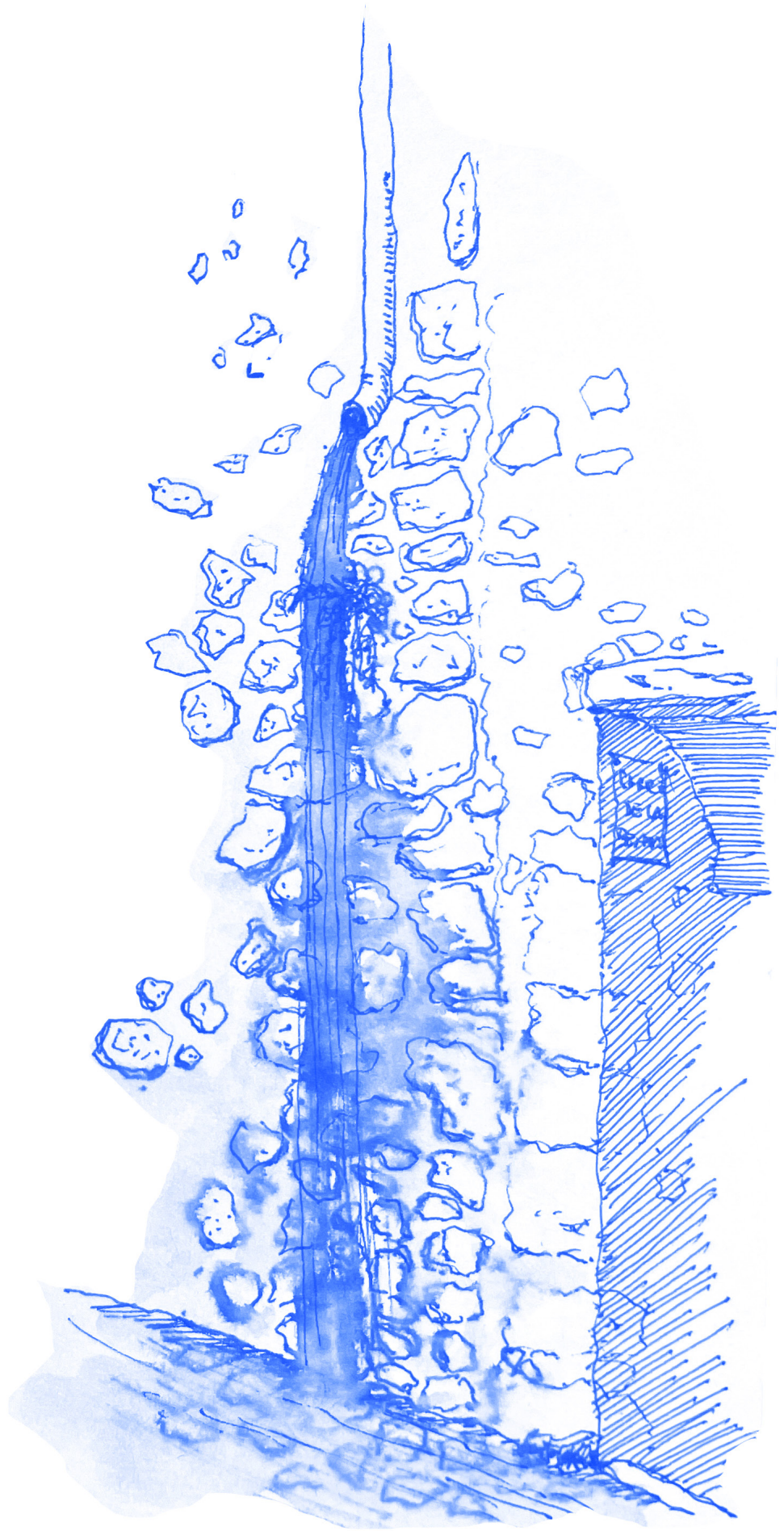


CAMINS D'AIGUA

(Trails of water)

*investigating water stories and
water structures on Mallorca*



Research Plan

Alicia Meier



*„Aigo, vos demanam,
aigo i vós, senyor,
mos dau vent“*

*„Oh water, we ask you,
oh water, and you, sir,
give us wind.“*

Song: Aigo - Maria del Mar Bonet

WATER CONTENT

5	PERSONAL ENCHANTMENT AND RELEVANCE
7	THE WATER PROBLEM
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*“This is one of those panoramas that calm the spirit, because there is **nothing left for us to desire or imagine**. Everything that the painter or the poet can dream of has been created by nature in this place: a tremendous general effect, infinite detail, inexhaustible variety, confused shapes, definite outlines, vague depths, they are all there, and art can add nothing more. A man’s inner sense is not always sufficient to enable him to appreciate and understand God’s work; and when he thinks things over deeply, he realises his incapacity to portray in any way at all that boundlessness of life which both enslaves him and enthralls him. I would advise all persons who are consumed by the vanity of art to go and look at these landscapes, **and to look at them often**. I believe they would acquire the respect they are lacking for that divine art that presides over the eternal creation of things, of at least so I imagine.”*

(Sand, 1841, pp.131-132)

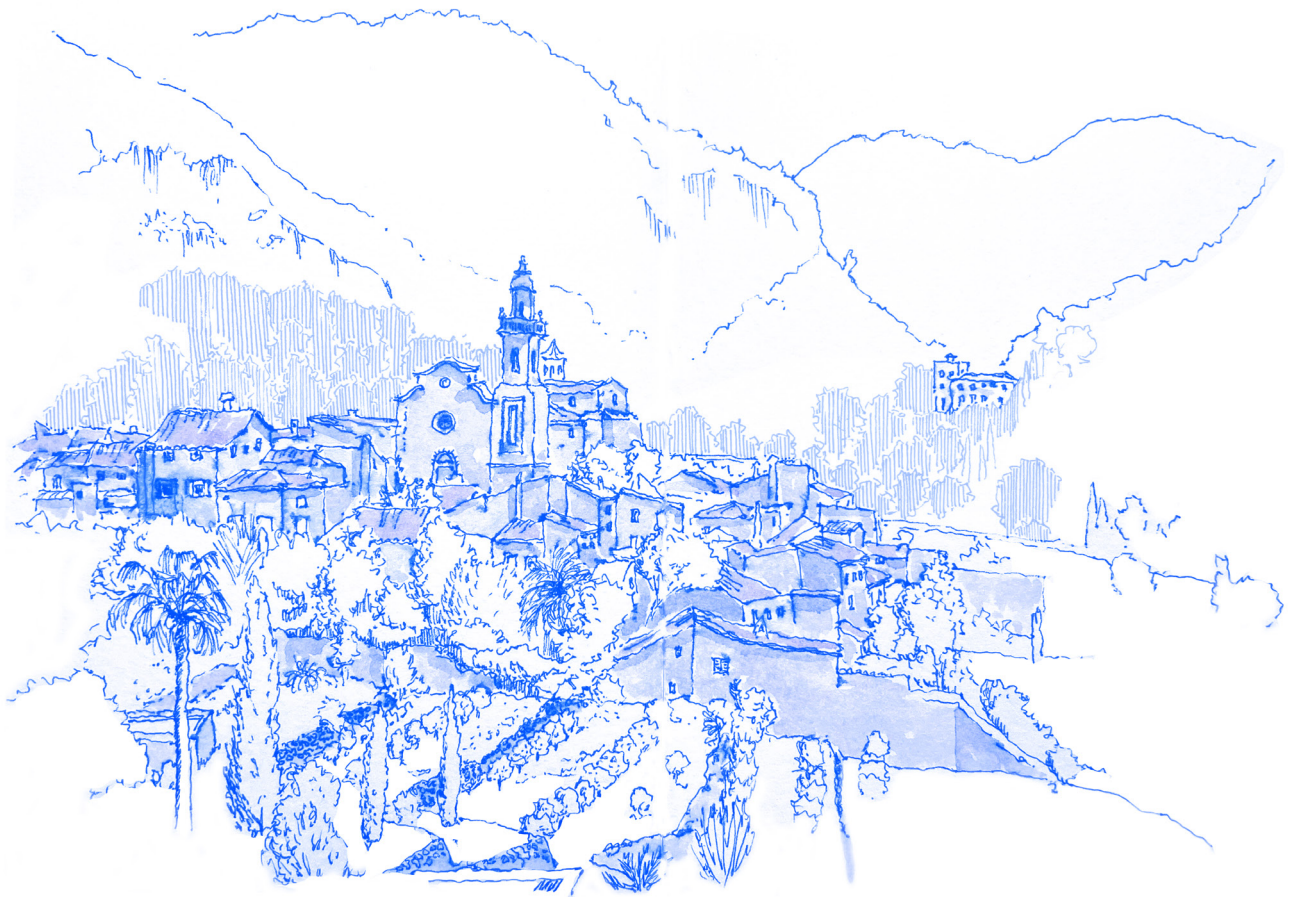


Figure 1: drawing made during field trip. Valldemossa, the place discribed by George Sand

PERSONAL ENCHANTMENT AND RELEVANCE



I have always known that my fascination with this place is shared by many others. Over the centuries, renowned philosophers, painters, musicians, and writers—including George Sand and the Austrian Archduke Ludwig Salvator—have been drawn here, each seeking to capture its essence through words and images.

Valldemossa, the place George Sand describes and the place I grew up, is a small village nestled in Mallorca's Tramuntana mountains. Mallorca has a long history of self-sufficiency and cultural distinctiveness, shaped by its geographic isolation. Its Mediterranean climate is characterized by hot, dry summers and mild winters punctuated by irregular but intense autumn and spring rains. This seasonal imbalance in water availability has necessitated extensive water harvesting and storage systems throughout history. It has driven the island's inhabitants to adapt, developing sophisticated waterworks rooted in Arabic engineering, including agricultural terraces and interconnected water systems, to sustain life and agriculture. This rich tangible as well as intangible culture is a testament to the continuous symbiosis between humans and their arid environment—“*a singular work of man and nature*”—which led to the recognition of the Serra de Tramuntana as a UNESCO Cultural Landscape in 2011 (Centre, n.d.).

Water, however, is more than a mere resource on Mallorca; it is the island's protagonist, intertwined with the island's history, landscape, and society. Starting by shaping the island's topography, water interacts with the karstic porous limestone, gradually dissolving it to create a natural hydrological network. This complex network has given rise to a variety of spectacular geomorphological features, including limestone pavements, deep gorges and ravines, and extensive subterranean cavities and caves. Through continuous infiltration, water has carved its own infrastructure into the rock, creating abundant underground reserves that serve as the island's primary water source. In fact, in 2009, 80% of the consumed fresh water was extracted from aquifers (Mateos Ruiz & González Casasnovas, 2009).

The Serra de Tramuntana was and still is a vital resource for Mallorca's society, providing not only agricultural and forestry products but also essential water supplies that are crucial for the entire island (Dubon i Pretus, 2011). Looking at this place is going to the origins of water, looking to something ancient that older generations have built over centuries through the knowledge passed down by generation, it is looking at a living landscape.

Even today, visiting Valldemossa is a chance to step back in time thinking nothing has changed but yet everything is different. Today, beneath the burning sun, countless visitors stroll up and down the streets, while the Valldemossins retreat into their thick, stone houses, seeking refuge from the oppressive heat.

Returning each summer, I witness the fragile state of Mallorca's water resources, with water restrictions becoming routine, sometimes even leading to dry taps and public alarm, as headlines read "*Panic over Mallorca water cuts*" (Carter, 2024).

Since the tourism boom of the 1960s, Mallorca has faced an ever-increasing demand for water, exceeding the island's natural capacity and resulting in tensions over its allocation. While tourists, the primary source of economy, enjoy unrestricted access to water, residents endure recurring shortages, particularly during the summer months. However, without water, without its source, human settlements would never have started, and this village would not exist.



*Figure 2: Torrents of Mallorca
torrent: watercourse that flows intermittently or temporarily along a fixed channel*

THE WATER PROBLEM



Photo taken during the field trip - water vending machine in Palma Estació Intermodal

Arriving at Palma bus terminal

Behind a glass box, in plastic emballage
Hides a precious treasure, once shared by all.
From shared to bought, from need to earned,
The cycle shifts, the flow is turned.
What once was ours, now priced and sold,
The story of water, turned to gold

created with AI

*„Aigua: font de vida,
modeladora del paisatge, creadora de bellesa,
de cultura, font de purificació i de ritus iniciàtics.
Aigua, remor, música, bellesa... misteri.“*

*“Water: source of life,
shaper of the landscape, creator of beauty,
of culture, a source of purification and of initiatory rites.
Water, murmur, music, beauty... mystery.“*

*(Barón Pérez, 2009, as cited in Mateos Ruiz
& González Casasnovas, 2009, p.11)*

BUT what is water truly about?

Everyone is familiar with the concept of *water*. An odourless, tasteless, colourless liquid formed by a combination of hydrogen and oxygen which is necessary for animal and plant life (Water, 2024). However, the concept of *water* extends far beyond this simple description.

Water, as the source of life, functions as a public good from which no one can be excluded. Yet, individual overconsumption reduces the availability for others, leading to conflicts among *water* users. “*If everyone has the legal right to use water, how do we decide who is allowed to use it and who is not?*” (Anderson et al., n.d.) Who should manage, control or regulate it? Who should profit from it? And who has priority over it?

These questions become even more urgent in the context of *water* scarcity, as seen on Mallorca, especially now that the island is facing the privatization of traditionally public urban water management. The current crisis facilitates the artificial creation of value from *water*, treating it as a commodity or financial product rather than a vital resource (Hof et al., 2014).

As Veronica Strang mentions in her book *The Meaning of Water*, there is no doubt about whoever controls the most vital resource, even within modern democracies, inevitably holds powerful political position over life and livelihood. At once, *water* can serve as a metaphor for social, economic, and political dynamics, acting as a barometer that reflects how identity, power, and resources are distributed and shared within a society (Strang, 2004).

Water possesses the “extraordinary ability to metamorphose rapidly into substances with oppositional qualities” continuously in movement and must be seen in its multiplicities: as life-giving but also life-threatening medium as heavy floodings are experienced on the island (Strang, 2004, p.49). *Water* can be seen in its spiritual way, as a source of recreation (in water parks, golf courses), as its pure material composition (H₂O) or an instrument of political power.

In the context of Mallorca, *water* has not only shaped the landscape but also influenced the development of human settlements and societal structures. The island, particularly in the case of Valldemossa, has a rich culture surrounding *water* (Trias Mercant et al., 1996). In older times, residents with *water* rights had access only during certain hours, and for drinking or cooking, they had to collect it manually from communal cisterns. Their daily behaviors revolved around *water*, prompting them to use this resource wisely. The intangible culture related to *water*, reflected in the extensive Mallorquín vocabulary, popular songs, and myths, serves as further evidence of this rich heritage (Dubon i Pretus, 2011).

However, due to *water* scarcity on the island, today’s infrastructure attempts to reversely shape *water*, transforming saltwater into freshwater, a river into a water reservoir (Cruz-Pérez et al., 2023), effectively creating an engineered or even *synthetic water*. Those modern water systems are often hidden from the public, resulting in what might be termed *virtual water*. Figure 4 illustrates the different types of *waters* and their processes, raising the question: can we return to viewing *water* as a source of life? In other words, can we recreate a connection to *water* as a vital life source?

Looking at the *water* problem means looking at everything that *water* touches. This research will focus on the specific area of Valldemossa and its surroundings, drawing on its rich context bound culture and history, which may be applicable to the rest of the island.

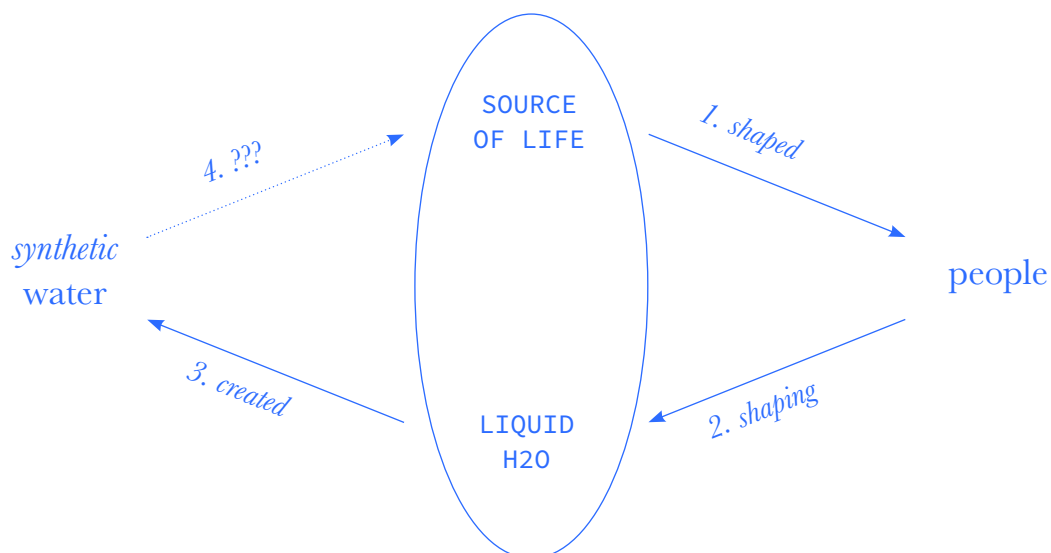


Figure 3: The water problem

THE ENCHANTMENT OF WATER



Photo taken during the field trip - cistern from a possessio

It has become clear that water cannot be understood separately from human relationships and power structures.

Jamie Linton and Jessica Budds reinterpret the classic hydrologic cycle—traditionally seeing water as an independent natural element moving through landscape—by embedding water into the social, political, and economic processes that shape its use, distribution, and meaning. They term this concept the hydrosocial cycle, defined as a “*socio-natural process by which water and society make and remake each other over space and time*” (Budds et al., 2014, p.170).

Looking at Mallorca’s hydrosocial cycle can enhance our understanding of the challenges faced and raise awareness about the anthropogenic pressure on the islands resource.

Alfred Gell introduces a concept that highlights how certain objects draw attention and command the respect of those who encounter them, a perspective that could also be used to look at water. In his paper, he explores how art and technology create enchantment—a sense of awe, wonder, or fascination within a social context. Gell presents two interrelated concepts; the first one being *The Technology of Enchantment*, referring to the artistic or technological object’s ability to captivate people and influence their perceptions and emotions, beyond the object’s physical form. This effect is rooted in *The Enchantment of Technology*, meaning that the very technical sophistication involved in methods making the object can fascinate viewers by appearing to defy ordinary capabilities. To those who do not fully understand the underlying processes, these objects can seem magical or mysterious, as the skills involved are often hidden. This fascination by complexity becomes a tool of power to captivate and influence people in profound ways (Gell, 1992).

Applying these ideas to water, if water could be represented using the tool of *enchantment*, it could enhance its perceived value. Using first the methodology of representation to create *enchantment*, it could further lead to the creation of the object’s *enchantments* itself, water, almost bringing back the mystical element of the resource. Gell argues that material culture functions beyond utility, manipulating social relationships, perceptions of power and power dynamics, status, or value within a culture through the creation of *enchanted* experiences (Gell, 1992), which could be applied to water.

The *enchantment* of something is strongly linked to thoughts, feelings, imagination which are all very personal. By fostering emotional connections to a place or resource, as described in *Conservation and Human Behaviour: Lessons from Social Psychology*, people are more likely to adopt sustainable conservation practices. When people emotionally value something, they tend to care for it more actively, which can cultivate a personal sense of responsibility (St John et al., 2010). This approach supports the idea that emotional investment and personal attachment to water can lead to more thoughtful, responsible resource use.



*Figure 4: Dona d'aigua (water women). Drawing from unknown author
Is a Catalan mythodology of feminine beings of mesmerizing beauty
that live in places with abundant fresh water*

RESEARCH QUESTION



Photo taken during the field trip - Abeurador Valldemossa

Now, the question arises: how can the emotional connection or meaning of water be created or restored? In this context, I would like to ask:

How can an exploration of Mallorca's *hydrosocial cycle* help to re-think the relationship between all *people* (Majorcans and tourist) and their fresh water?

Considering the anthropogenic pressure on the island's resource.

I. Reading and listening water

The first step will involve „reading“ and listening the historical water landscapes (with reading understood in all its forms), asking:

What are the water stories?

What relationship did the Mallorcans once had with their freshwater?

Was water once enchanted?

The second part will focus on the current situation:

In the context of Valldemossa, what is the village's waterscapes?

What value does water hold today?

What is Mallorcas hydrosocial cycle?

II. Render water:

How can this hydrosocial cycle be depicted, explained and represented?

How can meaning be created through visualization?

III. Revive water

The third part will likely focus more on design, asking:

Looking at water beyond utility, how can people engage in water again?

Can water be re-enchanted in the future?

METHODOLOGY

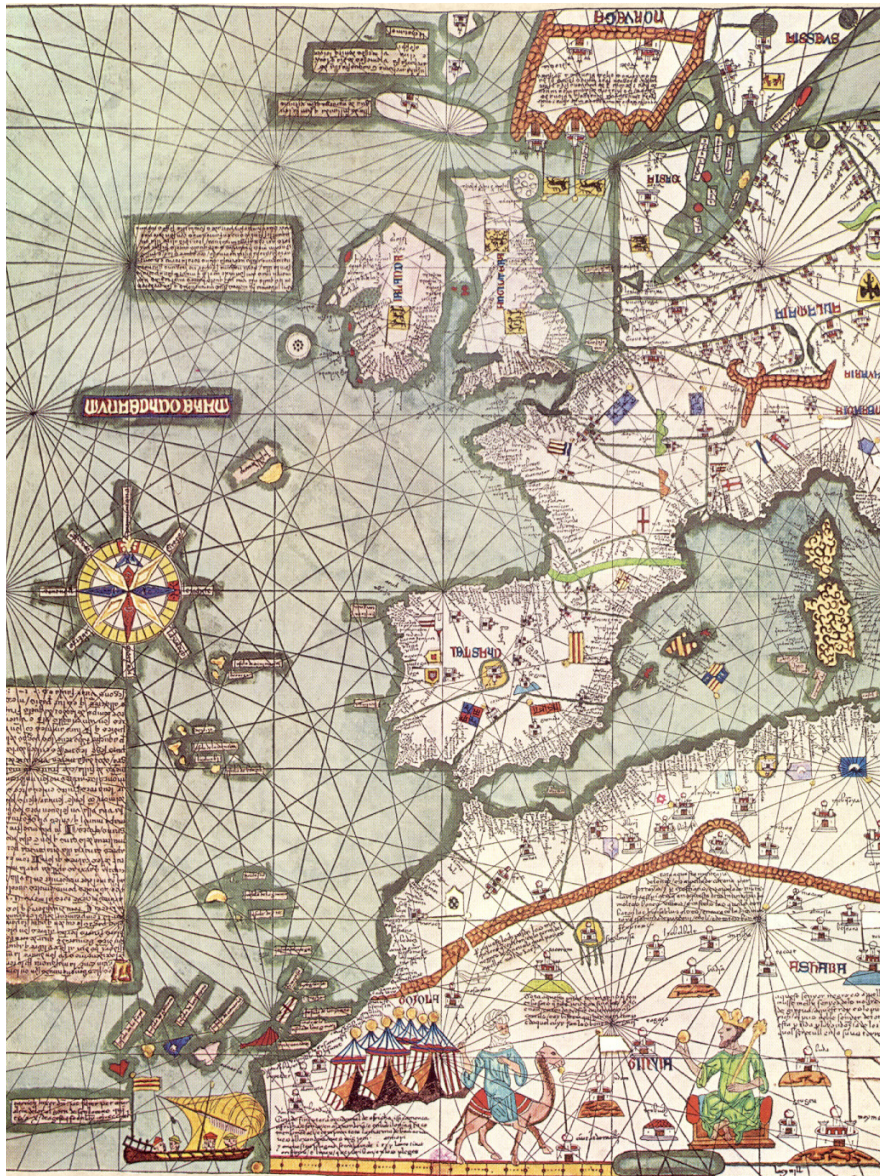


Figure 5: The Catalan Atlas of Europe and the Mediterranean of 1375 possibly made by Abraham Cresques, a Jewish cartographer from Palma de Mallorca.

As George Sand advises, “*look at these landscapes, and to look at them often*” (Sand, 1841, p.132), the first part of this research will involve immersive observation of the cultural water landscapes in the Valldemossa area during a field trip.

Tracing water, walking in its path as it constantly moves ahead of you, and discovering many abandoned water systems brings you constantly to the islands past. Stimulating you to wonder and imagine life in earlier times, feeling closer to it. A rich cultural history also lies hidden in the mountains—the birthplace of many water sources. There was a time when people lived within this harsh landscape, and observing the ruins of their settlements (Cañellas i Serrano & Tortella i Araque, 1992) provides a glimpse into a past society.

The documentation of these water landscapes will be captured through a personal journal, inspired by *Die Balearen; geschildert in Wort und Bild*, in which Austrian Archduke Ludwig Salvator recorded the region with both scientific precision and artistic beauty. The journal will serve for both objective measurements and subjective reflections, capturing direct observations through sketching and local narratives around water, offering a non-linear way of storytelling. Photos and objects will further help uncover the complex relationships between water, landscape, and humans.

The second phase focuses on representing the collected knowledge. Cartography has long been a classic method for visualizing spatial discoveries. In the early days, those were filled by visual stories like *The Catalan Atlas of Europe and the Mediterranean* of 1375 consisting of a compilation of trade routes, sites of raw materials and resources (Couling et al., 2019). Created by the Majorcan cartography school, this map reflects the island’s rich visual culture. This visualization of perceptions and intangible information can be used to overcome dominant narratives.

EXPECTED RESULTS



Photo taken during the field trip - cistern from s'hort de Cartoixa

The result expected is a collection of cartography based on the filed trip and readings, which will express the complexity of the problem and its history—a visual *hydrosocial cycle*. However, the problem is too vast to be answered in a single step. Instead, the research will focus on revealing the hidden or overlooked elements and uncovering deeper insights into the relationship between humans and water and classify them later on. Offering a new perspective to look at water.

Drawing on Alfred Gell's concept of the *Technology of Enchantment*, the project will explore both artistic and scientific representations—such as 2D maps and 3D objects—intended to captivate and convey a deeper sense of value beyond simple understanding. The process will prioritize qualitative over quantitative mapping, with abstraction serving as a tool in condensing observations. However, as is inherently shaped by the researcher, this subjectivity will be embraced and treated as a resource, especially in the personal journal. The meaning-making and situatedness will be central to the research, as “*qualitative data analysis is about telling ‘stories’, about interpreting, and creating, not discovering and finding the ‘truth’ that is either ‘out there’*” (Braun & Clarke, 2019, p.591)

This methods of representation will be continuously explored, employing a trial-and-error approach as part of the process. A wide variety of maps are expected, ranging from organically organized, hand-drawn maps to rigid virtual ones. The goal is to balance the *enchantment* of objects with meaning that avoids misinterpretation or dismissal. Additionally, the use of illustrative techniques will help bridge language barriers, making the research accessible to a broader audience, including tourists.

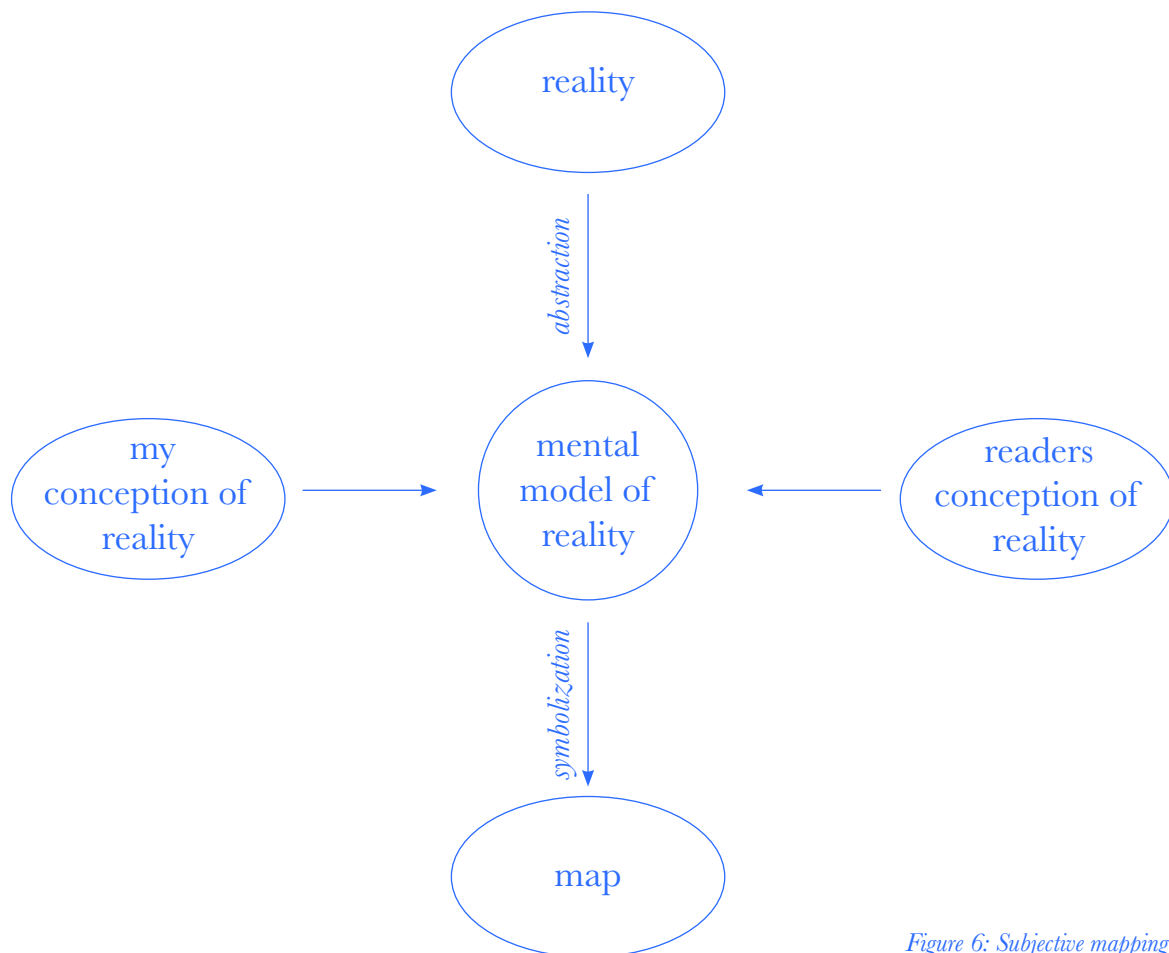
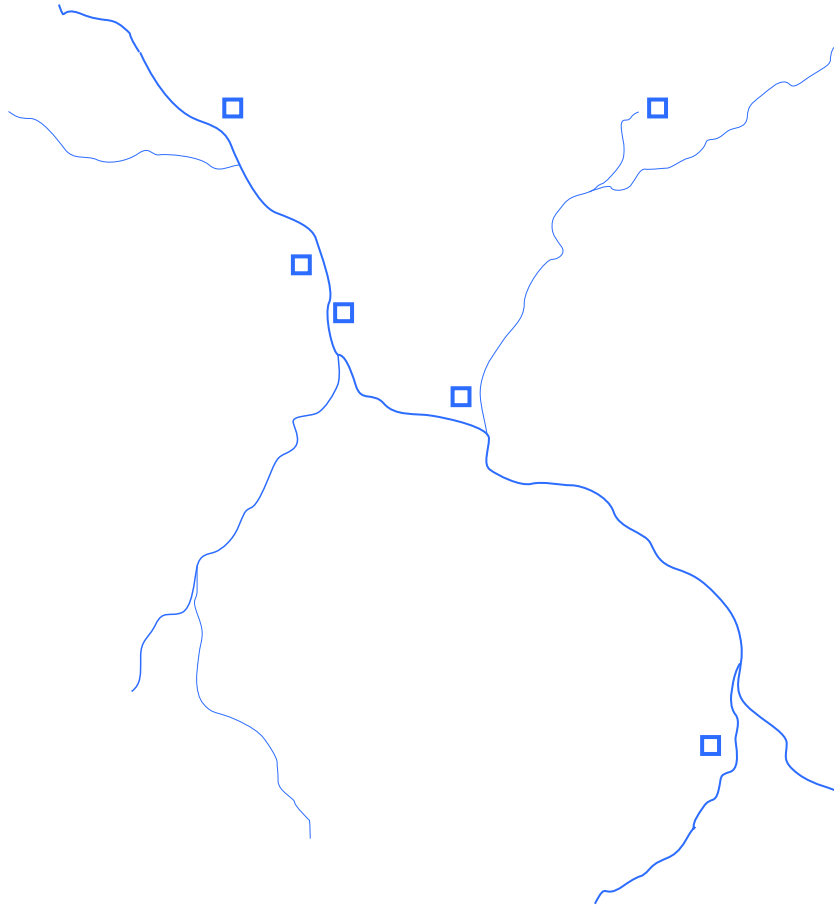


Figure 6: Subjective mapping process

THE WATER FUTURE



Photo taken during the field trip - cistern from s'hort de Cartoixa



The path of water is complex, flowing in multiple directions. The design challenge lies in navigating this vast scale. As such, various design interventions can be envisioned, both within the village and across different scales. The goal is to re-establish a connection with water and potentially enhance water harvesting efforts for a near and far future. These interventions could be approached through the reuse of abandoned structures, speculative design and scenario thinking.

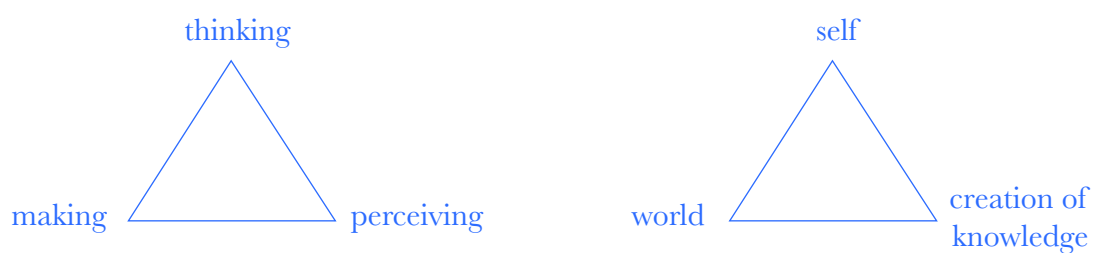


Figure 7: Reflexive design by Margaritta Buchert

The method of *Reflexive Design* will guide the process of generating knowledge to “combine art and science, theory and practice, thoughts and feelings, analysis and imagination in exceptional synthesizing ways” (Buchert, 2021, p.74). A cyclical approach of *making, thinking, and perceiving* will be employed to test various possibilities, with the hope of creating an *enchantment* at the end. The process will merge rational analysis with intuition, exploring how design interacts with social and environmental contexts—an *attitude* (Buchert, 2021) that fosters fluid, open-ended exploration.

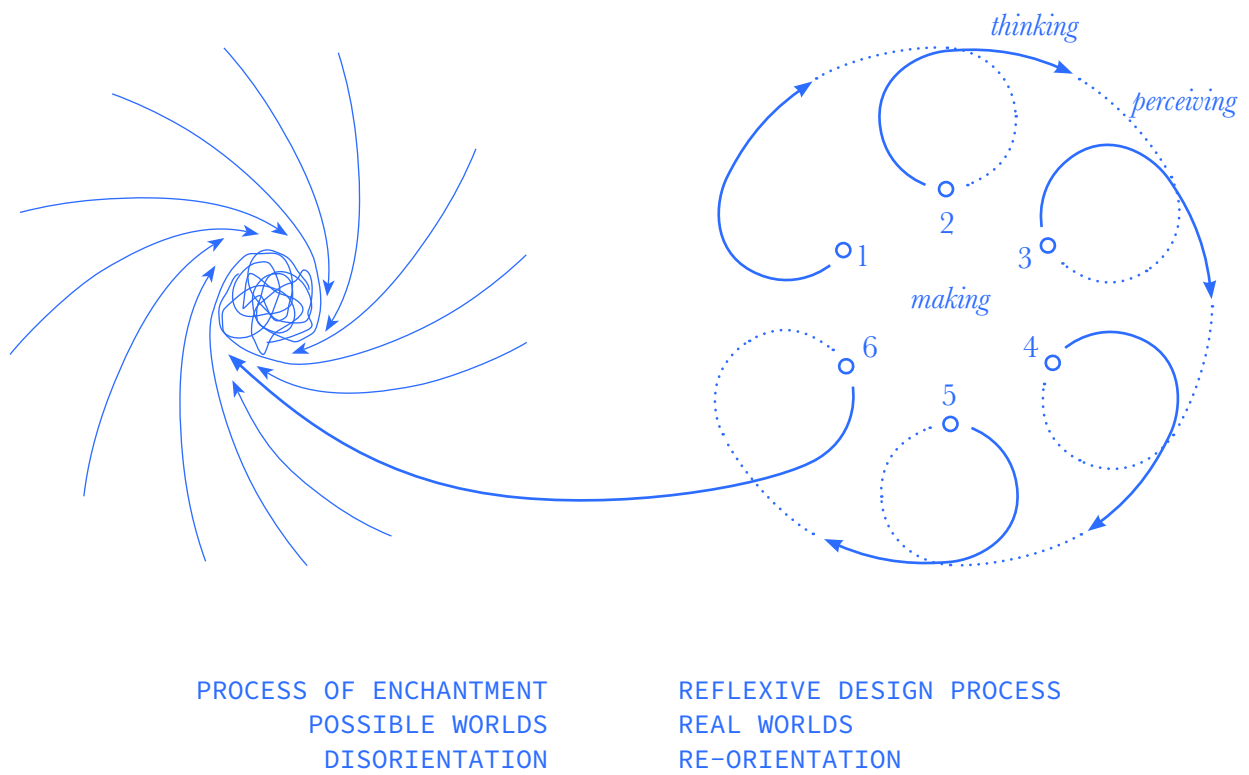


Figure 8: Research and design process strategy

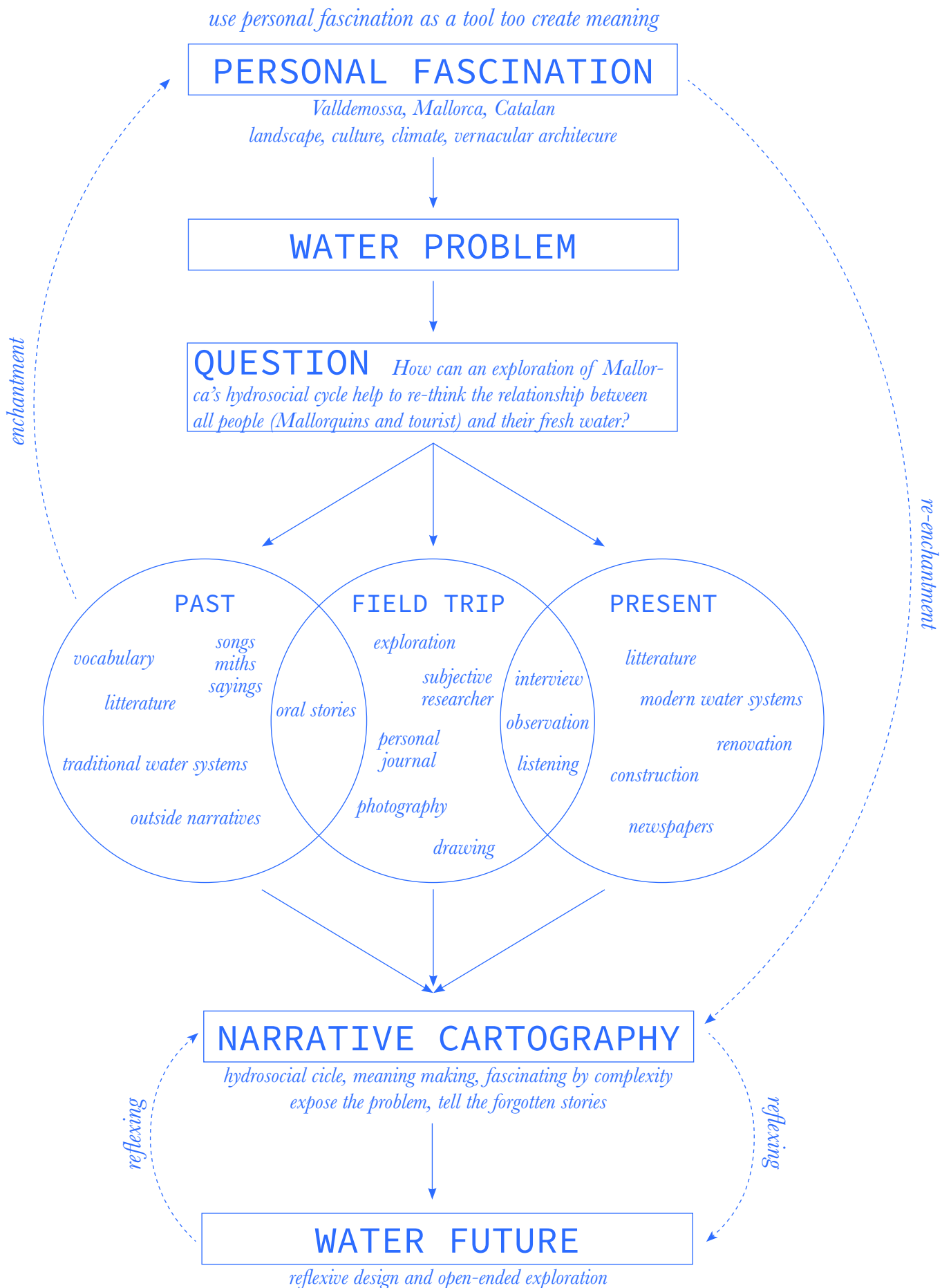


Figure 9: Research diagram



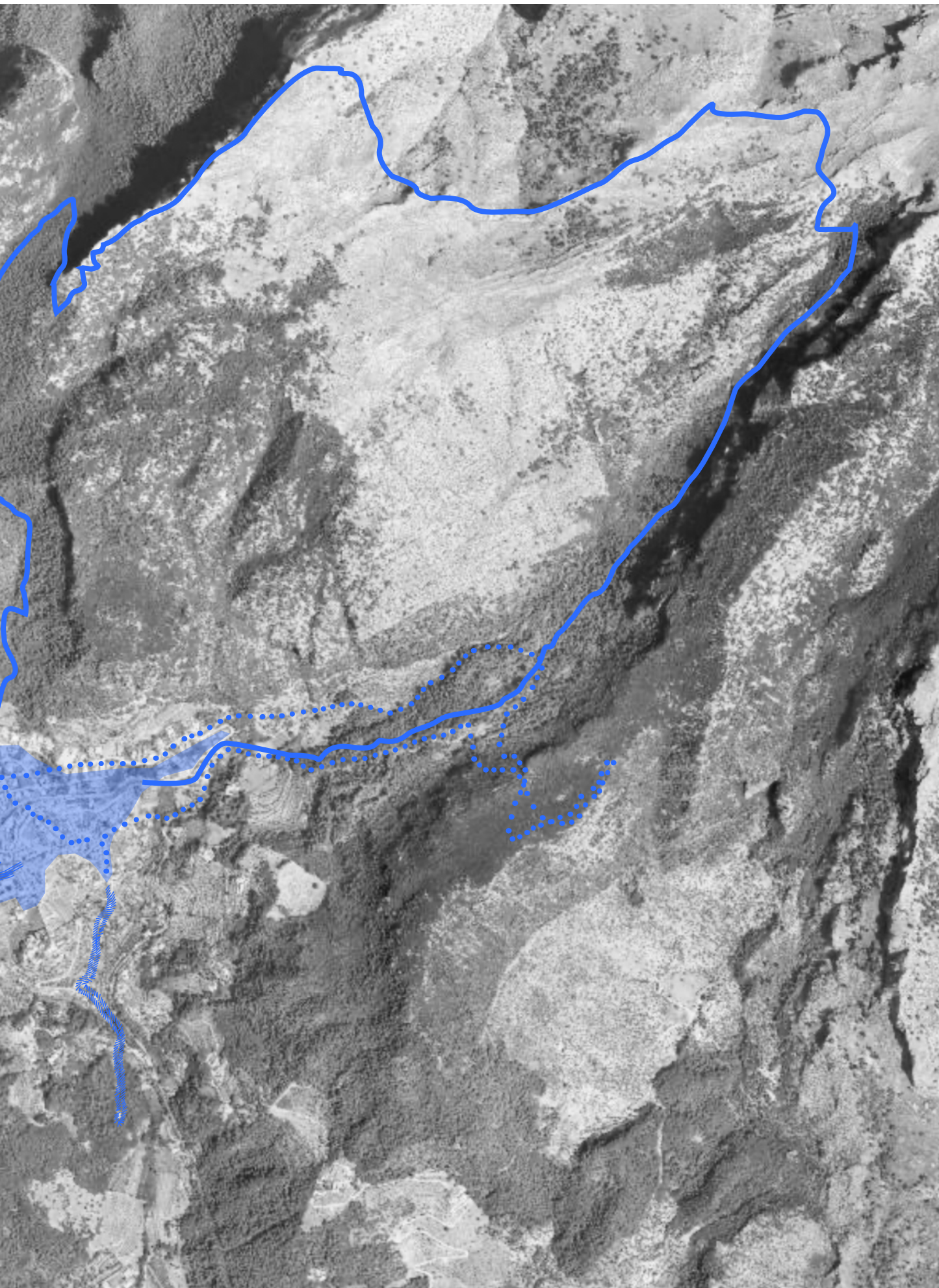


Figure 10: Exploration paths taken during field trip

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