 4 principles (Dutch Profiles, 2012).

- 1. continuity: repeat info till you get there.
- 2. conspicuity: signs need to stand out.
- 3. consistency: use always in the same way.
- 4. clarity: the message should be clear.

## interaction level

Wayfinding at Schiphol is designed to offer a seamless interaction between user and environment, aiming to reduce stress and cognitive load in a high pressure setting of finding your way through the airport. Beyond the physical act of moving through space, orientation and experience also involve cognitive interaction. They are shaped by factors as human perception, memory, attention, and decision-making.

Although the signage system looks simple, it supports complex human behavior through well considered placement, timing, and clarity. Signs are placed perpendicular to the walking direction, aligning with natural gaze behavior, while distractions like advertisements are kept parallel to stay out of immediate focus (Berkers, Linders & Bosma, 2013). This supports the traveler's need for intuitive orientation in a context where time pressure and emotional tension are high.

Norman's basic principles for good interaction (design, consistency, immediate feedback and simplicity), help to give people a sense of control. Through predictability, people know what to expect and they can anticipate information before they actually need it. (Norman, 2013)

In general, the wayfinding at Schiphol is purely functional. For example dictating routes and indicating walking time to destinations. This subtly shapes passengers’ behavior and decision-making. For people under stress, it is also about trust and delegation of your cognitive processes, so that users are able to focus on their final destination.

## context level

The worldview of the 90s, in the early stage of Mijksenaar’s work for Schiphol, was very different, especially in aviation. Environmental concerns were not yet as prominent as today. Flying was originally a privilege for the elite, a status symbol driven by the ‘aesthetics of progress’, a cultural appeal associated with technological advancement and modernization. Flying represented not just transportation but also a forward momentum. With a globalist mindset and the economic means to travel, the whole world was within reach. Airports were gates to other cultures and flying implied being receptive to another world.

As long as the world population, globalization and aviation industry grew, airports complexity did as well. In twenty years, the number of passengers at Schiphol grew with 57%, from 42.5 million 2004 to 66.8 million in 2024. (Schiphol, 2024)

The Schiphol wayfinding stays needed in different forms, because its artificial created environment is complex and complicated (Snowden & Boone, 2007) and in a natural way, the complexity is hard to navigate through. Still, Schiphol’s wayfinding is continuously evolving and adapting to changes in society and technology. It is thoughtfully designed, but it raises the question: who decides how we navigate? And is it inclusive for all?

When the first airports were designed, most of the passengers were rich men. Decreasing inequalities, globalization and budget flights opened air travel to more people.



Figure 5: Schiphol parking garage wayfinding



Figure 6: Schiphol signage

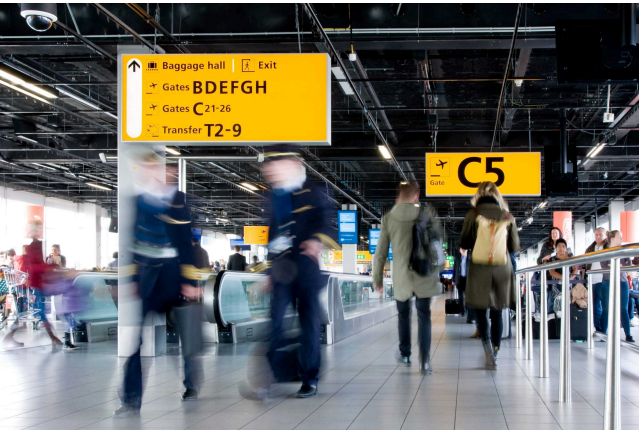


Figure 7: Schiphol wayfinding



# 2.2 INSIGHTS FROM DOMAIN EXPLORATION

## Cognitive mapping

Cognitive mapping refers to the internal, mental representation people form of their surrounding environment. Kevin Lynch (1964) describes the concept in his book *The Image of the City*, as a way to understand how individuals navigate and make sense of urban spaces. According to Lynch, people create mental maps composed of five key elements: paths, edges, districts, nodes, and landmarks. These elements help structure people’s spatial understanding and enable orientation, navigation, and memory of place.

Cognitive maps are subjective and incomplete, shaped by personal experience, attention, and emotion. Lynch emphasized the importance of legibility, so how easily a space can be understood and organized mentally, as a core quality of well-designed environments. A highly legible space supports strong cognitive mapping, helping individuals structure the space in their mind and feel confident and oriented.

## Accessibility and inclusivity

Inclusivity should not be mistaken for accessibility. Accessibility focuses on removing barriers so that people with disabilities can use services and environments. Inclusivity, on the other hand is about designing for everyone, taking diversity into account in the process. As airports become larger and more complex, all travelers can benefit from providing information in multiple formats and through multiple pathways. (Mijksenaar, 2020)

## Passenger journey

The journey starts at home. There is a very big part of the journey that happens before the passenger arrives at the airport (figure 8). Also after arriving at the airport there are different phases and layers of the wayfinding experience (figure 9). Wayfinding designers use passenger journeys as a tool to identify touch points, user needs and wayfinding considerations (Mijksenaar, 2020). The journey below shows the ‘Departing Journey’, as an example of a passenger journey. In the same way, you can also visualize the ‘Arriving Journey’ and ‘Connecting Journey’.

## Sign systems

All different sign types (directional, identification, informational, maps, regulatory and dynamic signs) are part of one connected sign system. Similar to a design system in UX design, but exclusively for signage. A handbook specifies the design principles and guidelines for each sign type (Mijksenaar, 2020).

## Spatial zoning

In a complex environment like Schiphol, multiple parties communicate different messages through various media. To prevent elements from competing for space, effect, and attention, it is important they are organized in spatial zoning. (figure 10) (Mijksenaar, 2020)

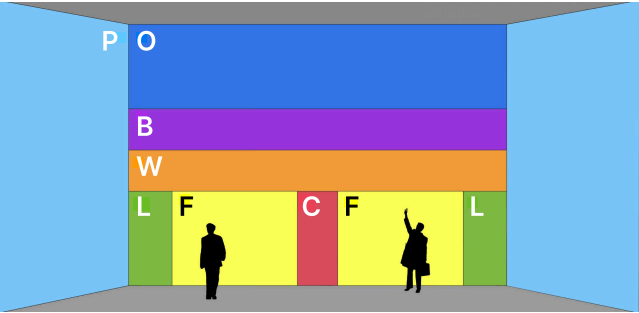


Figure 10: Various zones used in spatial zoning (Mijksenaar, 2020)

There are many guidelines available for each zone:

The flow zone (F) are the corridors where people move, and they should be kept free of visual and physical obstructions.

The wayfinding zone (W) is directly above flow in the natural field of vision to maximize visibility. It contains overhead wayfinding elements, and no other media is allowed in this zone.

The buffer zone (B) is a separation between wayfinding and media zones. This zone is important to provide a visual resting point and maintains the visual harmony.

The overhead media zone (O) is a flexible space high above wayfinding when the ceiling is high enough.

A central zone (C) can be defined when there are flows on both the left and right side. In this zone, information and instructions, rules & regulations have priority over other media.

Lateral zone (L) can be defined on wide flow areas.

A Parallel Media Zone (P) with branded media, commercial media and art plays content on the side walls of a flow area, parallel to the flow.



Figure 8: Passenger journey before arrival on airport (Mijksenaar, 2020)



Figure 9: Passenger journey after arrival on airport (Mijksenaar, 2020)



## 2.3 DOMAIN MODEL

Based on the deeper understanding of wayfinding derived from the deconstruction, the domain model on the right attempts to map its key processes and interpretative lenses. (figure 11)

### Wayfinding model

The domain model of wayfinding behavior consists of two interconnected rings around central sphere. One ring represents internal human factors (people ring), the other external influences (external factors ring). The yellow sphere symbolizes wayfinding behavior itself, influenced by both rings. The space between the rings reveals four interpretative lenses through which wayfinding can be understood.

### The people ring

The people ring in the domain model represents the internal human factors that shape how individuals find their way, both when exploring or more goal oriented. On one side of the ring lies human perception and cognition: the mental processes involved in reading signs, interpreting cues, making decisions, and filtering information based on relevance or urgency.

On the opposite side is spatial awareness, the embodied sense of orientation that draws on memory, movement, and intuitive understanding of space. Together, these two aspects of the ring reflect how internal capacities interact to produce unique navigation strategies.

### The external factors ring

The external factors ring represents the artificial and natural environmental conditions that shape how people find their way. On one side of the ring lies the public space itself, the physical and social environment through which people move. This includes architecture, landscape, spatial layout, and the presence of other people, which can all support or hinder navigation.

On the other side of the ring is the provided information: signs, symbols, auditory cues, digital tools, and other guidance systems. These two sides are always connected and shape the world that we try to make sense of.

### The spaces in between the rings

The perception/attention lens highlights how we visually and cognitively orient ourselves with the (designed) information. This lens sees wayfinding as orientation: it determines what we notice, what pulls our focus, and how we make sense of space.

The navigating lens is about the actual traversal of space and it sees wayfinding as movement. Through spatial awareness and interpretation of information, we can decide routes, adjust paths and reach destinations.

The unconscious lens reflects how much of wayfinding happens beneath our awareness of unconsciously understanding the public space. This lens sees wayfinding as habit: through experience and trained responses.

The experience lens is about how people emotionally or culturally relate to space. A personal and affective experience of perceiving the public space. This lens sees wayfinding as meaning-making, so more than pure functional.

### Cross-cutting themes

In addition to the two rings, and four interpretative lenses, the deconstruction also revealed three overarching dynamics in wayfinding. These themes stretch across the system, influencing both internal and external factors as well as how they are interpreted through the different lenses.

Efficiency and friction form a central tension in wayfinding. Many systems are designed for smoothness, clarity, and speed, especially in high-stress environments like airports. Yet friction, such as moments of doubt or detours, can enrich the experience through discovery. This theme questions whether every form of wayfinding should be streamlined, or whether value can be found in friction and ambiguity.

Governance addresses the question of who designs the systems we navigate, and for whom. Wayfinding is never neutral: it reflects institutional priorities, power structures, and design decisions about accessibility, inclusivity, and control.

Philosophical principles overlap with wayfinding principle and can give interesting insights about how we look at wayfinding. Is wayfinding an act of autonomy and fundamental for humans? What is the relation between the body and cognition? And how are we as humans part of the system?

## DOMAIN: HOW PEOPLE USE INFORMATION TO UNDERSTAND AND ORIENT IN THE PUBLIC SPACE FOR NAVIGATION AND EXPERIENCE, IN 2035.

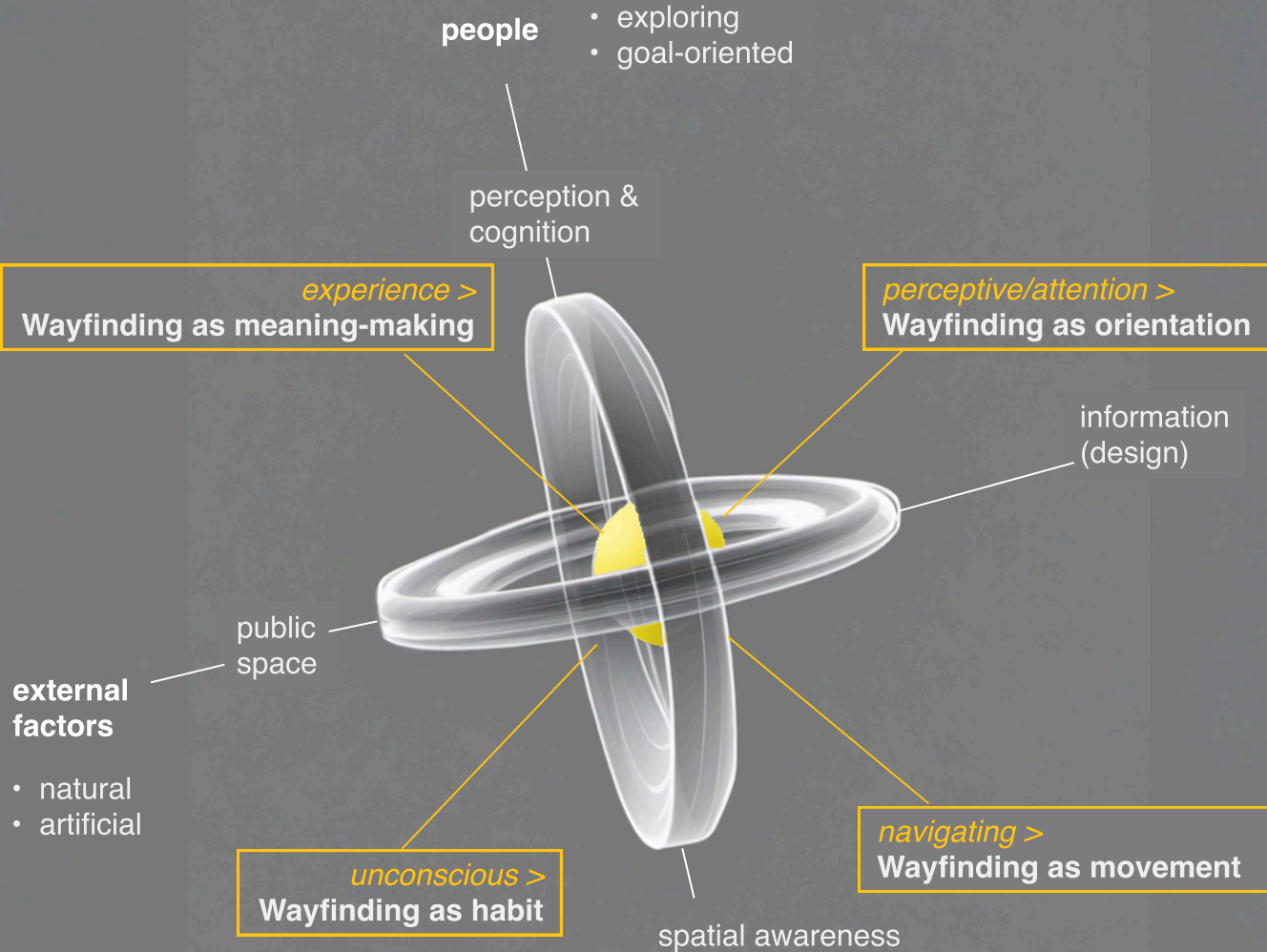


Figure 11: Domain model



# FUTURE CONTEXT

This chapter builds the future context for the previously described domain. It explores what will influence how people will find their way. A total of 150 context factors about wayfinding behavior were gathered through a literature review across eleven related disciplines. The validity and completeness were evaluated through a workshop with Mijksenaar's wayfinding experts.

The context factors were combined into eleven future patterns that describe movements within the domain. These patterns determined the two dimensions that structure the design framework: sense-making of space and authenticity of place. Together, they form a matrix of nine behavior typologies that describe how people will find their way in 2035.

# 3.1 GATHERING AND CLASSIFYING CONTEXT FACTORS

## Approach of gathering context factors

Designing for a future wayfinding context begins by identifying relevant context factors. These are value-free bits and pieces of the world that show observable developments or shifts that may influence how people navigate public spaces in 2035. These factors do not carry design intention or judgment, but rather describe changes in the world that are already unfolding (Hekkert & Van Dijk, 2011).

Collecting context factors is done by the designer, through literature research. It is important to try to collect a set of factors that is as complete as possible for describing the future context. Therefore, a broad range of domains is consulted, as the future behavior of how people find their way cannot be caught in one single discipline. It involves societal transformations, environmental effects, cognitive abilities and technological possibilities. The disciplines that were accessed for this project are biology, culture, demography, economy, ecology, spatial geography, politics, philosophy, psychology, sociology and technology.

The complete overview of the collected factors can be found in appendix A.

In order to check for bias, a context factors workshop was organized with wayfinding experts of Mijksenaar (figure 12) to compare and add their input of influencing factors (not supported through sources) with my preliminary list of context factors. The complete overview of input on context factors can be found in appendix B.



Figure 12: Context factor workshop with Mijksenaar colleagues.

## Four types of context factors

Context factors can be classified as principles, states, developments and trends. Since we are predicting the future, we both need factors that will shape and change the future, but also stable factors of things that remain constant in the future. (Hekkert & Van Dijk, 2011)

Principles are fundamental truths or evolutionary patterns. Very stable and resistant to disruption.

e.g. *“People are better at navigating in environments that were topologically similar to where they grew up. This navigation ability is linked to the entropy of (city) street networks. (Coutrot et al., 2022)”*  
→ spatial geographical principle

States are temporal configurations and norms that are still relevant within the project’s timeframe.

e.g. *“People are using social media to find places of interest (Van Canneyt et al., 2012)”*  
→ cultural state

Developments are structural or policy driven shifts that evolve gradually.

e.g. *“Users might experience a decline in task-based cognitive abilities, such as decision-making and problem-solving, as they increasingly depend on AI for decision-making. (Macnamara et al., 2024)”*  
→ psychological development

Trends are emergent behaviors, attitudes, or signals that reflect evolving social or cultural dynamics.

e.g. *“The book Data Feminism emphasizes the importance of considering that power is not distributed equally in the world. Data science is not neutral and needs more fair approaches that challenge existing hierarchies. (D’Ignazio & Klein, 2020)”*  
→ sociological trend

## 150 context factors

The context factors were identified through a combination of literature research, an interview with artist John Körmeling, ongoing discussions during coaching sessions and a workshop with Mijksenaar experts to evaluate completeness.

The process was layered and iterative: new ideas and perspectives in conversations or articles led to deeper dives into literature, while initial research shaped already a diverse range of influencing factors. Rather than following a strictly linear path, insights emerged gradually and through doing. In particular, the dialogue with John Körmeling offered a valuable outsider perspective that challenged the idea that current developments in people, society and technology are good.

Eventually, 150 different context factors were collected through the background of 11 fields. The context factors are distributed across the different fields and types of factors, as can be seen in the context factor distribution table (figure 13). Because of the different lenses as described in the previous chapter (figure 11), relatively more context factors were gathered in the fields of psychology and technology. On the other hand, economical and ecological factors are represented less. This doesn’t mean they are less important, but it underscores the emphasis of the research.

## Context factor workshop Mijksenaar

In the workshop with wayfinding experts of Mijksenaar, everyone was asked to write down factors they think would have an effect on wayfinding in 10 years. In group they were asked to cluster the post-its into future patterns. (appendix B)

*Group 1*  
Tech dependency and convenience affect people. Concerns and resistance to AI and power of big tech. Analogue movement. Society is affected by polarization and more differences require different needs.

*Group 2*  
AI and digital world lead to dependency of human on technology. Society is aging and will be increasingly isolated. Wayfinding will face new infrastructures and be shaped by personalization, multi-sensory experiences and beyond visual.

*Group 3*  
More digital, less human. Tech, policy, AI, powerful individuals control movement. No serendipity. Information in own bubble. Getting lost and intuition become a choice. Climate change influences priorities for navigation behavior. Means of navigation and orientation affected by migration and growing differences poor and rich.

# 150 CONTEXT FACTORS THAT SHAPE WAYFINDING BEHAVIOR IN 2035

	biological	cultural	demographical	economical	ecological	spatial	political	philosophical	psychological	sociological	technological	
developments	1	3	4	3	2	2	4	0	3	3	3	28
trends	0	8	1	1	0	3	4	0	3	4	10	34
states	3	1	1	0	1	4	4	13	10	7	4	48
principles	7	3	0	0	0	4	4	1	17	1	3	40
	11	15	6	4	3	13	16	14	33	15	20	150

Figure 13: Amount and distribution of context factors across research fields and factor types



# 3.2 STRUCTURING THE CONTEXT

**Emerging patterns**  
The individual context factors must be combined to be meaningful for shaping a future. Therefore, the factors are clustered into emerging patterns that describe how people interact in the future context (Hekkert & van Dijk, 2011). From the factors, eleven patterns were derived (figure 14), the numbers in the white circles indicate the corresponding context factors (appendix A)

**paradox of authentic human dwelling**

The philosopher Heidegger (Cresswell, 2012), described the concept of dwelling, where humans authentically engage with their surroundings. The physical human connection with place is changing, which means that sensory and intuitive ways of being are fading. This offers a path to restore deeper, conscious engagement with the world.

45

6

140

138

78

85

49

7

68

149

65

143

43

108

137

134

139

107

2

93

71

**longing for the human dimension**

In a fast, digital, and efficiency-driven world, where life becomes more controlled by data and technology, many people start to miss real connection, recognition, and a natural rhythm. They long for the human dimension.

28

8

147

109

120

40

22

3

106

115

87

95

91

98

123

150

**recognition of differences through nature and nurture**

Differences in behavior and cognitive strategies are attributed to both biological and environmental factors. You are shaped by genetics and patterns in which you grow up.

61

20

19

81

77

4

75

5

63

**governance: invisible management of behavior**

Technological systems, privatized spaces and controlled information increasingly shape human behavior. Invisibly, individuals lose autonomy. While the need for responsible and accountable governance through global challenges, the actual mechanism of power becomes more hidden and fragmented.

86

96

55

41

54

142

90

24

136

26

128

130

70

126

129

122

57

146

51

135

**efficiency harnesses complexity**

Efficiency shapes how complexity is managed. System optimization makes processes more efficient, and people try to spend their time more efficiently, but at the same time it raises the question if the user's readiness to new technologies can follow the efficient pace.

144

112

10

16

92

127

141

35

62

94

**acknowledging the world's growing complexity**

Accepting and engaging with an increasingly interconnected, uncertain, and dynamic world, while acknowledging past and current injustices, inequalities and power imbalances. With this open mindset and adaptability, we can address - not simplify - complexity.

72

37

29

25

38

31

44

50

46

76

73

124

118

89

**changing global power**

Growing global inequalities are driving a reorganization of political and economic governance, while at the same time, cultures become more hybrid, and this reflects a shift in societal structures and power balances beyond traditional Western frameworks.

34

53

14

30

33

69

58

116

11

121

32

59

**decentralized emotional narratives create own information bubbles**

As traditional narratives lose their influence, people turn to personal experiences and emotions to make sense of the world. Shared meaning breaks down into personal information bubbles, where people find and share stories that correspond to how they feel.

56

18

99

17

119

60

12

64

114

**resilience & tolerating discomfort**

The harsh modern world requires the human capacity to adapt, endure, and grow through adversity. It focuses on the role of emotional strength and tolerance for uncertainty and discomfort in a challenging world.

79

100

88

145

67

131

113

36

125

21

27

132

84

**problem solving decay**

People are losing some of their natural problem-solving skills as they increasingly rely on digital tools and support. While this doesn't mean people are becoming less intelligent, it reflects a shift in how we think and gain new digital abilities while becoming more dependent on external aids.

1

13

105

117

80

11

104

**fictive human freedom**

In a world shaped by technology and systems of control, the idea of true human freedom and control becomes something we believe in but may not actually have.

13

80

Figure 14: Emerging patterns in the future context

### 3.3 FRAMEWORK OF FUTURE CONTEXT

The final step towards the framework is the dimensions. Through a deep analysis (figure 15) of the relations between the eleven patterns, two dimensions were unveiled: sense-making of space and authenticity of place. (appendix C)

#### Sense-making of space

We live in a society designed by humans, and yet, people continuously search for orientation, direction, and their place within it. As our surroundings grow increasingly complex, integrated with technology and shaped by layered social dynamics, the way we make sense of the world becomes central to how we find our way. This dimension explores three different lenses through which people orient themselves: intrinsic, social and system level.

#### intrinsic sense-making

Internal sense making is based on meaning derived from personal intuition, embodied experience and reflection.

#### social sense-making

Social sense making is based on meaning through interactions and cultural narratives.

#### system sense-making

Systemic sense making is based on orientation through data, algorithms and external systems that dictate behavior.

#### Authenticity of place

Our world gets shaped by digital interfaces, algorithmic systems, and engineered efficiency, which makes the concept of authenticity becomes more vital and more complex. What does it mean to be authentic when our daily experience is mediated by systems that predict, optimize, and manage behavior? This dimension of the framework explores how people engage with reality and how they connect to place in a way that feels real, meaningful, and self-directed. As artificial environments and invisible infrastructures grow in influence, authenticity becomes a way to reclaim presence, agency, and connection. It asks: How do we engage with reality and our connection to place?

#### physical authenticity

Physical authenticity is how people relate to and experience the world through their embodied, sensory presence. While tangible connections are changing in the digital world, more awareness about diverse spatial and navigational strategies support pleasant experience in the physical space.

#### cognitive authenticity

Cognitive authenticity is shifting as natural thinking is replaced by technical support skills. Governance now shapes behavior through subtle, invisible mechanisms, making freedom more fictional than reality. Autonomy appears intact but is guided by external systems.

#### emotional authenticity

Emotional authenticity is reflecting a movement where people are tired of the over engineered and efficient system and look for a more natural connection and rhythm. The resilience built in complex society also enables people to overcome more frictional challenges in the 'human dimension' world.

#### Framework

Together, this 3x3 matrix creates the future framework that describes 9 behavior typologies of how people are driven to find their way in 2035. (figure 16)



Figure 15: Playing with clusters and dimensions axes for developing the framework

### A FUTURE FRAMEWORK DESCRIBING NINE TYPOLOGIES OF HOW PEOPLE FIND THEIR WAY IN 2035

#### Sense-making of space



Figure 16: Framework with nine behavior typologies of how people find their way in 2035.

# VISION

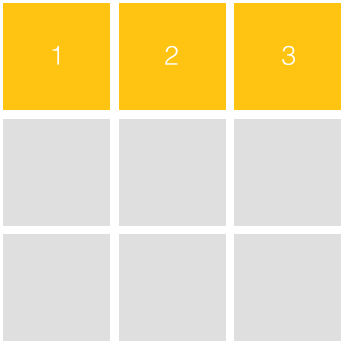
First, the framework is brought into a participatory setting during the Van Abbedebat in Eindhoven on May 8, 2025, where high school students responded to the provocation: *"What if technology dictates movement?"* Their perspectives offer a fresh lens and serve as validation or contrast to earlier findings. Then, the design vision is elaborated for each part of the framework. Finally, guidelines are provided on how spatial guidance strategies can be applied in different contexts, followed by recommendations for prioritization.



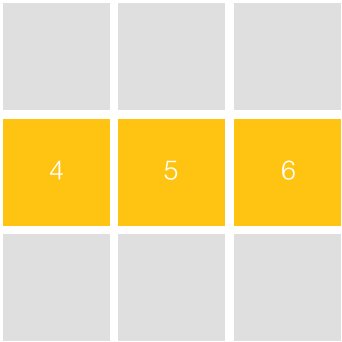
# 4.1 IMPLICATIONS OF PROBABLE FUTURE

The framework as presented in Chapter 3 is a probable future of wayfinding behavior. This is different than a desirable future, as it is more realistic and emerging from the research in the domain. (Hekkert & Van Dijk, 2011)

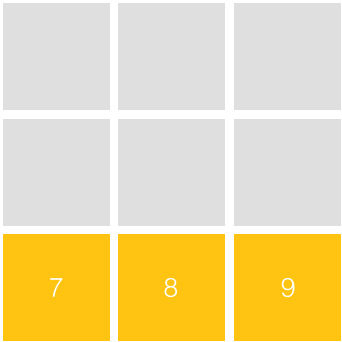
It shows a growing impact of externally regulated systems designed to optimize flow and efficiency. Smart algorithms and predictive technologies increasingly dictate navigation, and people can conveniently move with this system. Nevertheless, the need for a ‘human’ connection and flow remains. Also as individual, people keep the desire for the human dimension, meaning and fulfillment and they search for connection in and with the environment. This creates a multi-layered meaning of future needs. (figure 17)



**systemic layer**  
people become skilled in interacting with the system  
(1) as passive experts  
(2) but with dependency  
(3) with an emotional layer



**social layer**  
people are looking for connection to other people  
(4) to move together  
(5) to feel related to  
(6) to connect to by place



**intrinsic layer**  
people search connection with environments for  
(7) connecting to intuition  
(8) inner reflection  
(9) deep experience

Figure 17: behavior implications of framework

**Participation in Van Abbedebat**  
The systemic impact of technology on how we find our way, was explored by participating in the Van Abbedebat (Bureau Drijfpunt, 2025), a competition for high school students by cooperative dialogues. As part of the jury and guest speaker, I introduced a provocative question to start an explorative dialogue: *“What if technology dictates movement, and people loose the freedom to get lost?”*

Their conversations questioned: Is getting lost still truly getting lost? Is curiosity still valued in our society? What is the influence of technology on human development? Their answers implied that technology both shapes and challenges our relationship with exploration. (see appendix D&E)

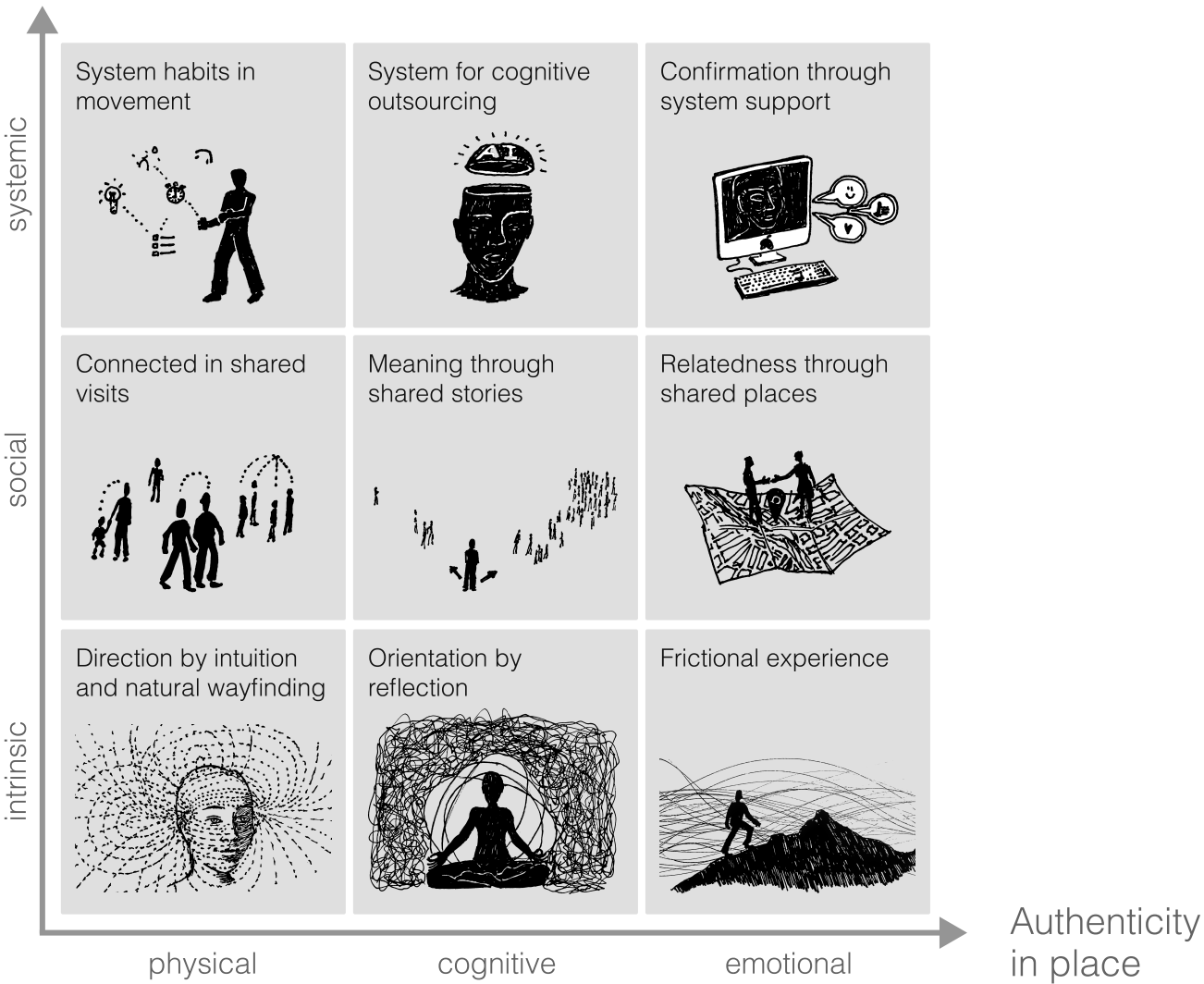


Figure 18: Van Abbedebat (Photo: G. van der Wegen, 2025)

# 4.2 EXPLORING THE TYPOLOGIES, FROM FRAMEWORK TO DESIGN

In order to explore how the nine typologies can be manifested, each one is addressed by a design vision. The following section shows for each behavior typology a vision statement, analogy and product qualities. The vision statements establish a position and vision to respond to the future world, the analogy describes the human-product interaction and the product qualities are the derived qualitative characteristics that are desired in the outcome of the design. (Hekkert & Van Dijk, 2011)

## Sense-making of space







### Systemic layer

In the upper layer of the framework, people become skilled in interacting with the system. They smoothly change mode of transport, use apps to plan forward, check-in and pay with chips or biometric identification. Beyond technology and efficiency, the system helps people to simplify complexity and enhance the wayfinding experience with an emotional and supportive side.



### System habits in movement

#### system x physical

People navigate by relying on routines and adaption to technological systems, prioritizing efficiency over awareness.

In this state, people navigate through smart and complex environments, based on trained habits in movement. Early visions in wayfinding already describe how cognitive maps (Lynch, 1964) let people flow through known spaces without the need of consciously decoding every signal. It is an embodied intelligence shaped through practice (Arthur & Passini, 1992). The current technological system is shaped by efficiency and optimization, rather than slowly building your own cognitive map.

This behavior reflects a kind of passive expertise. People become highly skilled in interacting with intelligent systems, but their awareness of the physical environment decreases. Their navigation is smooth and optimized, yet disconnected from bodily presence or spatial interpretation, and the convenience makes them lazy. When efficiency becomes the dominant mode, it leaves little space for intentional engagement, personal agency and spatial intuition.

### Design vision

In future smart environments, habits are no longer grounded in human instinct but shaped by the logic of systems. My personal vision is that next to optimizing the system for greater convenience, there should be the human perspective that gives fulfillment. The vision statement is:

“I want people to reclaim agency in movement by transforming routine into intention.”

#### ANALOGY: SURFING

Like choosing the right wave to surf: movement becomes a balance of trained intuition and real-time decision, action comes from deep awareness and well-timed action in a changing environment.

#### THE QUALITATIVE CHARACTERISTICS

##### INTUITIVE

The action requires sensitivity to timing, rhythm, and changing conditions. You read the environment rather than control it.

##### RISK

You commit without full certainty of outcome. It requires confidence and vulnerability.

##### FLOW

Once in motion, you adapt second by second.



### System for cognitive outsourcing

#### system x cognitive

People navigate by offloading mental effort to systems designed to simplify decisions. They seek clarity and relief from overload.

In this state, society grows overwhelmingly complex (Lipwski, 1975) and people orient themselves by externalizing decision-making to intelligent systems. They turn to apps, maps, algorithms and AI for help in sorting and pre-selecting simple options. This creates a great sense of convenience, but also a growing dependency. People become skilled at interacting with system-generated options, while they slowly lose their capacity to reflect, compare, and choose independently. Orientation becomes more abstract, and sense-making becomes flattened into seamless interaction, although convenient.

This typology reflects a culture shaped by optimization and frictionless design. It shows how the desire for mental simplicity can lead to disconnection from the reasoning behind the choices and personal agency.



### Confirmation through system support

#### system x emotional

People navigate by seeking emotional feedback from systems that anticipate, shape, and regulate their mood and behavior.

In this state, people's experience is influenced by the response of emotionally intelligent systems. In the future these systems develop from personalized interfaces with adapted tone of voice, or mood-boosting playlists into advanced emphatic systems with fully integrated well-being and health feedback. The system feeds comfort and avoids disruption, but at the cost of surprise, discomfort, and personal emotional growth.

The emotional confirmation helps people feel better, safer and more stable. Without, people feel more uncertain or lost, and a little emotional feedback can give them the confidence that they are going in the right direction and how they are feeling while going there. Through continuous interpretation of your data, people start to think that their personal devices know better what is good for them than themselves.

### Design vision

The objective in this state is not to eliminate complexity, but to help people navigate it. When the logic of the systems is transparent, people can stay mentally involved. The vision statement is:

“I want people to be able to make own choices by recognizing what matters to them, even when you have many things to process.”

#### ANALOGY: KIESWIJZER

Like the example of the Dutch Kieswijzer, a tool for political orientation: it does not give answers, but structures the thinking process, and helps you to choose for yourself.

#### THE QUALITATIVE CHARACTERISTICS

##### GUIDING

It takes you step by step through the process.

##### EASILY ACCESSIBLE

Requires users minimum preparation and the questions in the survey do not take a lot of time.

##### VERIFIED

The product is a non-biased tool, which gives people trust for objective orientation.

### Design vision

The goal in this state is to support meaningful emotional experiences, while keeping the agency to select what data and input they want to share and how they want to get surprised and emotionally challenged. The vision statement is:

“I want people to express their emotions openly, so that systems support them more meaningfully.”

#### ANALOGY: COOKIES

Like selecting cookies on a website, that then will present you targeted content and a personalized experience.

#### THE QUALITATIVE CHARACTERISTICS

##### SINGLE INTERACTION

In theory you only have to give consent once, and then the cookies will track the behavior without conscious feedback interaction with the user.

##### VALUABLE DATA RETURN

Using data to improve and personalize experience.

##### SURPRISING

When algorithms are ‘smart’ or trained well and can give content suggestions beyond the basic, they can surprise the user.





**Social layer**

In the middle layer of the framework, people are looking for a connection with others. Being with company has an impact on the individual behavior of each person. Also in a solo visit, ‘being among others’ still influences the experience, as other behaviors in a place already tell information about what there is to see or do. Lastly, a place that is meaningful for different people, can create a social connection.



**Connectedness in shared visits**

**social x physical**

People orientate in shared presence and subtle coordination, where mutual reassurance shape how people navigate uncertain spaces.

In this state, navigation and orientation are shaped not just by destination, but by the presence of others and the emotional safety of known environments. Especially in uncertain or overwhelming situations, people move with greater confidence when they feel supported. Safety can come from friends walking beside them, a familiar place nearby or by the confidence that you will find back each other when drifting apart.

Together, people subtly coordinate by adjusting pace, scanning for others, holding back thoughts or decisions. Movement is not about speed or independence, but more about the collective alignment, because people stay aware of the other person(s). Sometimes, being together is more important than getting directly to the destination. As we move, we care about not losing one another and staying close to share experiences.

**Design vision**

In this state, my vision is to support exploration without the anxiety of disconnection. The vision statement is:

**“I want people to feel mutually supported in shared visits, so they can explore at their own rhythm without social tension”**

**ANALOGY: WALKIE-TALKIE**

Like playing with walkie-talkies in the forest as kids. The walkie-talkies are a way of connection that allows people to move in their own rhythm, check in when needed and feel reassured without being watched.

**THE QUALITATIVE CHARACTERISTICS**

**LOOSE COORDINATION**

There are little rules about how to communicate, and you can follow your own rhythm.

**REASSURANCE WITHOUT SURVEILLANCE**

There is freedom in each other's rhythm without checking the other in a controlling way.

**LOW FRICTION FOR RECONNECTION**

When the need is there, it is fast and easy to reconnect.



**Meaning through shared stories**

**social x cognitive**

People orient themselves by following narratives shaped by collective behavior, where attention defines meaning.

In this state, people orient themselves through narratives that shape attention and desire. People seek resonance with other stories and a need for belonging, but they also seek uniqueness to turn a collective moment into something personally meaningful. This creates a highly reactive form of finding your way. Movement becomes a social reaction where people chase after hotspots, replicate content, and gather around what is seen as collectively validated.

This behavior is related to narrative psychology, which builds on the idea that human beings use narrative to construct meaning and make sense of the world (Bruner 1986). And more than a way to represent reality, Bruner (1986) describes narrative also as a fundamental way of shaping it. When a story is told, it feels distant. But when people can connect it to their own values, memories, or curiosities, the story gains personal significance. (Popp-Baier, 2013)



**Shared places of belonging**

**social x emotional**

People experience space through a sense of belonging, memory and shared identity. They navigate on autopilot to the places that have a meaning for them, people know where they have to go.

In this state, orientation is guided by meaningful connection to people, places, and past experiences. It could be the way back home, a place that feel like a second home, or somewhere you know you can expect something good. Such locations are shaped by personal or shared experienced. They feel familiar, safe and meaningful. Wayfinding here, is less about finding your way, because you already know where to go.

This typology reflects a human-centered and culturally connected approach to orientation. It is based on the idea that spatial understanding is not just functional or visual, but deeply relational.

**Design vision**

In in a world saturated with social narratives that connect and polarize us, it is important to make space for interpretation. The vision statement is:

**“I want people to sense how shared stories shape collective movement; and reflect on their own role: follow the crowd, question it, or create their own path.”**

**ANALOGY: CHOOSING A BOOK**

Like choosing a book in a bookstore: do you pick the bestseller, already validated by the collective opinion? Or you want to get something different and discover a new unknown story?

**THE QUALITATIVE CHARACTERISTICS**

**LARGE DIVERSITY**

There are many options, and for everyone there is something.

**EVERY CHOICE IS OKAY**

Nobody will really judge about what book you buy.

**DIFFERENT INFORMATION CUES**

The cover, stickers and informing signs in the shop indicate collective patterns, so you can choose how to relate to it.

**Design vision**

Building upon theory of Yi-Fu Tuan (1977) of space and place, the vision is uniting people through their perception of the place. The vision statement is:

**“I want people to connect through shared places, by letting them come together on places that are meaningful for them”**

**ANALOGY: GOING SOMEWHERE ON AUTOPILOT**

Like the route to your best childhood friend. At first, you noticed every house and crossing. But over time, it became second nature. You navigate subconsciously with your mind already at the destination, rather than on the way there.

**THE QUALITATIVE CHARACTERISTICS**

**FAMILIARITY**

The place feels known and recognizable. It is easy and safe to be there because you belong there.

**EMOTIONAL RESONANCE**

The memories of the place give a deeper meaning to the space.

**EASILY APPROACHABLE**

The place is welcoming and easy to enter, without barriers or intimidation.





### Intrinsic layer

In the bottom layer of the framework, people try to find their way through presence in the environment. They rely more on intuition and natural wayfinding abilities, quiet reflection and deep-felt experiences. These types of behaviors are all more slow but create a deeper sense of fulfillment and inner strength.



### Direction by intuition

#### intrinsic x physical

People orientate by reconnecting with their natural orientation skills, using bodily presence and sensory awareness to tune into the rhythm of space.

In this state, people navigate public space through their intuition and senses. As reaction to the efficient technological systems and from a sense of cognitive health, people want to keep their natural ability to navigate and orientate through a physical connection with their environment. Rather than following optimized routes or prescribed paths, people move with curiosity and presence, guided by personal rhythms, spatial awareness and intuitive cues.

This mode of navigation is slow, analog, and deeply human. You have to rely deeply on your senses in a way that was once natural in our human history. It is a way of reawakening dormant skills, instead of navigating only by knowing. Therefore, this mode is also interesting for children to develop natural wayfinding skills.

### Design vision

The design ambition is to support people in rediscovering natural orientation; to train the dormant skills. The vision statement is:

“I want people to rediscover their orientation skills through physical presence.”

#### ANALOGY: REMEMBERING A ROUTE IN NEW CITY

Like the first time you remember a route without searching in your new city. It takes some time to get familiar and feel confident that you can trust your intuition.

#### THE QUALITATIVE CHARACTERISTICS

##### EMBODIED LEARNING

After some time, the route feels natural because learning happens through the body.

##### GRADUAL FAMILIARITY

After some time you can construct a mental map of the surrounding, through repeated exposure.

##### GIVES CONFIDENCE

The fact that you don't need external tool to find your way boosts confidence in your own abilities.



### Direction by intuition

#### intrinsic x cognitive

People orient themselves about their way in life and they use the public space as a spatial mirror for quiet thought, inner clarity and personal orientation.

In this state, public space becomes a spatial mirror of reflection, and people are in search for places of stillness, perspective and immersion. They move slowly, pause often, or even sit or lay down, to allow them to think, imagine or simply be. Navigation is not about the fastest route, but about creating mental space for inner clarity, relaxation, stimulation of creativity.

In this mode, people form meaningful and personal relationships with places. A park bench, a window view, or a quiet square becomes part of an internal process. The act of being somewhere can really help to find your way in life, which makes this a very metaphorical behavior typology of finding your way. Here, wayfinding is not about signs or signals, but about atmospheres, impressions, and the connection between self and place.



### Frictional experience

#### intrinsic x emotional

People experience the space based on meaningful experiences through emotional or physical challenges. Friction and depth is valued over comfort and ease.

In this state, emotional intensity, physical effort or cognitive disruption are not seen as experience failures, but as intentional invitations to engage more fully. Disorientation, unpredictability and struggle create deeper senses, emotions and stories that you keep with you. By intentionally incorporating friction into design, wayfinding can become an embodied, affective experience. One that disrupts automatic habits and reawakens spatial awareness.

This typology is a countermovement to the seamlessness of hyper-optimized environments. It expresses the idea that when everything is controlled, nothing feels alive. So, people let go of the need for certainty or smooth flow and instead choose routes that demand attention, effort and presence.

### Design vision

The objective is to create spaces that support internal navigation, without dominant directions where you need to go. The vision statement is:

“I want people to find personal insight about their way in life through immersive interaction with reflective environments.”

#### ANALOGY: CAMPFIRE

Like sitting by a campfire by yourself, watching the last bits of the fire dying down after your friends already went to sleep after a joyful night. After all stimuli, the place creates stillness to reflect and just be, without the need of getting somewhere.

#### THE QUALITATIVE CHARACTERISTICS

##### SENSE OF TIMELESSNESS

Time seems to slow down or not exist, what creates space for reflection and thoughts to flow.

##### SHIFT FROM COLLECTIVE TO THE PERSONAL

The joy of the group leaves a calm moment to connect to yourself without feeling lonely.

##### STILLNESS FOR PERSONAL THOUGHT

The absence of distraction offer space for reflection without being forced.

### Design vision

My vision is to support valuable friction, instead of smoothing every path. The vision statement is:

“I want people to feel alive by moving in places that demand attention, effort and engagement.”

#### ANALOGY: CLIMBING A MOUNTAIN TRAIL

Like climbing a mountain trail or crossing a river by steppingstones. Each step requires full-body engagement, both physically as mentally. Wayfinding is no longer passive; it is about a journey that is active and felt from the inside.

#### THE QUALITATIVE CHARACTERISTICS

##### FULL BODY ENGAGEMENT

Orientation and movement is physically experienced and embodied


##### FOCUS AND PRESENCE


The environment demands attention and activates their senses and sharpens their spatial awareness of the 'now'.


##### CHALLENGE AND REWARD


When progress requires effort, it brings a stronger sense of fulfillment. In the end, difficulty along the way is what gives the experience meaning.


# 4.3 GUIDELINES FOR CONTEXT APPLICATIONS


- 


**SYSTEM HABITS IN MOVEMENT**  
Typical application in airports, transport hubs, metropolises, museums. Places that are controlled by a optimized flow. Provide strong routine-based cues (colors, rhythms, recurring icons) that enable fast, automatic movement. In low-stress contexts, users can reflect on their intention.
- 


**SYSTEM FOR COGNITIVE OUTSOURCING**  
Typical application in airports, hospitals, train and metro stations and other highly efficient networks. In high-stress or time-critical contexts, offer simplified decision-support tools; in leisure or cultural contexts, leave space for exploration and self-agency.
- 


**CONFIRMATION THROUGH SYSTEM SUPPORT**  
Typical application in museums and cities. Places where people are open to experience the public space in a playful way. However, to pilot test and realize this direction, it requires advancements in data ownership and personalized content development.
- 

**CONNECTED IN SHARED VISITS**  
Typical application in museums, shopping malls, conferences, airports, and all contexts where people move with others. Challenges in shared visits emerge in complex artificial spaces where people split. It is recommended to provide sufficient meeting points.
- 

**MEANING THROUGH SHARED STORIES**  
Typical application in places where there is a lot of gathering around places with collective stories. Visualize collective patterns of hotspots and places with big crowds. so individuals can interpret and decide whether to join or avoid.
- 

**SHARED PLACES OF BELONGING**  
Typical application in cities, public parks, nature, central squares, and especially private places. Places that feel like (a second) home, where people come, gather and return to. Accessibility is crucial for such places. Therefore, entry fees are discouraged for this typology.
- 

**DIRECTION BY INTUITION**  
Typical application in outdoor spaces that have many natural cues to spark natural wayfinding skills. Also indoor spaces with intuitive architecture are suitable for this typology. Combine visual, tactile, and digital layers so that guidance remains resilient when one mode fails.
- 

**ORIENTATION BY REFLECTION**  
Typical application can be found in both quiet places such as in nature, and in busier, inspiring environments such as museums and theaters. An important guideline is to place enough benches or other resting spots in these environments, to find stillness and peace.
- 

**FRICTIONAL EXPERIENCE**  
Typical application in nature, where the route is not easy to be found, or demanding. People might recognize the feeling of this experience from hiking in the mountains, but also in indoor places the senses can be stimulated in a way that requires attention and engagement.

**Relevance for different contexts**  
Depending on the context, certain wayfinding typologies serve as more effective spatial guidance than others. The table below indicates which cells are particularly relevant to specific context applications.

- 

**TRADITIONAL MUSEUMS**  
Museums with a lower priority on user experience and external tools, because their primary focus is on the collection.
- 

**AIRPORTS**  
Stressful and time-critical, airports depend on systemic signage and routinized passenger flows.
- 

**COMPANY CAMPUSES**  
Campuses balance efficiency, identity, and places where employees come on a daily basis on autopilot.
- 

**CITY WAYFINDING - IDENTITY**  
Local landmarks and cultural symbols are a guiding narrative for the city, and invite to explore and visit places.
- 

**UTOPIAN CITIES**  
Highly planned cities like Trojena or The Line, that prioritize sustainability, mobility, tech, and new ways of living.
- 

**THEATERS**  
Wayfinding emphasizes fixed rituals and standard habits, guiding entry and exit more than internal navigation.
- 

**HUGE NATIONAL PARKS**  
Big nature parks like, with wilderness, need very clear wayfinding for a large number of visitors.
- 

**PEOPLE WITH DEMENTIA**  
When autopilot is lost, intuitive cues are very important. Presence of other people guides you to shared spaces.
- 

**EXPERIENTIAL MUSEUMS**  
Museums with a higher priority on user experience and additional layers to enrich the museum visit.
- 

**HOSPITALS**  
Hospitals are high-stakes environments, clarity and reassurance are essential to prevent disorientation and stress.
- 

**TRAIN STATIONS**  
Orientation comes from rhythmic flows, recurring patterns, and instant legibility of routes, destinations are very clear.
- 

**CITY WAYFINDING - CLARITY**  
Cities where functionality and clarity dominates. Maps and grids that optimize intuitive, efficient movement.
- 

**ZOOS AND AMUSEMENTS PARCS**  
The diversity in ages of visitors require coordinated social group movement, and having playful routes for children.
- 

**BIKE PARKING**  
Bike parkings are dense and repetitive, they demand strong recognition cues, often incorporated in daily habits.
- 

**SMALLER SCALE NATURE PARKS**  
Accessible nature allows for short, quiet or familiar visits, guided by intuitive paths and landmarks.



A large, stylized number '5' in white, set against a dark gray background. The '5' is composed of thick, rounded strokes, with a large circular loop at the bottom. It occupies the left side of the page.

# DESIGN FOR LOUVRE IN 2035

In the design phase, the Louvre is chosen as context for demonstrating the framework. The nine behavior typologies of the framework are each explored through an ideation for the Louvre context. The chapter concludes with the concept Pathways, that combines the nine experiences in the Louvre visiting experience.

Together, these elements show how Mijksenaar can apply the framework in a practical context for a user centered wayfinding strategy.





Figure 19: View on the pyramid of the Louvre, Paris. (Irastorza, n.d.)



# 5.1 RELEVANCE OF LOUVRE MUSEUM

The Louvre museum (figure 19) is chosen as fictional context to design for and implement the framework. It is a relevant application for the rich history, diverse interaction that take place, and the meaning of iconic artworks.

## Iconic place

The Musée du Louvre is a symbol of heritage and a global icon of art and history. It is one of the most visited museums in the world, its significance lays in its symbolic weight. Universally known artworks like the Mona Lisa (figure 22), the Venus de Milo (figure 20) and the Winged Victory of Samothrace (figure 21) create strong gravitational points within the museum that pulls attention and concentrates large crowds. The iconicity are also augmented by its location in the heart of Paris (figure 23), the architecture and the characteristic Louvre Pyramid (figure 26).

The huge scale of the museum (figure 27) and the enormous collection make it a fascinating context for wayfinding. With multiple wings, entrances, and around 35,000 artworks spread across 73,000m², thoughtful design is essential to help visitors orientate, navigate and experience the complexity.

## Visitors in the Louvre

The Louvre receives over 8 million visitors per year, from a very wide range of backgrounds, varying from first-time tourists to art historians, families to solo travelers and school groups to culture travelers. This diversity introduces a range of expectations, behaviors, and needs. Some people follow must-see highlights, while others seek personal, reflective experiences with art and wander through the museum's many wings.

The diversity of the visitors makes it a challenge to propose one design that is valuable to all visitors. However, different people can still have the same needs, that can be addressed in different ways. For example the need for knowing the shortest route, the need for information about the art, the need to be with others and the need for belonging and fulfillment. The typologies of the framework describe these situations and states, that influence their wayfinding behavior.

## Different types of wayfinding

Wayfinding at the Louvre is deeply layered. At the one hand, there is a strong need for directional wayfinding. Basic needs as restrooms, elevators and exits, but also to famous must-sees within the museum like the Mona Lisa. On the other hand, the museum also encourages explorative wayfinding, where visitors drift through collections, follow curiosity, or get intrigued by unexpected artworks. This duality creates an interesting challenge: how can wayfinding systems support clear orientation, purposeful navigation and meaningful wandering? Furthermore, the wayfinding support should just be a modest layer, that is not distracting other visitors.

## Evolving of the space

The building of the Louvre was an already existing space. It was originally built as medieval fortress, and later transformed into a royal palace. Around the French Revolution in 1789, parts of the Louvre were turned into a museum. In July 1983, I.M. Pei was appointed as architect of the Grand Louvre project for expanding and modernizing (figure 24). For a duration of 2 years, he observed the museum as an ordinary visitor to feel the place, get to know

the culture and experience the area to internalize the space of the Louvre (Murtezaoglu, 2025). In the center of the symmetrical wings, stands Pei's iconic glass pyramid (figure 25), completed in 1989 - the same year as the start of Schiphol wayfinding by Mijksenaar. The entrance is translucent, both to define the visitor's arrival and to light the underground addition, all in respect to the historic buildings. (Evitts Dickinson, 2017)

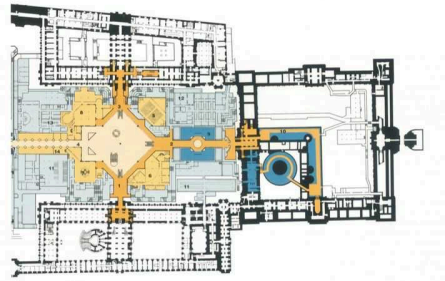


Figure 25: Plan for Grand Louvre (Wolf, n.d.)

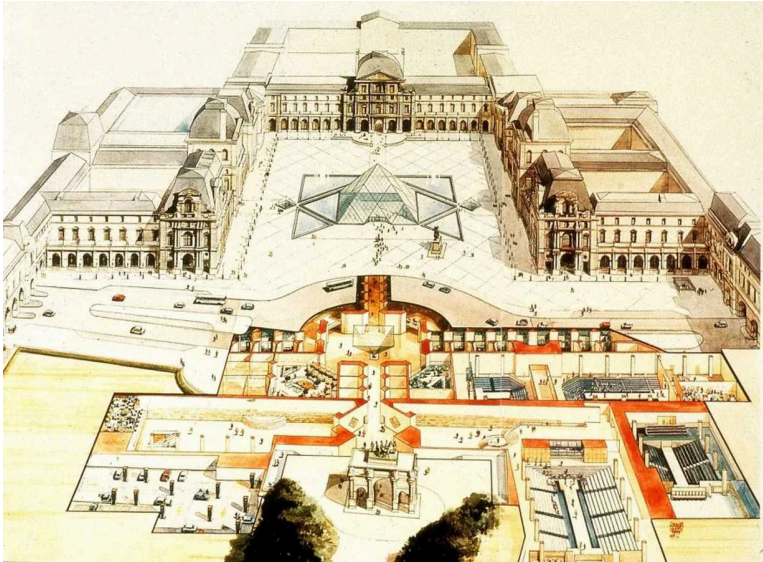


Figure 24: I.M. Pei sketch, 1984 (Pei Cobb Freed & Partners, 2017)

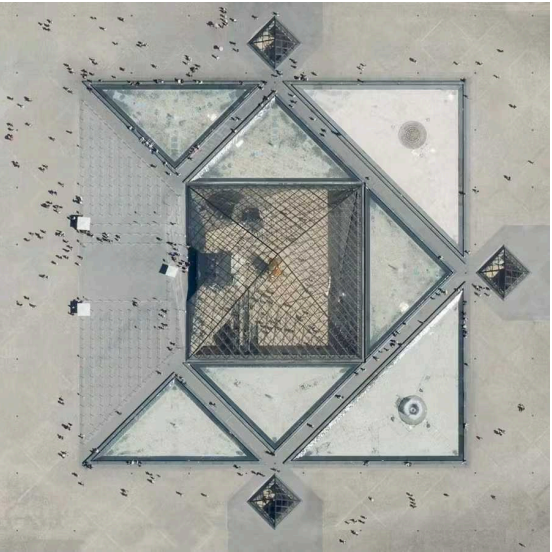


Figure 26: Loure Pyramid (Overview, 2019)

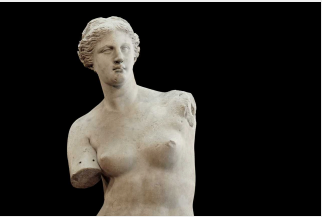


Figure 20: Venus de Milo (Jastrow, 2015)



Figure 21: Winged Victory of Samothrace (Jastrow, 2015)



Figure 22: Mona Lisa (Wikimedia Commons, n.d.)



Figure 23: Louvre in paris (Wolf, n.d.)

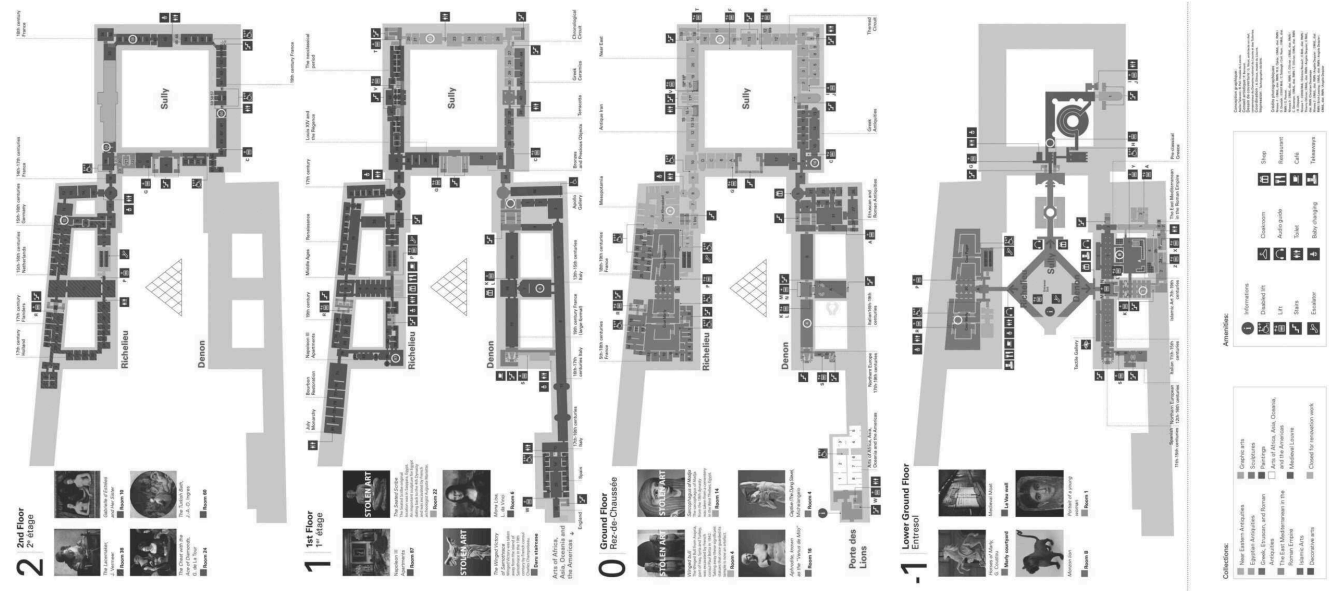


Figure 27: Map of the Louvre (Sultan, 2015)

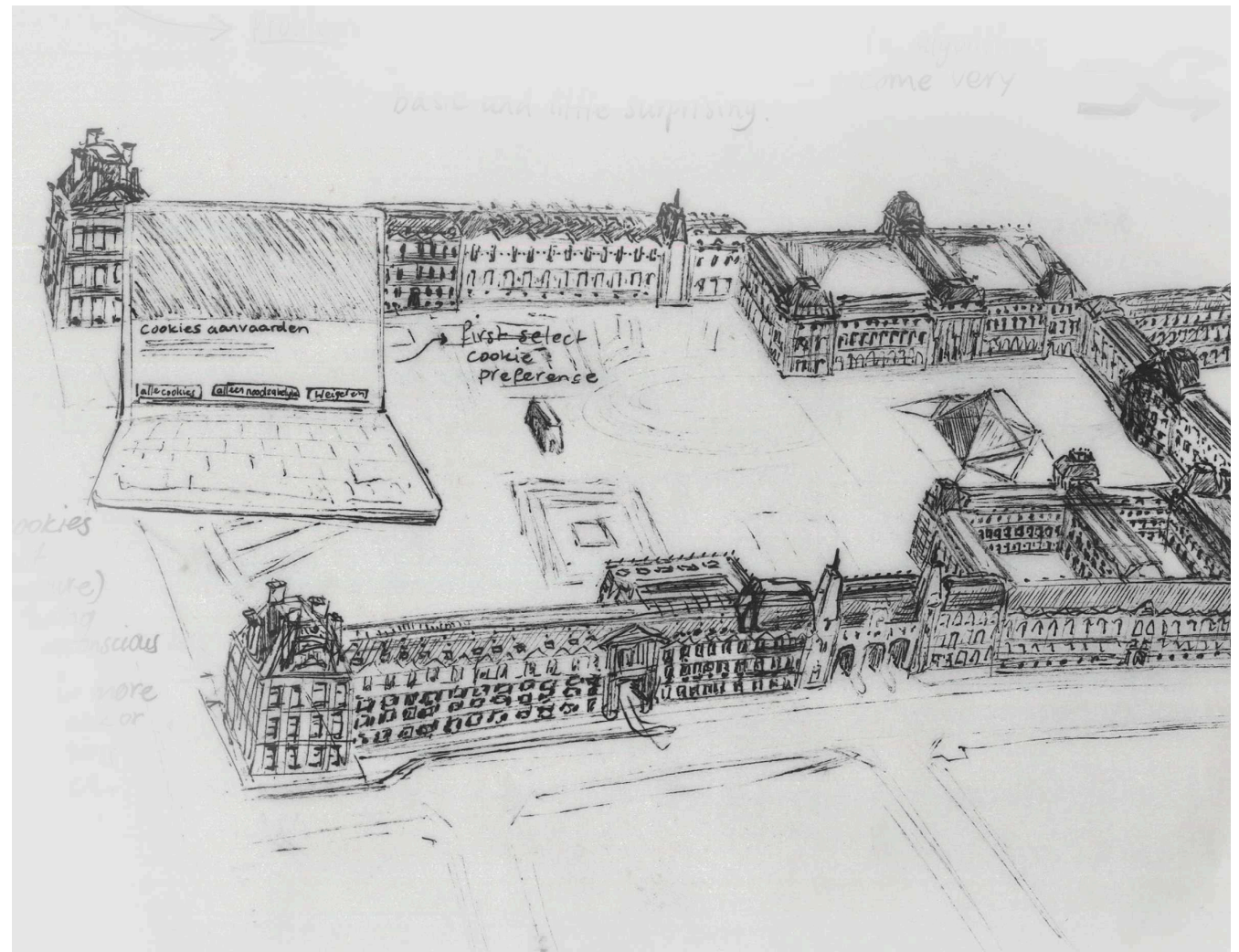
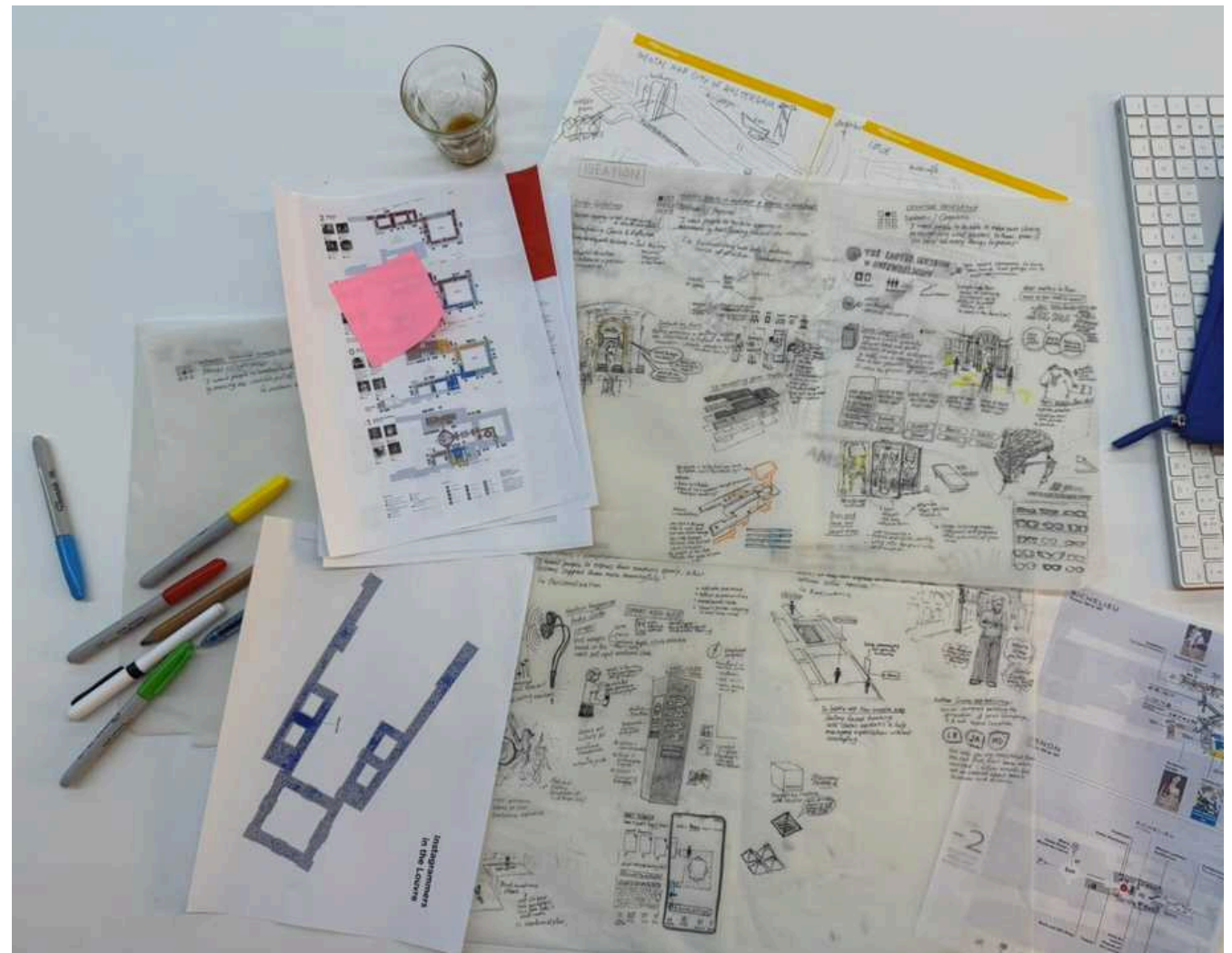


## 5.2 ILLUSTRATING THE TYPOLOGIES FOR THE LOUVRE

## Nine ideation explorative studies

To illustrate what these design visions can mean for Louvre, all nine vision statements are elaborated through a explorative ideation for concept ideas that match the vision (Hekkert & Van Dijk, 2011). Each of them corresponds to one of the behavior typologies of the framework.

The approach was to ideate closely from the provided design analogy and incorporate the product qualities into the design. Sketching is my personal expression to get ideas 'popping into my mind'. As a condition for the mind to wander and suddenly get new ideas (Hekkert & Van Dijk, 2011) The ideation sketches as explorative studies are presented in the next pages.







These ideation sketches explore the top left and middle typologies of the framework.

For moving with more intention, it was explored that when you are mapping your route in a 3D representation, you would be more aware of the moving directions and how you plan your route. The other idea of intention doors, make your path a decision tree in the moment.

For the cognitive offloading, simple questions and options like the 'kieswijzer' guide you to planning your personal route. The ideation explores different ways of how to 'feel and sense' your personalized route.

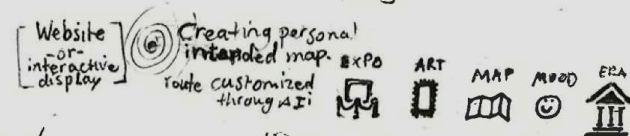
## ■ ■ ■ TRAINED HABITS IN MOVEMENT → AGENCY IN MOVEMENT

### ■ ■ ■ Systemic/Physical

"I want people to reclaim agency in movement by transforming routine into intention."

↳ Reconnecting with body's authentic sense of direction. (Embodied navigation)

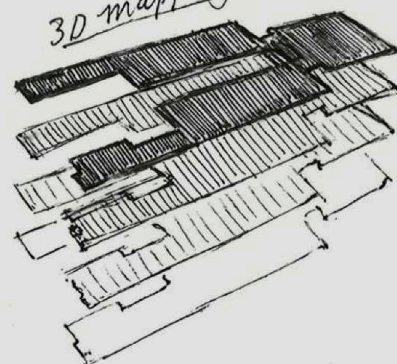
reacts in space — How the body — Senses — moves



#### Intention door

Before entering a gallery visitors are stimulated to reflect on their intention (maybe combine with audio tour)

3D mapping your route



through the website with an online tool or at the entrance there are digital kiosks where you can build your intended map that will be printed for your museum visit.

#### Intention door



What brings you here?

What are you hoping to feel?

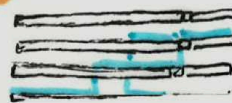
What do you expect to see?

The Louvre is so big that you have to choose, can't do everything in 1 day indicate:

- time available
- pace of visit (direct through questions?) "reading or wandering?"

Knows • crowdedness

you get a 3D map with a wire that you can place through the map through the holes that indicate stairs/elevators. The length of the rope indicates the length of your route.



## COGNITIVE DELEGATION

### ■ ■ ■ Systemic/Cognitive

"I want people to be able to make own choices by recognizing what matters to them, even if you have too many things to process"

## ◎ THE LOUVRE MUSEUM = OVERWHELMING



too much art



too many people

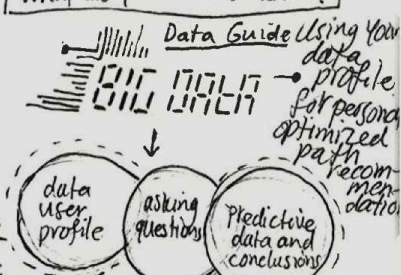
too much directions

• easy  
• meaningful  
• personal relevance

you want someone to take your hand that brings you to your destination.

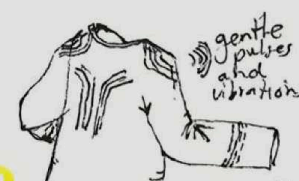
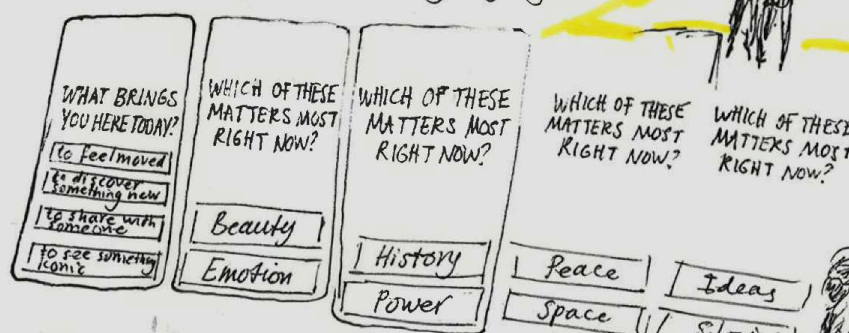
What matters to them.

What do you need to know?

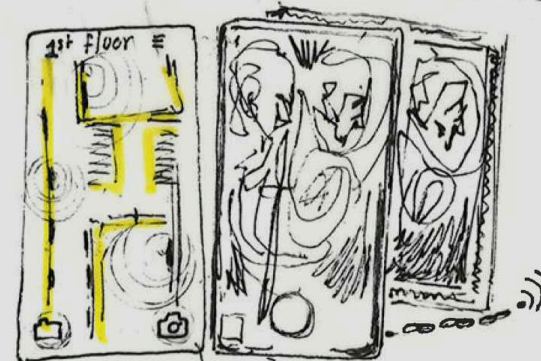


(people lose their sense of curiosity or interest, and default to what others do.)  
↳ Where is the Mona Lisa?

Louvre Compass Cards ♦ Dixit  
physical simple beautiful designed card with guiding questions → answer corresponds to subtle cue in signage to guide them to their personal experience. It calms the pressure of "seeing everything"



Haptic Rhythmic Flow shirt  
→ guides direction  
→ notices when you pause  
→ smart.



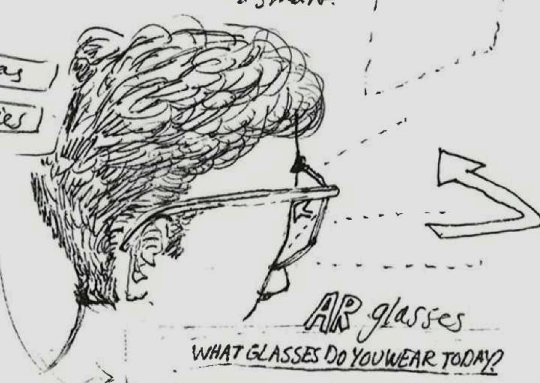
App with map and route

Scan and Save art Smart map

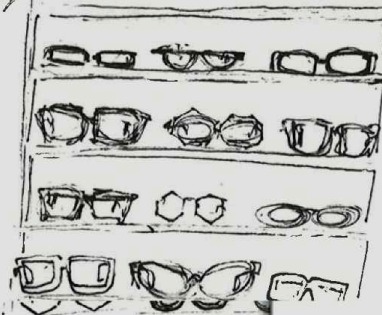
- scan by making a picture and let AI identify.
- using NFC for proximity confirmation.

describe what you like about it.

Large language model interprets and proposes other artworks on your route.



AR glasses  
WHAT GLASSES DO YOU WEAR TODAY?

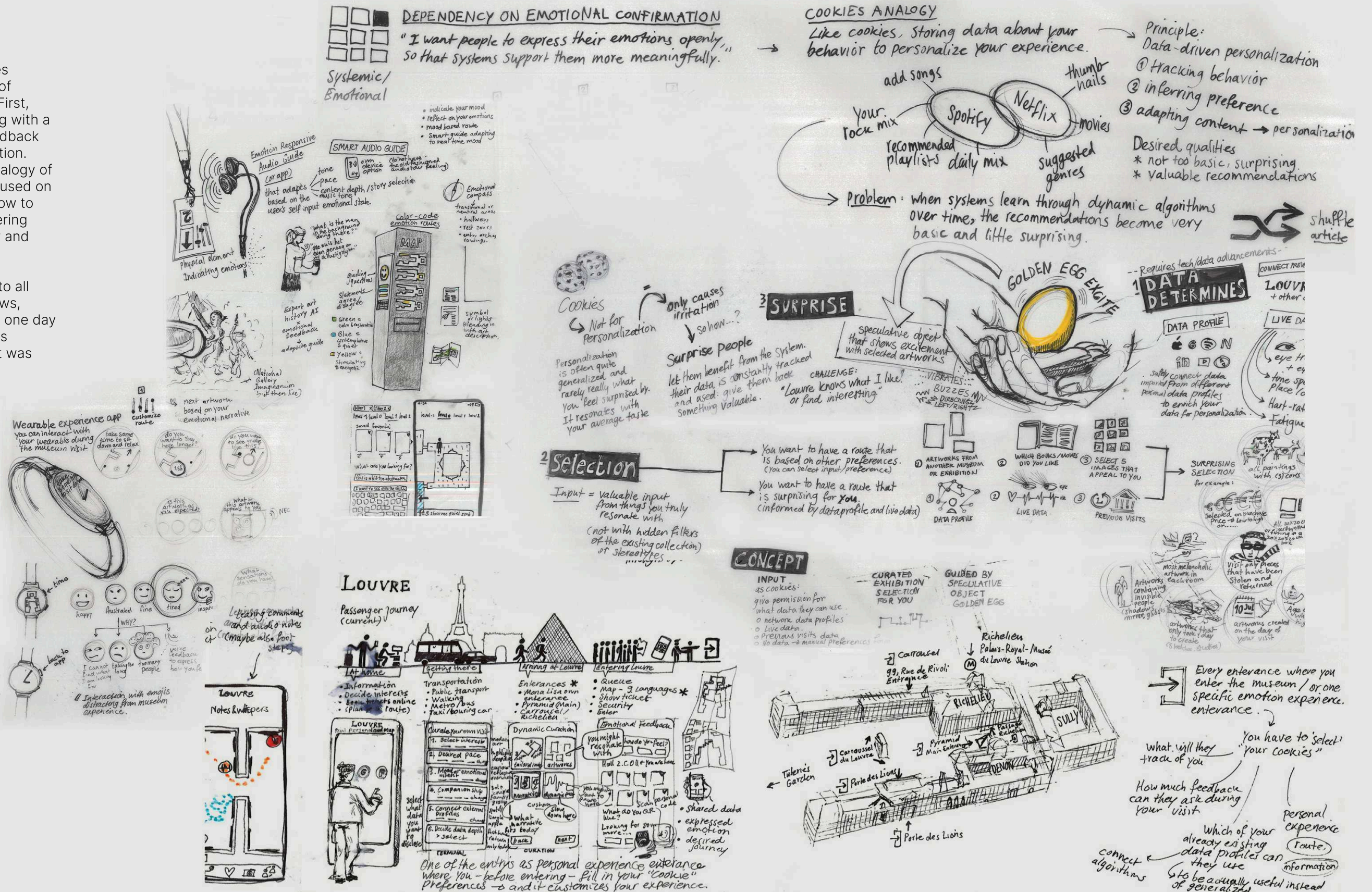






These ideation sketches explore different ways of surprising experience. First, starting from interacting with a personal device for feedback on your emotional reaction. Then, guided by the analogy of cookies, later ideas focused on the system 'knowing' how to surprise, based on entering data and making a new and imaginative selection.

E.g., routes taking you to all paintings with three cows, artworks that took only one day to create, work that was created when the artist was your age, etc.

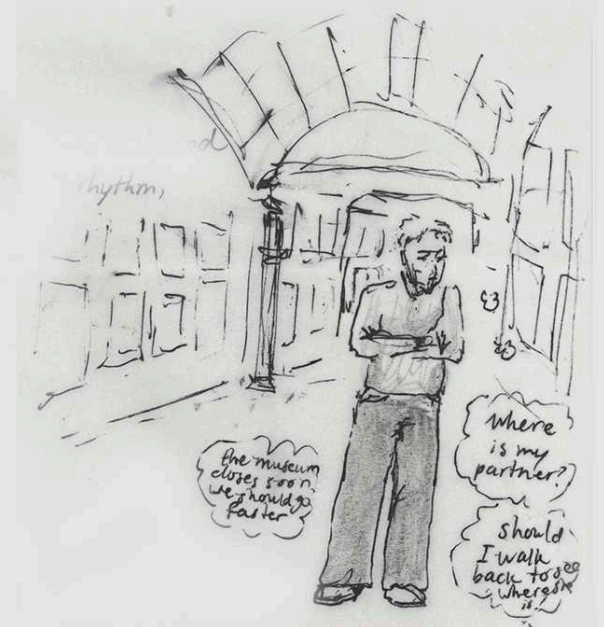
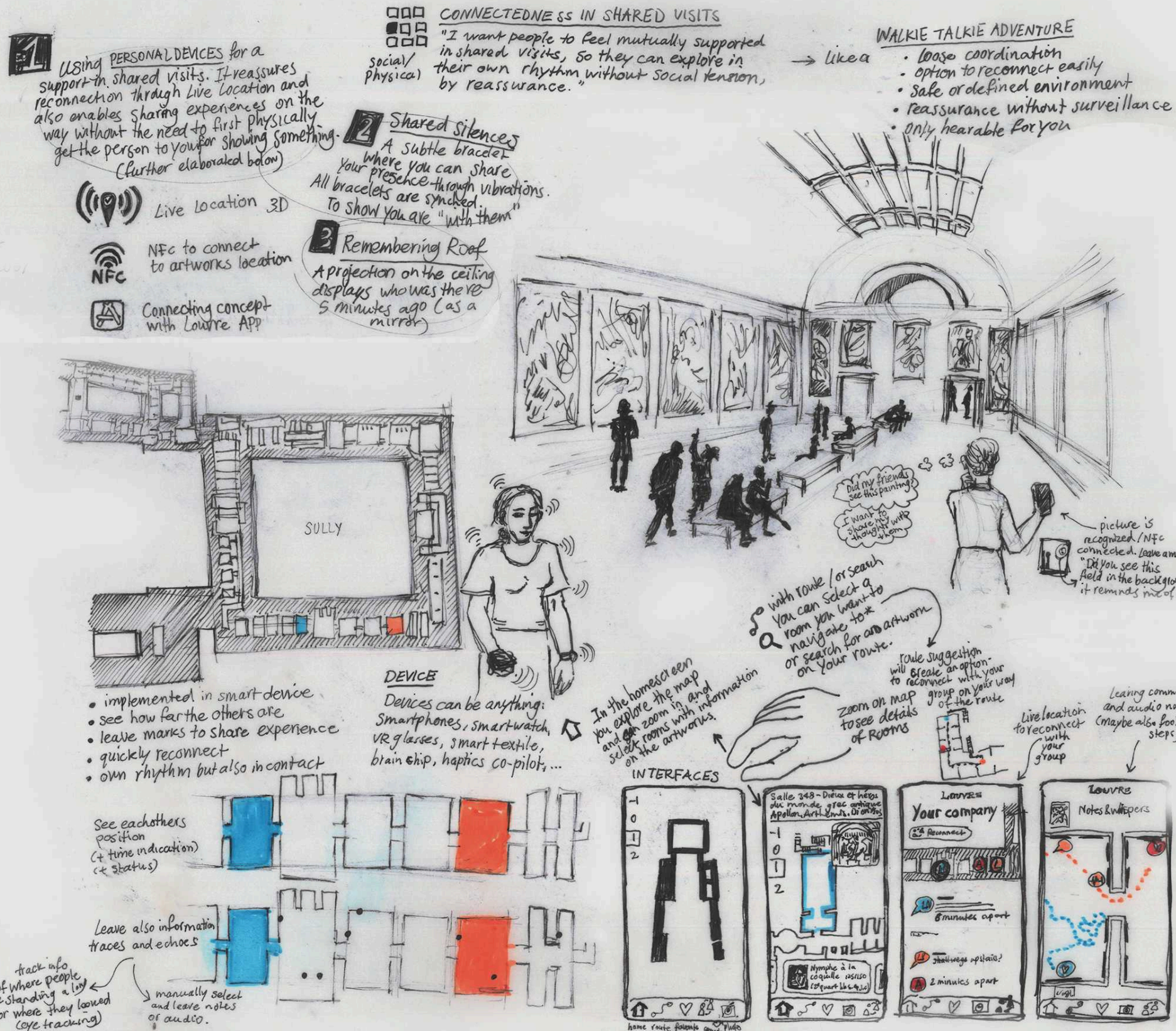




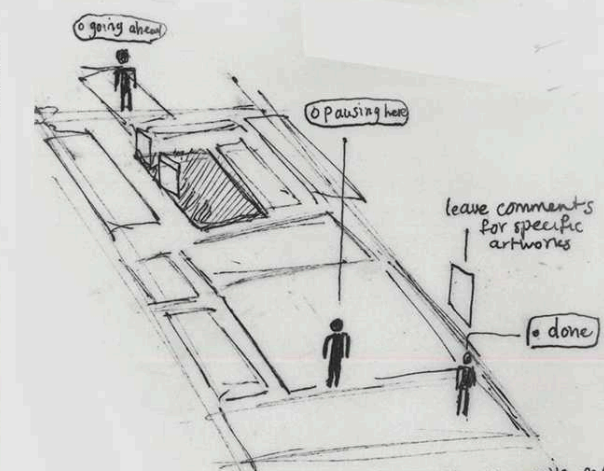


Shared visits can be supported by providing reassurance about how the other person is doing and if they are still close to you.

Live maps, gentle pulses or an abstract direction of where your companion is, gives you enough information to not get worried. The ideation also explored ways to visualize information that you want to share with your companion when you are not together, to make sure you have both seen that artwork you want to talk about still after your visit.



Another Louvre app application?  
Social compass pointing the direction of your company, but not exact location.







Shared visits can be supported by providing reassurance about how the other person is doing and if they are still close to you.

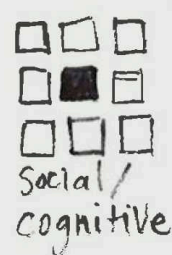
Live maps, gentle pulses or an abstract direction of where your companion is, gives you enough information to not get worried. The ideation also explored ways to visualize information that you want to share with your companion when you are not together, to make sure you have both seen that artwork you want to talk about still after your visit.



Moving on autopilot happens in places you know well, and carry personal meaning. Because you already know the way, additional signage would make it artificial.



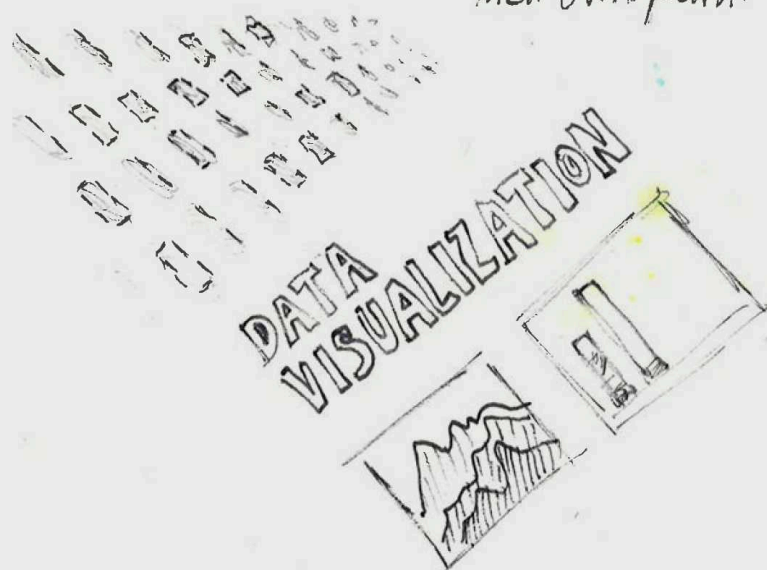
Sensing the environment, interior and architecture through your senses and intuition. Walking around the Louvre before entering, orienting through windows and knowing cardinal directions helps to understand your position.



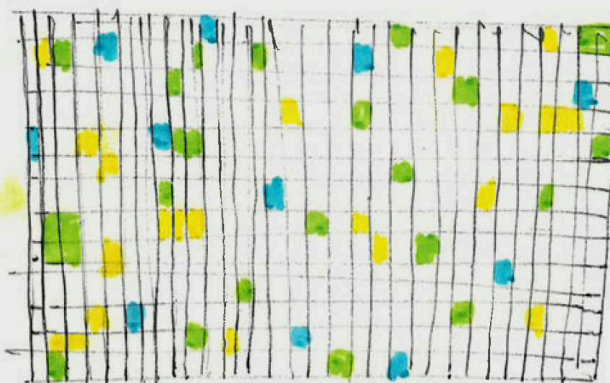
social/  
cognitive

## MEANING THROUGH SHARED STORIES

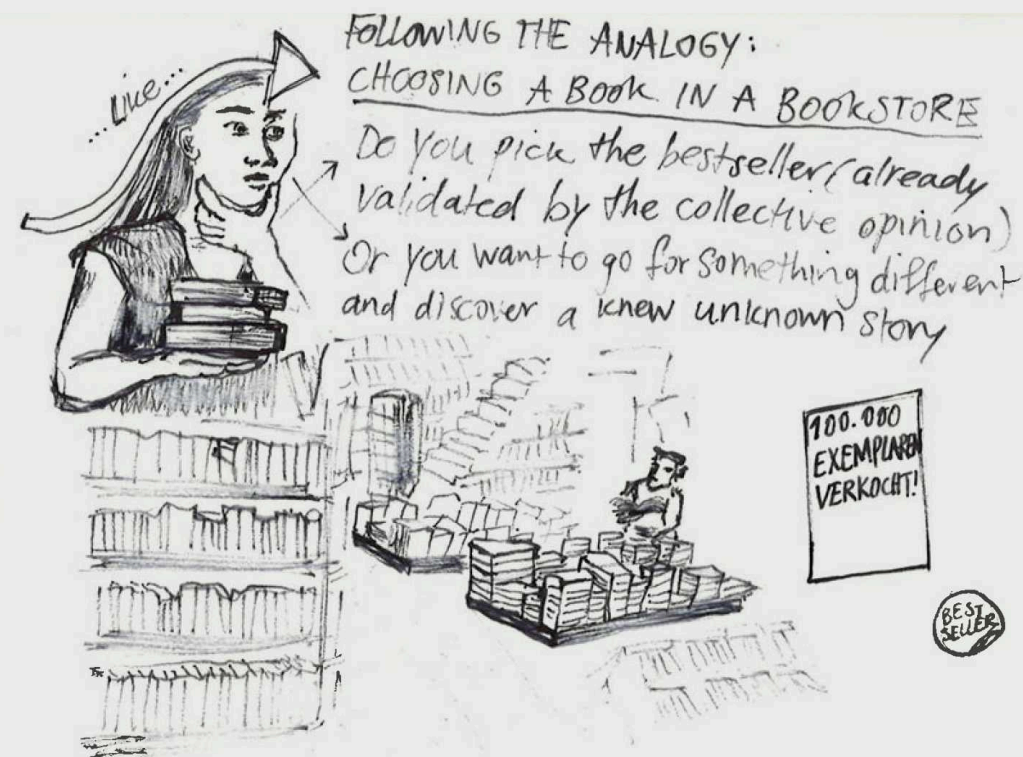
"I want people to sense how shared stories shape collective movement; and reflect on their own role: follow the crowd, question it, or create their own path."



DATA  
VISUALIZATION



Register with all the artworks by visiting artworks you colour them, and you can see how much your colour is corresponding with the average.

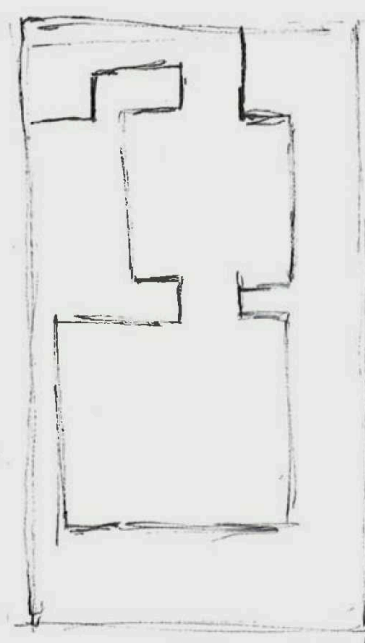


FOLLOWING THE ANALOGY:  
CHOOSING A BOOK IN A BOOKSTORE

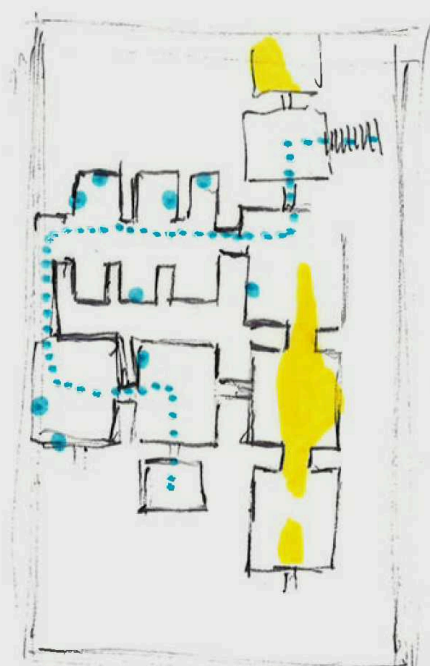
Do you pick the bestseller (already validated by the collective opinion) Or you want to go for something different and discover a new unknown story

100.000  
EXEMPLARE  
VERKÖFT!

BEST  
SELLER



1 Following the exact same route as someone "you want to follow"  
"This route is based on Salvador Dalí's visit on November 4th, 1987"







Creating deep experience in the Louvre was explored through activating the inner world. Stillness and timelessness are often relied to mindful practise, but also other ways to activate and transcend your normal way of perceiving the world are possible for this typology. It is about inspiration and reflection.



Not drawn in ideation, but this typology is manifested by moving, without navigating. Wandering or roaming through the galleries of the museum, without a goal. No wayfinding signs are needed, possibly only information about the artworks.



# PUBLIC SPACE AS A SPATIAL MIRROR

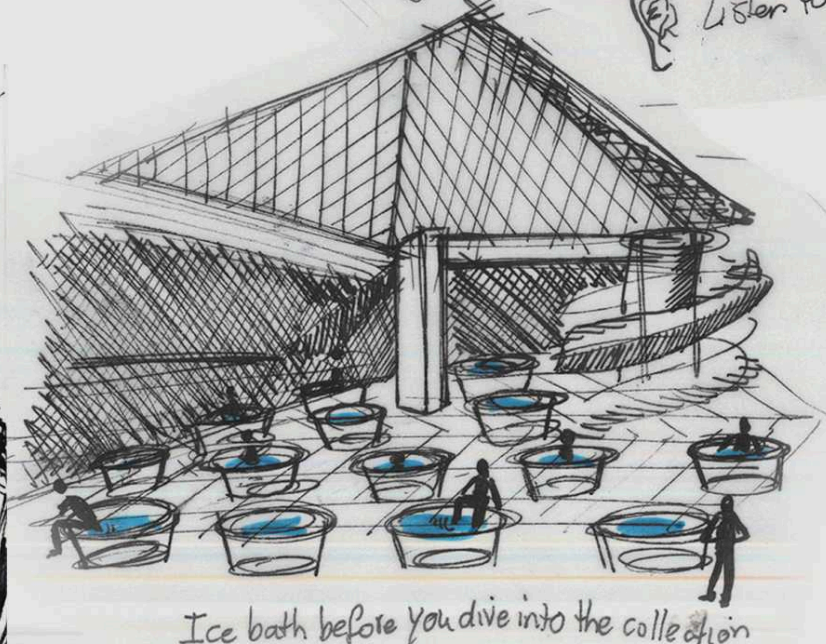
"I want people to find personal insight about their way in life through immersive interaction with reflective environments."

intrinsic / cognitive



Guided by reflective questions.

- What part of you did you leave behind, and where?
- Where you watching? or being watched?
- Is this the end, or did something begin?
- Which moment would you rewind?
- Which painting would you step in?



## ANALOGY

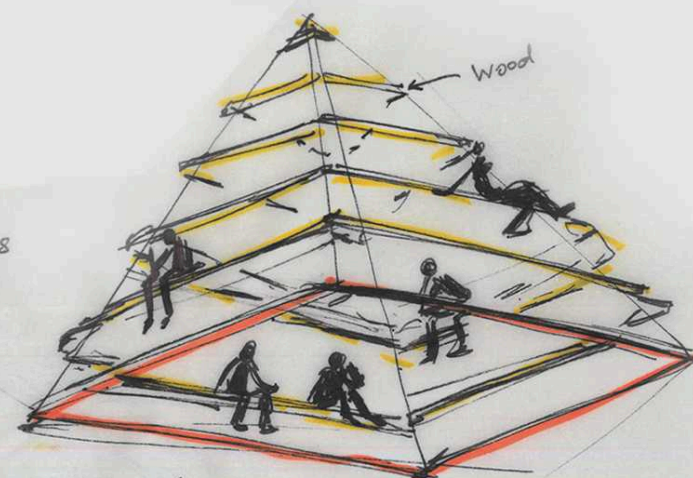
Watching the last bits of a campfire when your friends already went to bed, after a joyful night.

- sense of timelessness
- stillness for personal thought
- immersive, sensory stillness
- after the collective, shift to the personal

what would Mona Lisa think when she sees this?



Other subtle sounds that guide your presence and helps to resonate with the artworks



## Pyramid pause

A soft landing zone with a space to slow down and process your experiences. Soft light, natural materials, stillness. Where you can sit down to ground yourself.



# 5.3 PATHWAYS CONCEPT

The Pathways concept integrates the nine behavior typologies of the future framework into a single navigational strategy for the Louvre. Rather than proposing one dominant approach to orientation, Pathways acknowledges that visitors have different needs and rhythms throughout their visit. In some visits, they want clarity and efficiency; at other moments, they seek reflection, friction, or social belonging. Pathways provides a system of parallel spatial guidance, making it possible for each visitor to experience the museum in a way that aligns with their preferred mode. (figure 28)

## User journey and choice

The journey begins before visitors arrive at the museum. While booking tickets online, visitors are invited to choose one of the nine pathways, each corresponding to a spatial guidance strategy: efficiency, shared stories, intuition, reflection, and so on. This choice is not fixed, they can switch typologies during their visit, but the initial selection sets the tone of their experience. The system is opt-in, ensuring that no visitor is involuntarily exposed to personalization or surveillance. Their choice is linked to their device, and through iBeacon recognition, the system adapts the displays to present the right information.

## Adaptive technology and Parallel Reality

The suggested means of displaying Pathways is the Parallel Reality technology. This innovation uses a new pixel technology that can direct up to millions of independently controllable light rays, which allows a single screen to show individualized content to multiple viewers at the same time (Misapplied Sciences, n.d.). For the Louvre, this means that dozens of visitors standing before the same display can see their own chosen layer of information. The use of this technology would remove the need for personal devices, so that visitors remain immersed in the museum space rather than isolated on their phones. However, its feasibility, costs, and ethical implications require further study before implementation. (Türker, 2023)

## Placement in the museum environment

The Pathways displays are only placed at nodes in the museum. These are decision points, such as intersections or entrances to new wings. This ensures that wayfinding support remains a modest layer, guiding rather than distracting from the artworks themselves. This balance reinforces the museum's role as both a site of orientation and a site of discovery.

## Benefits

- Supporting agency by allowing visitors to actively choose their way of navigating.
- Enhancing inclusivity by accommodating different cognitive, emotional, and social needs.
- Preserving serendipity by ensuring that not every movement is optimized.
- Encouraging repeat visits, as returning visitors can experience the same exhibition through entirely different Pathways.

## Considerations

- Ethical issues of privacy and consent must be addressed, especially when dealing with personalized data.
- The energy consumption of digital displays raises sustainability concerns, requiring careful evaluation of material and ecological impact.
- Designers must consider the social effect of personalization: when two people stand together but see different information, their ability to share in the same experience may be reduced. Therefore, groups are suggested to select the same Pathway.

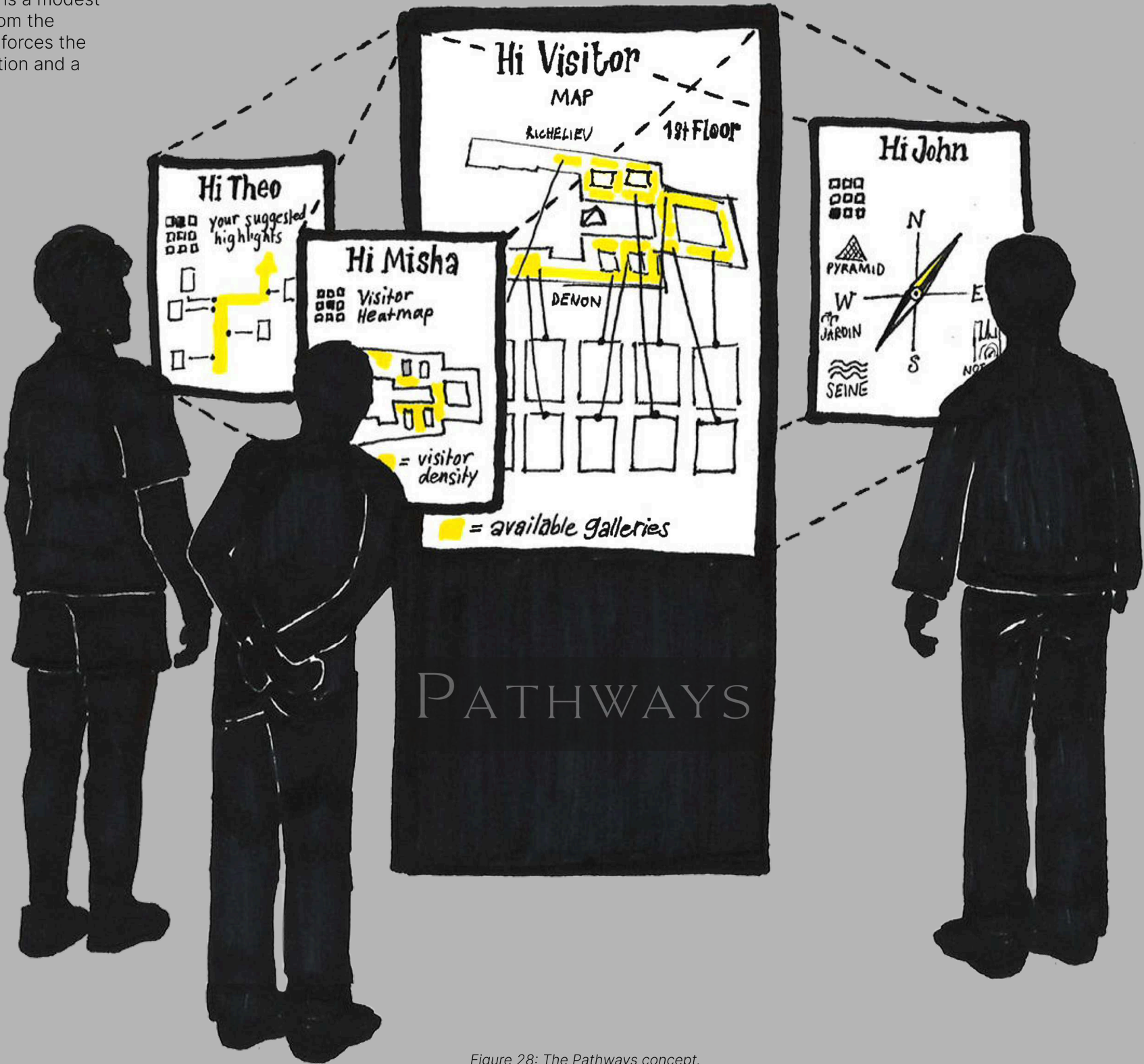
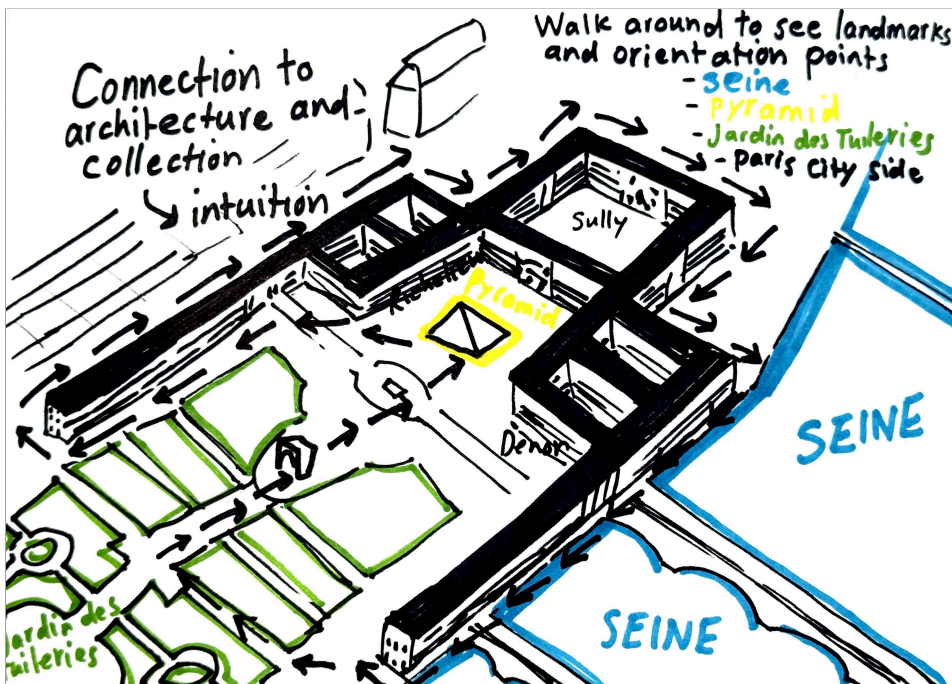
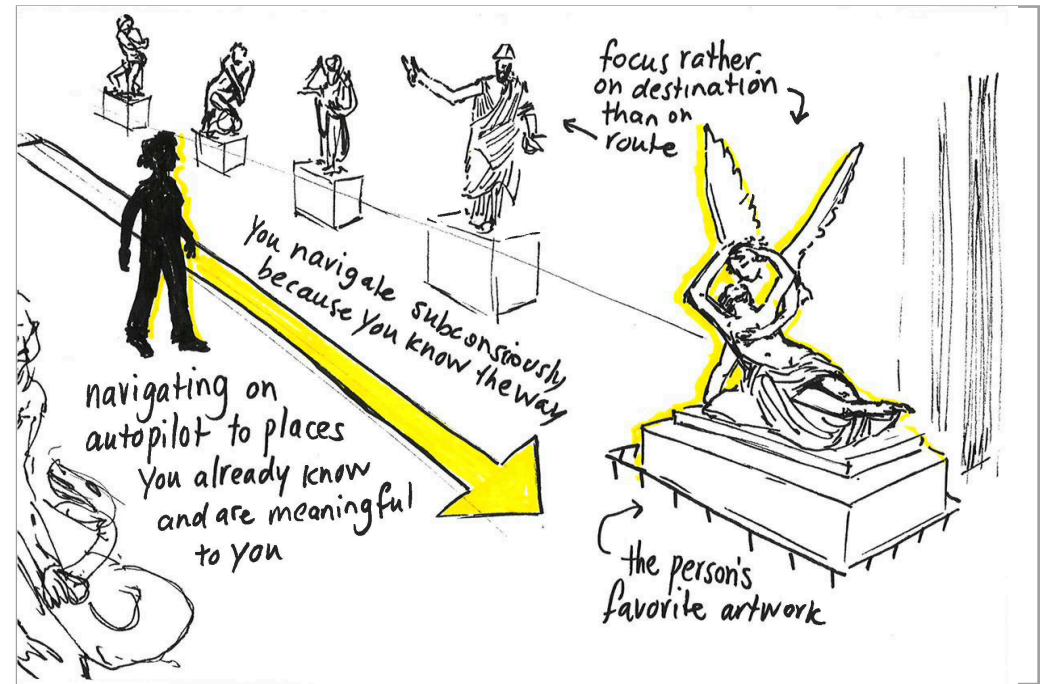
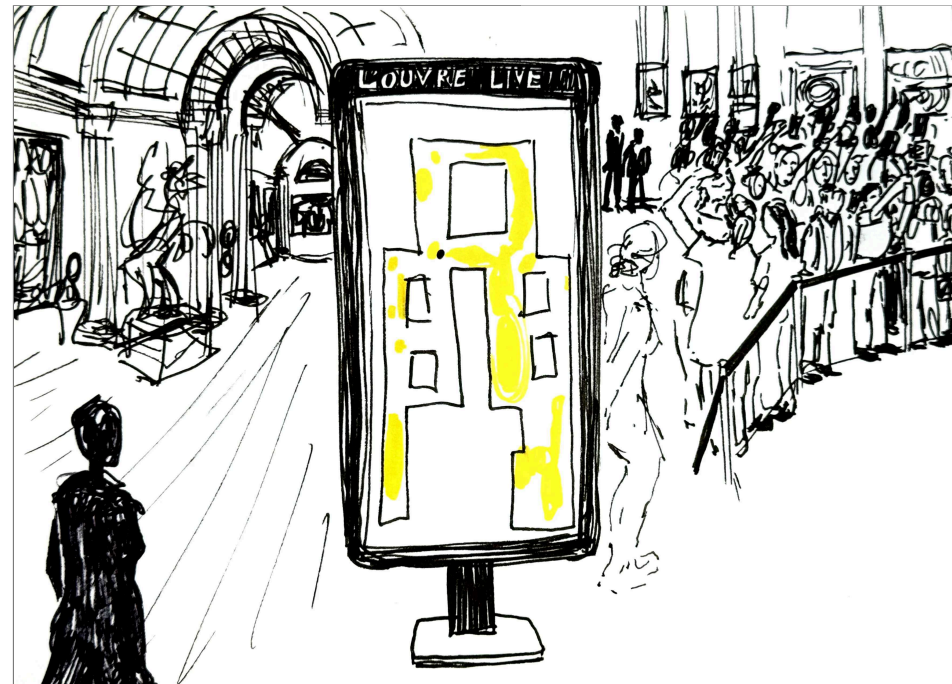
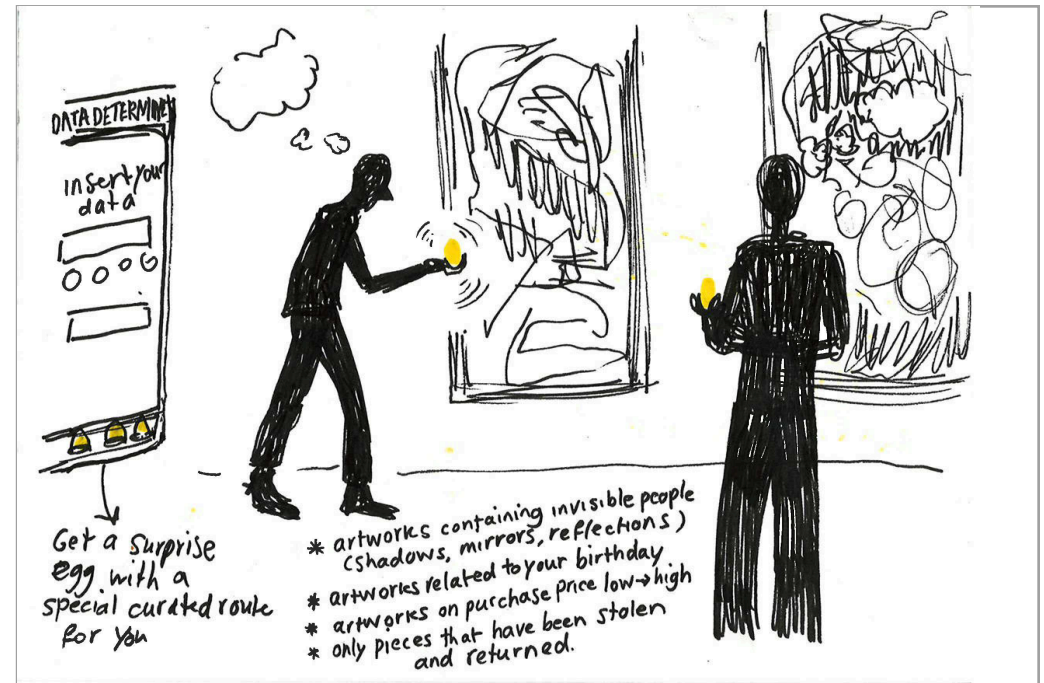



Figure 28: The Pathways concept.









**Experiential layers of Pathways**  
Each of the nine typologies is incorporated in the Pathways concept as a spatial guide. (figure 29)




**SYSTEM HABITS IN MOVEMENT**  
Finding your way by being aware of your intended direction on each node or decision point. The direction you are choosing has consequences for the rest of your route, as you might need to go back or skip a part. The intention doors make you feel informed and prepared.




**SYSTEM FOR COGNITIVE OUTSOURCING**  
Composing your route for your museum visit through support by artificial intelligence. Simplification supports understanding rather than replacing it. Because in the Louvre there are many things to process, you are guided through choices and have layered information.




**CONFIRMATION THROUGH SYSTEM SUPPORT**  
Finding your way by giving data consent, get a personal curated route that goes beyond selected categorization. You are wandering with a weird speculative object that reacts with excitement to curated content.




**CONNECTED IN SHARED VISITS**  
Feeling connected, even when you are walking in your own pace. See each others live location and the comments that they left at artwork's geographical coordinates. Wander without worrying about your companion, as you know you can always align routes to reconnect.




**MEANING THROUGH SHARED STORIES**  
Finding your way based on the behavior of others. You can interpet the live data visualizations to determine how you choose your path. You can recognize iconic places by the gathering of crowds and decide your reaction towards it, if you want to see it or avoid it.




**SHARED PLACES OF BELONGING**  
For this pathway, no guidance is needed. The displays might only show activities that are happening around that place, so that visitors are informed. However, for the route no information is needed because you know where to go, and you navigate on autopilot.



**DIRECTION BY INTUITION**  
Enter the museum by first walking around it for placing the landmarks in your cognitive map. See, feel, and bodily sense your surroundings and interpret and incorporate it in your bodily memory. By exploring the museum with this guide, you train your natural wayfinding skills.



**ORIENTATION BY REFLECTION**  
Activating the inner world through a reflective space or special experience. It touches the spirituality of human beings, allows to experience deeply or slow down to process thoughts. There is no place where you have to go, you take a seat or slowly roam through the museum.



**FRICTIONAL EXPERIENCE**  
You don't know where you are because the information on the displays disappears when you get close to it. You keep moving, but you are not in control of the environment. The uncertainty can bring, when you embrace it, a positive experience of wandering with discomfort.



# CONCLUSION

This chapter concludes the thesis by synthesizing the research, framework, and design explorations into a set of overarching insights and recommendations.

The conclusion has two primary aims. First, it emphasizes the long-term vision for how people may find their way in 2035, reframing wayfinding as a practice that extends beyond efficiency to include meaning, agency, and authenticity. Second, it describes how today's designers, institutions, and policymakers can already begin to use the framework and concepts to shape spatial guidance.

# CONCLUSION

## Long-term vision and current relevance

This thesis explored the question: How will people find their way in 2035? Rather than limiting wayfinding to signage or digital tools, it framed orientation and navigation as physical, cognitive, and emotional practices, deeply embedded in how people make sense of space and place.

By combining literature, expert dialogue, and future-oriented synthesis, the 3×3 framework of wayfinding typologies was constructed, describing nine clear ways in which people may orient, navigate, and experience movement in the future.

The case of the Louvre demonstrated how this framework can shape design practise. The Pathways concept illustrates how diverse experiences of movement can be integrated into one environment, offering personalization without isolation and efficiency without loss of agency.

## Key Insights

- ‘Find your way’ is increasingly shifting to ‘Follow this way’, as we choose and get steered by optimized routes. It is very important that people have the agency to choose how they find their way, so that they do not only follow.
- Balance efficiency and discovery: Seamlessness has value, but moments of friction, surprise, or reflection create meaning.
- Design for diversity: Not all visitors need the same information. Supporting multiple parallel pathways ensures inclusivity.
- Technology as support, but not as dependency: The Parallel Reality technology enriches the vision, but the vision stands on its own even if this specific technology fails or gets replaced.
- Systems like Parallel Reality can enable personalization in public space, but must be implemented with caution, transparency, and ethical considerations.
- Wayfinding as cultural infrastructure: Beyond solving navigation problems, wayfinding has the potential to experience authentic connection to place, and to orient yourself in space.

## Recommendations for practice

- Adopt the framework as a design tool: Use the nine typologies to evaluate future projects, ensuring a balance of intrinsic, social, and systemic strategies.
- Prototype experiential wayfinding: Test the nine spatial guidance experiences by roleplaying scenarios, followed by interviews. Test the Parallel Reality technology by interaction prototypes. Finally, test the guidelines with the current projects and see if they need to be further refined.
- Collaborate across disciplines: Engage technologists, cultural institutions, psychologists, and urban designers and museum experts to co-develop wayfinding strategies.
- Embrace long-term imagination: Use speculative visions such as 2035 to challenge current assumptions and prepare for transitions ahead. The framework might not seem to lay far in the future, but contexts have not yet been designed, based on the individually preferred modes.

## Limitations

This project was sometimes on the speculative side of design. The framework is shaped by grounded synthesis, and is interpretive rather than predictive. User testing or other forms of validation was limited. However, given the future scope, the discussions with experienced designers still gave relevant feedback for develop the framework from typologies to concept.

Feasibility and viability remain to be studied in future projects. Specifically for the implementation of the Pathways concept, further research is needed to explore the desirability, feasibility and viability of applying the Parallel Reality technology in the Louvre context.

While this research is conducted in 2025 in The Netherlands. The question remains whether the framework can be applied globally. Among the context factors where several factors of global scale, but it should be considered that synthesis of the factors might be influenced by a western worldview. An interesting tool to visualize cultural differences is by the Hofstede dimensions.

**In conclusion, this thesis reframes wayfinding as a human experience of movement in a mediated world. In 2035, as systems increasingly navigate for us, we still retain the choice to navigate differently.**



# PERSONAL REFLECTION

## Process and methodology

Working with the ViP methodology was both demanding and rewarding. It required me to let go of designing immediate solutions and instead imagine long-term possibilities for human behavior.

The process was iterative, intuitive, and at times disorienting, mirroring the subject of this thesis itself. But overall, ViP offered the right tools to structure the complexity of the topic and organize the timeline of the graduation project. During the thesis, there were several times that I have thought about the impact of method on the final outcome. To answer this question, I think that some parts, such as the interest in philosophy, wandering and getting lost, natural skills and intuition and the collective behavior shaping individual's paths, was something very close to myself, so not a result of the method. However, ViP did guide me in building a coherent framework based on research, where all separate interest relate logically to each other.

The duration of the thesis, 100 days, feels at the same time endless and super short; but for following the ViP method, it feels more at the short side. However, I would not have wanted to extend the duration, because an individual project with this weight can sometimes feel quite lonely. Luckily I had good support around me and even a fellow student with who I was in the ViP method together.

My favorite parts in the process were exploring the context factors, analyzing the relations between them to build the framework, and working out the concept from the ideation. These parts match well with my curiosity and explorative way of working, while I struggled a bit more in the parts of step by step refining nuances, because my head was already two steps ahead. I also didn't expect to draw so much, but I am super glad that I could do this. Now it really feels like a 'Lotje' project.

## Personal growth

This thesis became not only an academic project but also a personal exploration of what it means to find my way. At moments, I experienced the same sense of being lost that the project investigates. Luckily, for me this disorientation was productive, because it taught me to embrace uncertainty, to trust on my creativity, and to find meaning in complexity.

## Future

I see this thesis as a starting point rather than an end result. The framework can be applied and tested in different contexts, and expanded through empirical research. The Pathways concept invites prototyping, not only in museums but also in cities, hospitals, or transport hubs. More broadly, the project demonstrates how speculative design could inspire strategic discussions in professional practice. While in the daily work flow of Mijksenaar, there might have not been the time to carry out this research, I think the outcomes are a valuable source of knowledge and with a little extra elaboration, the framework could be used in other Mijksenaar projects.

## Lessons learned

- **The paradox of technology:** Digital systems are valuable tools for navigation, but they risk narrowing our experience of space. The concept of Heideggerian dwelling made me realize how important this embodied connection with the environment is to me.
- **The value of friction:** Not all challenges should be smooth. Difficulty, detour, and uncertainty can enrich wayfinding and sense of fulfillment.
- **The need for balance:** Efficiency, reflection, intuition, and social connection must coexist, no single mode should dominate.

## Final reflection

Ultimately, this project reminded me that wayfinding is never only about signs, maps, or systems. It is about how we move through the world, how we connect to place, and how we orient ourselves in life. To design for wayfinding in 2035 is to design not just for efficiency, but for agency, curiosity, and belonging. And perhaps the most important lesson is that sometimes, getting lost is exactly what helps us find our way.





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