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**Anamnesis:
Exploring digital archives through interactive experiences in the theoretical framework
of memory studies**

Master thesis

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Multimedia lecturer
MA in Choreography

Allowed for defense

Viljandi 2024

Abstract

The first chapter discusses the definition of memory in different timelines and outlines the differences between cultural and communicative memory. The practical importance of memory is highlighted and put in the context of the practical project. The research question is posed: how well can interactive web-based projects promote a sustainable interest in digitized archives of different cultural institutions?

In the theoretical part, I explored the questions that I deemed important in connection to the timeframe and personalities I've chosen and drew examples from the various cultural fields to support the theoretical definitions that I was exploring. In the following sections, I discuss the concept of digital heritage and computer science, which helped to contextualize the digital aspect of the project within the relevant research. In the next section, I outline the practical part of my thesis and the line of thought preceding the choice of the topic, timeframe, and format. Then I describe the approach I chose for the storytelling part of the project and the technical tasks of the practical part of the project, including the features I aimed to implement and the extent to which I succeeded. I analyze the data from the survey and website statistics, how they guided the iterations of the tool, and how they improved the latest version of the project. Finally, In the Appendix, I include the drafts, tests, wireframes, statistics from the website, and feedback from the test group. At the end, I outline the area for future research in the field of interactive tools for memory remediation and the relevance of my research question.

Table of contents

Abstract	2
1. History is an art of memory	4
2. The elements of the memory	7
2.1. Memory in terms	7
2.2. Memory localization	11
2.3. Memory, contested	13
3. Digitalization of culture	18
3.1. Memory in archive	18
3.2. Individualization of memory	21
4. Memory in practice	22
4.1. Development of the idea	22
4.2. Storytelling	23
4.3. Conceptual features of the tool	26
4.4. Stylistic choices	28
4.5. Technical task	29
4.6. Survey results	30
Conclusion	36
Reference List	37
Links	40
Appendices	42
Summary	48

1. History is an art of memory

The interpretation of a nation's history is heavily influenced by its current circumstances, as recent global events have highlighted. As we navigate the Anthropocene era, humans are altering the earth, air, and matter. We have also created the concept of time. Our products incorporate numerous components from around the globe, and we consume more information than ever before, yet retain less. In the context of globalization and mass consumption, it can be difficult to appreciate the value of memory as a tangible and meaningful entity, steeped in tradition and superstition. Despite its lucid nature, memories can be fleeting and easily forgotten, slipping through our fingers and out of reach. Prior to the invention of written language, the transmission of cultural knowledge was a professional enterprise. The responsibility of recording births, deaths, successions, auspicious and inauspicious years, magical incantations and songs, charms, and medicinal recipes fell upon shamans, specific families, and even castes, such as Indian brahmins (Kappens, M., 2020). Even when information was recorded in writing, the criteria for selecting important information differed from modern standards. Marek Tamm stated that the records of the harvest size in a given year were more important than predicting when the harvesting should begin. This indicates that people were focused on recording events rather than making predictions. Writing also led to an increased focus on time and the development of the concept of history. Therefore, it could be argued that history is a direct result of the emergence of writing. It became possible to record, interpret, and understand the complexities of human experiences and interactions over time through the provision of a tangible and enduring medium.

According to Jan and Adelaida Aasmann, what I will now refer to as communicative memory was not recorded, but rather transmitted informally and outside of institutional structures as a means of sharing knowledge (Erll & Nünning, Aasmann, 108). It is possible that communicative memory patterns compensated for the short span of memory by being diligent in acquiring information. In some communities, such as the aforementioned Indian Brackmans, there were individuals responsible for remembering all the history, acting as live books. This highly localized distribution and engagement can still be witnessed in more enclosed and indigenous communities. Oral historians, such as the Griots in ancient Mande society or the Dyelli in Africa, were highly respected individuals responsible for preserving and sharing the history and practices of their communities (Hakimah, A. 2020).

These oral traditions served as both educational tools and entertainment, enriching cultural celebrations and events.

One potential challenge in distributing communicative memory is the complexity of its structure. Culture involves structures and processes within a 'network of the spoken word', and therefore operates on multiple assessment levels. We use our memory not only to communicate with others but also to narrate our inward experiences, Proustian-like stories over the Madeleine cookie, going down the street in the inner monologue.

Communicative memory and cultural memory are two interrelated concepts that shape our understanding of the past and influence our worldview. Communicative memory refers to the personal experiences and knowledge shared among a small group of people, while cultural memory is the collective memory shared by larger communities or even entire societies.

Cultural memories are typically better preserved, stored, and described than communicative memories, as they often take the form of artifacts, traditions, and stories passed down through generations. However, cultural memories also allow for more interpretation and are not limited to objective facts. They often reflect the emotions, values, and beliefs of the people who created and transmitted them.

Friedrich Nietzsche noted that cultural memory serves as a "celebration of existence," providing meaning and joy even when other aspects of life may be disadvantaged (Gauntlett, 2008). This is particularly important in times of hardship or crisis, when survival is a primary concern. The extract from the interview with one of the artists I chose for this project aligns with this definition with a swift easiness: "We walked together (with Alla Gorskina), thinking about how, what, that, flatness, decorativeness, symbolism... We did not want to paint like Shishkin - Shishkin went to paint his forests. He would take an axe with him and cut down whatever was in the foreground that bothered him. He painted - but what he painted is not really art. Art is an image of the spirit, a system of national aesthetic thinking or perception" (Ovsienko V., 2005. Interview of Opanas Zalyvakha).

Aristotle's concept of art as imitation (mimesis) is relevant to both types of memory. While communicative memory may involve the direct experience of objects and events, cultural memory often takes the form of representations, such as paintings, sculptures, or stories. These representations do not necessarily reflect objective reality but can evoke emotions and feelings tied to the original experiences.

The Romantic era critics in the second half of the eighteenth century introduced the idea that creative expression reflects not only the external world but also the inner thoughts and emotions of the artist in regard to that world (Gauntlett, 2007, p. 27). This has led to a world of interpretations that are not always clear or definitive, as different people may have vastly different understandings of the same work of art. Nonetheless, the visual representation of cultural memory has become a characteristic and enduring aspect of human culture.

From where I stand now, the search for the embodiment of the memory seems to end, - in the pixels of the mobile screen.

In modern society, the boundaries between communicative and cultural memory have become increasingly blurred due to advancements in technology and the proliferation of visual information. Today's world places a strong emphasis on visualizing all types of information, from educational materials and entertainment projects to casual doomscrolling. The borders between these types of memory are fuzzier than ever, so it is important to consider the nuances that come into play.

Contemporary researchers continue to refine the concepts of communicative and cultural memory. With advances in storage and assessment technologies, as well as tools for remembrance, these concepts have become increasingly interdependent. Contemporary objects of cultural memory often have a feature of documentation in their iconography, that we now can recognize and describe, while communicative memories become works of art themselves, like the recordings of radio shows and video-portraits of artists, witnesses of historical events, and survivors of natural and man-made disasters.

One thing remains true - the active retrieval of meaning from memories requires a commitment to engagement and interaction with the objects of the past. By engaging with these artifacts and practices in a thoughtful and meaningful way, we can deepen our understanding of history, culture, and our own identity..

So in this project, I wanted to document my exploration of the field of memory, and follow the different threads that connect memory with information technologies.

As an embodiment of that exploration, I will present a project, that shows the infusion of communicative and cultural memory. As a memory material, I will draw from two subjects closest to me at that moment - modernist art and a history of repressions of 1960th.

I already brought forward the concepts of cultural and communicative memory, and in the following chapters, I will expand on the terminology of the memory, postcolonial trauma in the countries of the “Eastern block”, and cultural heritage informatics.

That will give me the necessary theoretical background to place the project that I realized as a part of this thesis in the context of past research and outline the possibilities for the continued exploration of the topic.

2. The elements of the memory

2.1. Memory in terms

What we lived through, what we passed, and what was passed to us creates the identity. David Gauntlett in his book about creative practices writes:

"I was struck by 'the will to coherence' - the desire to assemble a solid and unified view of self-identity. It was also possible to see participants asserting their own distinctiveness within the context of an increasingly globalized and mainstream fashion-led culture. The role of the media emerged as the provider of stories - ethical resources which people use to orient themselves towards aspirations" (Gauntlett, 2007, p. 196).

But long before the globalization of culture, cultural memory was already exteriorized and objectified in both symbolic and physical forms (Assmann, J., 2008). Previous cultural states constantly throw fragments of themselves—texts, fragments, individual names, monuments—into the future of the culture (Lotman). Each acquires another shade of meaning depending on the context in which they are used." This process can be likened to oxidation - in a short time span, the changes on the metal are not noticeable, but leave the saucer on the shelf for a few decades, and invisible forces of time, air and humidity transform the hue completely. The initial turn in the understanding of collective memory was performed by Maurice Halbwachs. He argued that the group's memory is shaped by episodic events rather than semantic continuity. The term has its roots in sociology, with Halbwachs being the student of the founder of macro-sociology, Durkheim, who pointed out a similar phenomenon on his side,

saying that "The group thinks, feels, and acts quite differently from how its members would if they were isolated"(1895).

In Halbwacht's terms, memory encompasses knowledge shared within larger groups of people. It extends beyond individual contributions and embodies a broader community or society. This shared knowledge encompasses language, social practices, and the collective understanding of history. Importantly, collective memory often remains within the boundaries of a particular group and typically doesn't span more than three generations. This new reading struck a chord and quickly became a popular topic of discussion within fields ranging from history to political science and literature. From there, the differentiation between cultural memories and collective memories is integral to understanding how societies preserve and pass on their historical and cultural narratives. Jan and Adelaida Aassmann bring the distinction between cultural and collective memory: the former being embodied in cultural objects or externalized in monuments and traditions, created by people who specialize in those crafts, whilst the latter is passed down within small groups, even to family circles. Cultural memory originates from specific groups of people, such as poets, artists, and shamans. These cultural specialists create or utilize objects of culture, such as rituals, texts, and images. These objects, as Aasman (1995) explains, serve as more than mere artifacts; they act as instruments that 'stabilize' society's self-image. In other words, they are not just repositories of the past, but they actively shape how a community perceives and connects with its history. The term "collective memory" is often criticized for its anti-individualism, but historians and memory researchers debate the importance of individual contributions to history, even when individual voice dies out in the pit of history.

Additionally, the critique becomes less relevant for the web-oriented mind, a time when "society becomes more and more independent from the contents of individual consciousnesses, and the collective consciousness decreases and becomes emptier and emptier." (Esposito, p.183)

As we established the main terms, it feels important to bring forward the notion, restated by many researchers, that "history transcends mere factual reproduction; instead, it constructs meaning by embedding events within cultural memory." (Tamm, 2008) The agreed term for this concept is mnemohistory, which explores the relationship between memory, history, and identity and is engaged in the actuality of the past and its later influence.

And to take it one step further, "the concept of mnemohistory allows us to shift from the often unresolved questions of 'what really happened' to how specific interpretations of the past enable later communities to establish and maintain themselves." (Tamm, 2008)

Lotman adds depth to this understanding by asserting that memory is not a static repository of information but a mechanism for its regeneration. Symbols embedded in a culture hold information tied to past contexts, yet their awakening requires placement in a contemporary context, which in turn transforms and recontextualizes the meaning. A casual example of this is vinyl players, becoming elements of luxury, while before they were merely meant for reproducing music; French teenagers sew jackets from 19th-century tapestries they find in dusty attics; and Ukrainian traditional elements of festive clothing for special occasions, nowadays worn by some people as everyday accessories.

It may be said that technologies only serve to enhance the effects of nostalgia and those who sell a commodity or make a media product use retrotyping to draw upon nostalgia and capitalize upon the mnemonic imagination, and it wouldn't be false. But the fact that our generation perceives nostalgia in a way that allows such capitalization, tells a lot about the kind of society we are - longing for the meaning from the past to add up to the present.

In the current digital age, the quantity and consistency of information are crucial for data-driven algorithms and trends. As a result, accessing archives is no longer limited to researchers and historians, but is also a means of adding depth to arguments. At this point, knowledge ambiguity becomes more prevalent, and tradition, DIY, and history are increasingly present in public discourse. Memory becomes a commodity, wrapped in gift paper, as people purchase recipes from grandmothers with bright covers, even if the grandmother is from Australia. Various cores are forgotten and revived - old films, fashions, toys, and motifs from around the world. Many contemporary artists describe this state as transnational, while philosophers tend to use the term post-national.

But along with that, in the whirlpool of digitalization of history, there is a place for local traditions and culture-specific events. Cultural memory, as highlighted by Rudy Koshar and others, is marked not only by a constant process of 'construction' and 'invention', but is also ritualistic and performative, drawing its energy from the repetition of culturally specific bodily practices (Tamm, 2008). I would argue that many of the rituals in the modern context are obsessed with form more than meaning, and is not as bad as it sounds.

Take, for instance, the ancient custom of Midsummer pyres in Estonia. Along with the usual celebrations, there is a new ceremony of lighting the Torch of Victory on that day. It doesn't seem to have an actual religious meaning for most people, but is still seen as a significant, beautiful, and comprehensive national tradition. Another example is the tradition of pysankarstvo (decorating Easter eggs with the wax-resist method) which is regaining popularity among young people in Ukraine. Most of the people decorating the eggs for Easter are not necessarily putting sacred sense in their inscriptions. But all of this keeps the tradition alive and running in intergenerational communicative memory.

Building upon these insights, Aassman's classification of cultural memories into potential and actual resonates with me strongly. This framework aligns with the primary objective of this project - to transform the potential within cultural memory into the actual through the remediation of the subject. This process aims to bridge the instrumental gap between historical events and the ongoing construction of national identities, offering a digital perspective on the interplay between individual and collective remembrance.

To round up, individuals identify themselves in the globalized world through various factors of attraction. The transnational state of memories is balanced by an increased interest in local traditions and products, and digital tools are used to curate and individualize a massive wave of incoming information. Consequently, the main resource for learning about the construction of our identity is through contributions to the media field. The more approachable the information is, the more chances it has to end up as a piece of impression and memory in someone's mind. With such a flood of content from all over the world, it is important to maintain a sense of regional and national identity while keeping an open mind. Remembering is a realization of belonging, even a social obligation. One has to remember in order to belong (Erll, A. & Nünning, A., 2008, Aasmann, J., 109-118). This idea, explored in Nietzsche's *Genealogy of Morality*, emphasizes the importance of individual freedom and autonomy, rather than conforming to external forces or ideologies.

It is crucial that we continue to explore these nuances and complexities to fully appreciate the role that memory plays in shaping our identities. It is even more important to comprehend the implications that arise when individuals fail to defend their memories and rights for free thought.

So I decided to create my own web-hosted tool, that will present the art and artists of the period when the right for memories was contested.

2.2. Memory localization

There I would like to take a step back from the general historical and terminological frame of the communicative and cultural memory and address one point on the timeline: post World War 2, satellite countries of the Soviet Union, Estonia (ESSR), and Ukraine (USSR), 1960-th, a number of crimes and arrests made by state plant the seeds of fear in some, obedience in others, crash hopes of many.

Two societies that had felt the air of the free state in 1920-th, under the strict eye of the macro-criminal ideological machine with its “steel hand” rulers for the next half a century. The everyday practices of the people living at that time were shaped by an overarching idea of how life is to be lived, how newcomers and general residents are to behave, and to think and to express themselves.

That is even harder to understand for us, as individuals at all levels of society never thought more than now about their ‘aspirations’, ‘goals’, and what they’d like to do with their lives.

In recent years, there were a few “revelations” that showed me the depth between these two states of mind and pushed me to explore this question.

During the last decade, quite a few organizations and local initiatives both in Ukraine and in Estonia started recording interviews with the witnesses of the Soviet regime. Among them are “Ukrainer”, “Center of Urban History”, and the project “Kogu me lugu”. Well, scarily many interviews that I watched highlighted the self-censoring issues of the witnesses and victims of the oppressive regimes. Some thought that their stories were not worthy of telling, some implied that the history ought to be told by “professional witnesses” and were unwilling to speak on camera, fearful, still, after more than 30 years of independence, of telling their truths. Surprisingly, with the full-scale invasion of Russia into Ukraine on the 24th of February, some of these blocks faded away. Never before have I witnessed so many people having such a fast change in their mindset and perception of the events. Those, who never thought about themselves as Ukrainians before 24.02.2022, leaped 100 years and started to make their disconnected history theirs again overnight.

My personal experience became intertwined with the broader context of shaping the past. Having transitioned to speaking Ukrainian almost exclusively in the years leading up to the invasion, I observed a significant cultural shift in both media and the collective consciousness, triggered by premediated, but somehow still unexpected act of aggression. In that sense, facing the enemy state that once again denies the subjectivity of your country helped with burning the victim mindset down and ascending into active agency more, than the decade of free speech. The speed with which the national identity was reclaimed seemed unprecedented. Not only at the level of the state, but also in family circles, on social media, and in activism, people were rediscovering their roots and sometimes identifying as Ukrainian for the first time without even having those roots. The state of war highlighted the complex interplay between historical events and cultural memory.

I concluded that this speed is a pushback after many waves of deportations, displacements, and repressions of the 1930th, and then the '60s, and '70s. Our parents and grandparents, who should have been the carriers of communicative memory, were coerced into forgetting. The result was a severed link between the generations, which was exposed by the wartime aggression of the Russian state. But this exposure and pain, in turn, became the first step towards recovery.

I found the validation for that thought by reading about the concept of delayed collective memory, which refers to the storage of collective memories during a "latency period," in which they remain beneath the surface, unacknowledged. Reasons vary, but they are mostly negative: deportations, ethnic cleansing, wars, repressions, - all among the tools that cause the break in tradition, all used with the means of claiming the power. This explanation is based on the pretext that individual memories are only understood within the context of a group, unifying the nation or society. Delayed collective memory suggests that these memories only resurface when they align with the social and political objectives of the time and fit within a framework of contemporary interests. With that said, this delay also provides the benefit of historical distance. As individual voices fade, a selection process takes place, and narratives are created, allowing for a more coherent understanding of the past. Methodologically speaking, it makes sense, as memories are at their most collective when they transcend the time of the occurrences of the event and the lifespans of most of its participants. That duration marks the point after which they can become a basis of collective disembodied, omnipresent,

low-intensive, low-key memory, with no final receiver, but plenty of figures for admiration and symbolic objects, collected along the way. Finally, stories are rooted in national identities, and objects get some unified form and theme for further representation.

Following the development of these unsettling thoughts, (which were hovering in my mind, while I, along with millions of people across the country, lay in the sleeping bag in the wardrobe, the only place in the apartment without windows), I distracted myself with meditations, tests for the knowledge of Ukrainian history, and filling in the coloring book app on the Ipad. Somewhere at the same place and point in time, I was writing a motivation letter to apply for this program, describing the plans for the master's project.

With that said, I won't resist the statement that from the very start, I perceived this project as a little meditation and, in line with the Jungian terms, saw it as a way to access archetypal within the individual, and to make the process equally important to the result.

And I wanted it to feel the same for the visitor.

This initial idea got filtered through the different mediums and events. The form transformed through the inner and live conversations, and the content plan was narrowed and conceptualized during the art residency titled "Digitization for the preservation of Ukrainian Heritage." The premises deepened with the research papers on the topic of cultural memory and heritage informatics, blogs and articles of the new generation of Ukrainian essayists, observations, and listen-ins of the people in the cafes and the public transport. Additionally, the change in countries added a layer to this observation, emphasizing the contrasts and similarities between the cultural memory dynamics of different nations. This perspective gained through distance, highlighted the profound impact of external events on the construction of cultural memory, particularly in nations whose development has been interrupted by external forces.

2.3. Memory, contested

I recently read about the Memorial to the Victims of Communism in Tallinn, which used the metaphor of a swarm in the monument proposal. The verse from the poem by Juhan Liiv, 'And thousands fall along the way, still a thousand others make it home...', echoed and beautifully completed the metaphorical transfer in words. This article made me recall my own memory. The Holocaust Remembrance monument, located at the stela of Baby Yar, which I

recall walking past. The Sefirot installation consists of 10 stainless steel columns, which feature over 100,000 holes. These holes were shot with bullets of the same caliber as those used by the Nazis.

It prompted me to consider the contrast in the representation of the sites of commemoration and the monuments of the victorious generals and monarchs. In the aftermath, catastrophe is anonymous, and grief cannot be contained in a particular figure, while victory in the battle usually finds the final representative.

Art offers surplus aesthetic pleasure and the possibility of becoming engrossed in singular stories about imaginable individuals. Novels, music, films, and performances have gained outstanding popularity and helped to build up a sense of a larger geopolitical world for the European states after the turmoil of World War 2. Meanwhile, the numbers of the losses are unperceivable and abstract, and can only be accessed through visual and implied metaphor. That approach produced art of a different kind, as shown in the two aforementioned examples.

In parallel, art in the Soviet Union had two options. One was the social realist style, which served the needs of totalitarian power. The memory of war and losses for the whole second part of the 20th century in the Soviet Union can be summed up in the motto, “We can repeat”, which is still very present in modern Russian victory parades. And social realist art existed in its own reality, portraying triumphant, healthy soldiers returning home from a one-handed victory over Nazism.

The second option was represented by the style of all the others, who reached the outward or inward words in the personal investigation of identity. Those people are now mostly regarded as dissidents. The right for commemoration, or grief, however abstract, was not granted at all.

What fascinated and reassured me while observing the history of this phenomenon was the obvious foil of this first option and the contemporary perception of its iconography. Many curatorial comments about social realist art start with a comment like: “Officially, it belongs to the art of the Socialist Realism era, but the author still managed to include many ethnic motifs, including Greek, Ukrainian, and even Carpathian ones”. The main thing I grasped is that the formation of the cultural memory is a subtle art, and the pushing of the narrative makes it tendentious and foil in retrospect.

By weaving together in a crochet-like manner polycentric memory discourses through multiple flashpoints and contact zones, the aftermath of this history subordinates the significance of the past to the realities of the present. But just as crocheting, threads of the memory require space and air. The result we observe after years after World War 2, is that where Europeans don't share a common narrative, they increasingly share both common cultural memory and interest in the local cultures. Unfortunately, many states and governments who tried themselves in the reshaping of history were rather weaving a noose for their satellites' memories and traditions, all in an attempt to contain the overgrown body in its borders. Ann Rigney writes: "Where 1945 meant liberation for "old" Europe, it had marked the beginning of a new wave of dictatorship for the countries in the East."

The Russian Empire, followed by the Soviet state and later the Russian Federation, aggressively colonized Ukraine and Estonia for a period ranging from 50 to 200 years. Throughout the 20th century, the people of these states were displaced, exploited as a resource, and deprived of their own culture and language. In its own way of dealing with trauma, Estonia has analyzed its national history from the perspective of gaining and losing liberty, starting from its earliest endeavors in this area. It is crucial to maintain objectivity and avoid subjective evaluations, which is why Estonia's Scandinavian roots have not been prioritized in this context. The author confidently constructs a narrative aimed at unifying various battles and uprisings into a single great struggle, which Tamm refers to as 'The Great Battle for Freedom'. It is clear that the national heroization of Estonia's past abruptly ended with World War II and its annexation to the Soviet Union. Despite the significant impact of the Soviet period on memory work, surprisingly little of it has influenced the patterns of national historical memory. Forgetting is a significant aspect of modern-day Estonia's cultural agenda. The following two examples from the recent Estonian cultural decisions of the recent years that demonstrate this dynamics.

In 2007, the Estonian government decided to move the Bronze Soldier monument from the city center to a military cemetery on the outskirts of Tallinn. Soviet officials erected the monument to commemorate Soviet forces pushing the Nazi army out of Estonia; many Estonians considered the monument to be offensive due to the decades-long occupation of the country by the Soviet Union. The fact that it was deemed redundant says a lot about it.

Then, in 2023, within half a year, I encountered two Soviet monuments to the fallen soldiers that were demolished in two places in Viljandi. Afterward, I read that these were the tombstones for the Soviet soldiers that were reburied as a part of a government initiative, and the complete lack of fuss compared to the example from 2007 in Tallinn is noticeable.

The history of Ukraine, if we take Kyivan Rus as a starting point, is characterized by a longing for Europe, for the last 300 years it has been difficult to shake off the status of colony and satellite. There I see a different kind of dynamic: even after the declaration of independence in 1991, there was a short-sighted forgetting of the dissidents of the 1960s and 70s that lasted almost a decade. It was only the EuroMaidan of 2014 that seemed to move the bar and, among other things, ignite a wider interest in the stories of the oppressed.

The superimposition of the optics of the so-called “rebels” of that time fits perfectly into the current context of the war of Russia against Ukraine, and there is no coincidence.

Vyacheslav Chornovil writes in his book "Lyho z rozumu" ("The Madness of Reason", 1967):

"When the official press is telling outright lies, the intelligent person begins to look for the truth in unofficial sources and discovers a new way of thinking and a new national identity."

All the artists of the 60s were brought up in a "Marxist spirit", but they dared to "interpret" it and were punished for having thoughts. They were well aware of the possible consequences, having seen the previous wave of Stalinist repression, but they were prepared to fight for the ideal of freedom.

These shared experiences unite all the artists in this project. So I tried to reconstruct the moods of society from the example of the brightest and most 'problematic' subjects. As of 1968, over 500 prisoners of conscience were held in USSR prisons and camps on political charges, with approximately 50 people detained in 'psychiatric facilities.' However, from the interview with O. Zalyvakha, I got different numbers:

“ Interviewer V. Ovsiyenko: How many people were in that 11th zone?

O. Zalyvakha: There were two thousand and something, and about half of them were Ukrainians”.

And that is from one “gulag”. But even these numbers may appear insignificant when compared to the general population of 209 million, but they take on a different meaning when

compared to the number of people who lived in cities and actively participated in cultural and political life, rather than merely being subjects. Moreover, after their imprisonment, several political prisoners, including Ulo Sooster, were barred from returning to their homeland. This is just one of the many deliberate instances of ethnic group scattering carried out by the Soviet Union.

We can observe two different cases of such dispersion. The population of the Ukrainians in the Kuban region of Russia in the census for 1926-7 summed to 1,222,140 Ukrainians in the area. Due to Russian and Soviet national policies—including the Holodomor—most of the population became russified, and the percentage of those who identified themselves as Ukrainians dropped from an official 55% (1926) to 0.9% (2002).. By contrast, the population of Russians in Estonia, 7.3%. after World War I, and 25,6 % by the census of 2008. In 2011, University of Tartu sociology professor Marju Lauristin found that 21% were successfully integrated, 28% showed partial integration, and 51% were unintegrated or little integrated.

Many artists I chose for this project were also subjected to deportation or emigration but were notably able to keep or/and restore their sense of national identity. Opanas Zalywakha and Alla Gorska moved from Ukraine to Russia as children but returned to their homelands and learned the Ukrainian language already as adults. Opanas Zalywakha says: “Having lived in Russia for more than 30 years, I had forgotten a lot of Ukrainian words or didn't know them at all. I used to walk around with pencil and paper, write down unfamiliar words, and learn Ukrainian. I was not the only one - we used to sit on the floor at Alla's (Gorska) workshop and write dictations, Lyuda (Semykina, another artist from the club) dictated to us”.

The choice of the artists presented in the following chapters and in the project are not random, but instead follow the patterns of communicative memory. They select not the brightest star, but the constellation of many, condensed into one symbol, one metaphor.

Knowing who you are NOT is just as important as knowing who you are. The former shapes the latter. I aimed to present the challenging point in history and the people, who are now perceived as the voices of that time, in one dynamic frame. In this project, I have tried to actualize what I learned from that time in history and to project the findings on the contemporary feed.

The digital medium allows for the free interpretation of the material, so I used it to reconstruct for myself the elements of the forgotten history of the 60s.

Oksana Zabuzhko, a famous Ukrainian writer and philosopher, said in a recent interview (Ukrainian House, 2024), that the “history and personalities of the 60s remain the biggest “blind spot” in the cultural history and theory of the Soviet rule”. By remediating the found pieces, I wanted to map a small area of that spot and bring it to the digital space.

3. Digitalization of culture

3.1. Memory in archive

In the age of digital media, the growing rift between the amount of externalized information and internalizable knowledge becomes ever more dramatic. Elements of the canon (active working memory) recede into the archive, while elements of the archive may be recovered and reclaimed for the canon. It is exactly this interdependence of the different realms and functions that creates the dynamics of cultural memory and keeps its energy flowing (Aasmann, A., essay in Erll & Nünning, 2008, p.104).

With the established practice of digitizing the archives, these dynamics got the way for (almost) unlimited audience growth. A recent article (Villalobos, P. et al., 2022) suggests that language models may exhaust their learning materials within a few years. Another milestone would be the assimilation of low-resolution data, such as tweets and blog posts. However, this does not include text and images that have not yet been digitized. So, there appears to be agreement between humans and machines that there is limited space for new ideas to emerge, but ample opportunity for reiteration, referencing the past, and elaborating on past discoveries with the aid of new data and technology.

The digitization of memory is a complex and evolving field that is reshaping how collective and cultural memories are presented and accessed. In their recent research, Fremery and Buckland (2022) introduced the main concepts related to the framework of informational science: context, relevance, and labour. We no longer need to cover long distances on foot to access information. However, the challenge now is to distill the relevant information from the vast amount available. Additionally, these new ways of thinking are influencing how societies perceive and engage with their history and cultural heritage, creating new opportunities for preserving and transmitting collective memories.

The creation and preservation of cultural heritage is viewed as a collective act of remembrance that draws upon specific cultural expressions. This involves the processing of information, which is primarily concerned with how individuals approach and distill historical information into a framework of meaning that situates them within it. Cultural Heritage Informatics is “an emerging discipline that combines informatics, culturology, and semiotics. Its purpose is to capture, organize, preserve, assess, and advocate for cultural heritage using data-driven approaches”. Another useful definition in this context is that cultural heritage is an “informational process and product shaped and maintained through acts of collective remembering”(Fremery & Buckland, 2022). Additionally, there is a discourse that heritage “produces something new in the present that has recourse to the past” (Kirshenblatt-Gimblett, 1995, p.369).

It is this last definition I find interesting to explore in the context of digitization and digitalization. Firstly, it must be said, that the main part of the process, digitization, which involves taking an analogue object and creating a digital twin, is a labour by itself. Even from a purely technical standpoint, the digital reproduction has to adhere to the requirements of archival backup copies—using tiff file formats, a resolution of at least 300 dpi, color correction charts, and scales — but still, the digitizing process can only record the appearance of the piece. The materiality of the piece is lost in the process. Digitizing artworks according to current means and understandings is inevitably restrained by the shallowness of the production of digital reproductions. Spatial approaches to documenting sculptures and architecture with photogrammetry also require a lot of work, a special instruments like depth cameras and drones, and are still used for documentation and restoration purposes, not as an independent or fully realized work of art.

That is all to say that museums as physical spaces are not in any way made redundant by this process, but are given yet another position to fulfill. As we established, the main goal of digitalization is to use the result for long-term preservation, public accessibility of a digital record, and the reuse of digitized materials.

Some examples where digital tools that are successfully used to preserve and transmit cultural and collective memory canon include:

Online image archives: Projects like the Center of Urban History, in Ukraine, online collections of museums, and digitized private collections, all focus on creating online image

archives dedicated to a specific period, incorporating spoken history components to preserve and present emotional and impartial cultural heritage.

Digital technologies for heritage maintenance: sites like Visit Estonia and Ukrainer use digital technologies to cover the maximum possible number of region inhabitants for the introduction of existing data, reinforcing the national identity of Estonians and Ukrainians in the virtual space, and creating a platform for actualizing the places, people, and events in the modern context.

One historical example of the importance of such funds in the successful preservation of the archives of Ukrainian Free University, composed of the archives of many Ukrainian intellectuals who fled the country (UNR at the time) in 1920 when bolsheviks occupied Ukrainian territories. Despite the loss of the majority of the archive during 1945th Hitler occupation of Prague and the confiscation of the documents for their “return” to USSR, UVU still has a unique library and an original archive with a total volume of materials (since 1945) of more than 500 thousand sheets of documents, which occupy approximately 300m of archival shelves, and contain many unique maps, letters, and other document that are partly digitized, and that many modern journals, projects and publishers refer to to that day.

These examples demonstrate how archives are being utilized to preserve and disseminate cultural and collective memory, contributing to the maintenance and transmission of historical and cultural narratives in the digital age. But preservation and utilization are not the same, and many other archives are exactly that - underutilized. One of the reasons for that is suggested by Hoskins (2017), who argues that “too much information always potentially available at a touch, a tap, a flick, a swipe, or a spoken command, has moral consequences for ignoring the world out there”

Given that the online collections of the museums are still a kind of list of items with metadata, a storage spaces, we are left with the understanding that the items still have a chance to get the remediation only when they get on view in the physical space.

I found more evidence for this claim when I looked through my search for objects for the project had a counter for the number of visits to the page or the date of the last access. Many times the last access was a few months back, and it was accessed by me, during the preliminary search. Some websites offer blogs and articles, but the structure of these websites is limited and cannot be extended to serve another purpose. In contrast, webpages that tell a

specific story with the use of archive photographs and visualizations have a longstanding success. Some websites excel in specialized presentations and virtual tours of topics of interest.

Web portal Kogu me Ludu creates not only videos and interviews, but also online exhibitions about Soviet repressions, and an initiative group Sity Research, made the reconstruction of the events of Euromaidan, which employs VR-tour and 3D visualizations of the events.

However, to the best of my knowledge, there are no interactive tools that approach the story of the repressions of the 1960s and the role and place of artists in the Soviet system of that time. That is how I formulated another goal, - promotion of the digital archives and initiatives, that feature cultural objects and common elements of the past.

3.2. Individualization of memory

Another factor gaining popularity with the advancement of digital tools is the individualization of memories. In today's world, we no longer simply retell stories to each other. Instead, we recommend tools that allow us to give or get our own unique result or personalized reaction to the information (anything ranging from open calls to book review accounts to Reddit and Substack, and most recently, AI-powered search assistants). And even more

Similarly, museum spaces are not lagging in this regard. They offer gamified tours of the exhibitions, installations, and recreation spaces. There are many great examples of interactive guides in museum spaces like KUMU, NAMU, and curated exhibitions in the art galleries, that engage the viewer through interaction, question, light, and sound. The KUMU museum has a particularly noteworthy piece in the exhibition that allows visitors to analyze the Konrad Magi paintings in different ways using professional tools for the exploration of the painting.

The utilization of creative and visual methods of conveying information offers several advantages over text-based approaches. In the case of creative tools, the process of *doing* something related to the topic allows for a greater opportunity for unconscious reflection and the incorporation of newly acquired knowledge about the topic into one's memory in a multimodal form, that includes text, creative task, and our response to it. This, in a way, brings us back to the first chapter, to the shift in the understanding of art in the Romantic era.

The process of creation within the given context also ignites a holistic response, prompting one to consider the bigger picture of the connectedness of all the elements of the creative tool: *text*, that precedes the task, special *rules and limitations* that are introduced in the interface, and *variants of the use* of the elements.

There I formulated the last goal to achieve in this project. I wanted for it to feature the aforementioned qualities of individualization and interaction, and to propose creative engagement with the elements of the archive.

4. Memory in practice

In the following paragraph, I will describe my approach to the task of creation of the digital tool, explain the logic of the web page, storytelling tactics, and some iterations I went through in the testing stage.

The question I asked myself before approaching the practical part is whether digital interactive tools can be used to promote sustainable interest in cultural objects from the archive. I aim to put under one sail some of the common ways of life in Ukrainian and Estonian art circles in the 1960s, using the objects discovered in digital archives. The project includes objects and processes ranging from textiles, photographs, and paintings, to furniture, packaging, and clothes.

By employing elements from the archives and remediating them as an artistic tool, the project aims to create a seamless (literally) narrative that connects our historical past with our present, thereby fostering a deeper understanding and appreciation of the cultural heritage. The following chapter will describe my contribution to the field of digital informational heritage, - this project is built on the entanglement of communicative and cultural memory, nostalgia, commemoration practices, and the dynamic nature of remembering. I aim to provide a framework for actualizing digitized archives and promoting lifelong learning.

4.1. Development of the idea

The Anamnesis project is an interactive website game that utilizes objects from Estonian and Ukrainian museums, websites of local initiatives, and other digital archives to actualize

some aspects of cultural memory and create continuity within the frame of everyday expressions.

This practical part is the result of unsettling thoughts, conversations, ideation hackathons, and articles. The objective of this project is to examine the interconnections and continuities between the generation that was active in the 1960s and the generation that is currently active., and reconstitute the connection to the past through the use of information technologies. Even when the memory is lost in parts, collective remembering still functions as a learning tool that relies on externalized meaning. This meaning is embodied in cultural expressions such as monuments, literature, rituals, performances, oral traditions, and archival records. The main barrier to retrieving this meaning is a lack of interaction with these cultural artifacts and practices. Therefore, it is important to have accessible information about tradition and its integration into basic cultural practices. Some of the elements used in the project are often overlooked due to a lack of awareness, despite being in plain sight. These elements include vases on tables in grandmother's apartments, mosaics on restaurant walls, architectural ensembles of hospitals.

4.2. Storytelling

As I already mentioned, my main goal is to attempt to create a tool for a little distraction and/or meditation. Firstly I thought from the straightforward perspective of an edutainment project, think quizzes, lists of connections and answers, links, and references. At some point, I ended up back at the very start. I looked at the initial wireframes and weighed the limitations of time and skill that I had available.

This caused me to feel ambiguous about the edutainment project, which covers many topics and has a wide audience. Eventually, I narrowed it down to one idea in the 'quiz list'. It was supposed to be a purposely decimated tool that allowed some interaction with the objects from the archives.

I conducted research to identify a specific topic to serve as the foundation for my search within the archives. Initially, I considered exploring the objects that represent the transfer of knowledge directly through cultural objects. I considered tapestries, pottery, songs that describe the road from one place to the other, the right time for harvest, or retellings of

religious storylines. While I still believe this to be a valid subject for discussion, I later reframed this idea due to two considerations.

Firstly, I believed that my focus group would mostly consist of individuals with limited prior knowledge of the subject. And cultural objects in vacuum, without a story to back them up, do not have much meaning for the unaccustomed viewer. So I had to add the storytelling part for the introduction, which will tell the stories of the individuals.

Secondly, I defined that my main historical interest lies in the 1960s, and I wanted to use both Ukrainian and Estonian cases of counterart movements as examples. Here comes the first feature - the first choice in the tool is a choice of the country, which determines the set of objects to use.

The research started with the resource hunt for digitized collections, organizations, and local initiatives. I looked through it page after page, arranged my findings in an Excel document, and looked for similar patterns, colors, and motives, taking guesses, and searching for connections.

Then there was a time to find the individual stories for the storytelling part. I have previously outlined the rationale behind my interest in the 1960s, the personalities and narratives from that era. I consulted a number of available books on the art movements of the period and the letters of the participants to one another.

Once again, this period is not as extensively researched as, for instance, the Ukrainian "Executed Renaissance" and other cultural circles of the 1920s-30s. Also, the majority of researchers tend to focus on the most prominent figures, such as Alla Gorska in Ukraine and Ulo Sooster in Estonia. I studied mainly Ulo Sooster and Alla Gorska's letters from 1960-1970 to their friends, biographies, and interviews of the members of their artistic circles. They all reveal profound similarities in the reinstatement of their identity. The artists discussed with their friends and relatives burnt drawings, shut-down exhibitions, unemployment due to political reasons, and the deaths of loved ones in the gulags.

I was reading the article about Ivo Sooster by Fransisco Martinez (2014), when I stumbled upon this paragraph: "Nonetheless, Sooster remained attentive to the art scene in Estonia. For instance, we can read in the letters between Sooster and his Tartu friends how he worried about Silvia Jõgever once he heard that her illegal show in a Tartu school had been taken down by the authorities. He offered the shoulder of a friend and a bond of solidarity with

Silvia at once.” (1960). Silvia Jõgever's underground show of the expressionist paintings of their artistic group in a Tartu art school she worked at had been taken down by the authorities. In the next decade, Silvia got under the radar and had to stay low and in safe distance from the cultural life.

This informal and uncensored exhibition was followed by a scathing attack on the group in the newspapers and the Artist's Association of the Estonian SSR. Art researcher Voldemar Erm analyzed the exhibition positively, but later on, a condemning article by the artists Juhan Paberit and Elmar Rebaseh about the participants of the exhibition was published: "Do they really share the views expressed in the article accompanying the exhibition, which essentially call young art lovers to abandon the nature studio and trust only childish imagination, views that are actually not in line with Marxist aesthetics principles? How could it be possible to organize an exhibition on the initiative of an individual or individuals, which, moreover, gives a one-sided and distorted picture of Estonian Soviet art?"(Tiiu Hagel, 1998)

“Silvia Jodever, as Kaja Karner and Valve Janov, belonged to the generation of artists who should have entered the art scene at the end of the 1940s, but as victims of Stalinist repressions, many of her peers were sent to Siberian prison camps instead. In 1956–1967, when men were returning from Siberia, the former fellow students and like-minded artists, i.e. “the boys” who had survived the prison camps and “the girls” who had survived repression at home, got together as the first post-World War II group of artists in Estonia. The group passionately searched for an unofficial artistic language and new modern means of expression, but also devoted themselves to preserving the attitudes and aesthetics of the free pre-war art scene.” I condensed this description from the booklets of the Kumu exhibitions of Kaja Kärner, Valve Janov, and Silvia Jodever, that were held in recent years. Apart from the show in 1960, the only time artists were presented as a group again was in 1997, when an exhibition curated by Reet Mark and titled "Ülo Sooster and Friends" was opened at the Tartu Art Museum.

The members of the Ukrainian dissident community of the 1960s were predominantly drawn from the Club of Creative Youth, known as the “Suchasnyk”. In a similar period, at the dusk of the thaw and few years before the Prague Spring, they established themselves as an informal club of painters, sculptors, and writers. In the context of the Soviet Russification policy, the Ukrainian Sixtiers concentrated their efforts on preserving their cultural identity,

language, and historical heritage. In opposition to the norms of the time, the representatives of the new generation sought to expand their artistic and literary expression, thus establishing an unprecedented format of resistance (Olga Kostiuk, 2022). The activities of the club provoked a strong reaction from the authorities. The active public activity of the club members was brought to an end by the arrests of 1965 (E. Kuznetsova, Y. Hevrych, O. Zalyvakha, I. Rusyn, I. Svitlychnyi, M. Hryn). In 1970, A. Horska was murdered. 1972 saw a new wave of arrests. The activities of the Sixties subsequently became known as dissident.

One of the members of that club and a prominent figure in the Alla Gorska letters was Opanas Zalyvakha. The life of the Ukrainian painter turned in that years - In March 1966, at a closed court session, Opanas Zalyvakha was sentenced to 5 years in a strict regime camp under Part 1 of Article 62 of the Criminal Code of the Ukrainian SSR ("Anti-Soviet agitation and propaganda"), the main law twist for the sentences all around Soviet Union for the "prisoners of conscience".

In 1967, the world learned about the artist: his godfather (Viacheslav Chornovil - Opanas baptized Tarasyk) published the book "Trouble from the Mind" in Paris with the portraits and letters of 20 people sentenced to "gulags" in 1965-66.

His first exhibition in April 1962 lasted only a week. It was closed by the party authorities because "the works presented do not contain bright optimistic heroes of building a brighter future" and because of "decadent moods." Some of his paintings "create a kind of allusion to Orwell's uncontrolled world, where all living things are watched by the state eye. Only in the pained faces of his mothers, lyre players, grandfathers, and children there is a depth that is no longer afraid of anything". His next exhibition happened only in 1989, 26 years after the first.

These two names and two closed exhibitions became my starting points in my search for the relevant objects.

4.3. Conceptual features of the tool

My next question was: how to actualize and remediate the works of the two groups of painters without being dogmatic, wordy, or too straight. Keeping in mind that these two names are important for setting up the story, but in the tool, they are only part of a process.

So, I dived deeper into the horizontal context and intertextual references.

I thought, that these two artists were still a part of the narrow circle of fellow creators, their works themselves indirectly consisted of the works of others, and the ideas that impregnate their paintings were not only theirs, but they also originated as a part of the common force of opinions beyond the stiff frame of the capital canon. Therefore, using as the elements of the painting of the other artists, with whom they painted, walked, traveled, and talked, would be a natural continuation of the world, in which they created.

Yet, they still lived in the reality of social realism, and I wanted to reflect on the surroundings as well. I wanted the visitor to imagine - this could be the brand of the box of matches the artist used every day, this picture on the candy wrapper they could see when they were buying a sweet treat for the children on the way from the workshop.

And there came the next feature - two sets of objects for each country mode, that would highlight two aspects of seeing the works of these painters in the framework of interrupted cultural memory.

First are the “objects” from everyday life of the period, that they interacted with: clothes, cutlery, matchboxes, magazines, sweets, architectural spaces.

The second set features “parts of the paintings” and works of the same period, made by the people who faced similar restrictions and dealt with the tightening of the bolts of the regime in their own way.

I counted some numbers.

I reached many archives, some huge, like the Europeana portal, some very specific (like the website that features vintage Ukrainian traditional pieces of clothing), and tried to include as much variability as possible. In the end, I used elements from 18 sources.

I also collected around 100 pieces from the archives and used 41 at the end.

The next step was the curation of the chosen sets of objects. I evaluated different parts of the objects and paintings for the “fit” to the shapes and textures of the “main” picture.

I am putting quotes there because I perceived all of these elements - paintings in the background, elements used as painting tools, and even the visual elements of the website as a whole.

And I relied on the human ability of metaphorical thinking to elaborate on the story in the “main” painting and to use the brushes as they were (a building, a pattern, a bird) AND as colorful pixels that can construct anything, from the zigzag to the ground to the wave.

By abstracting the elements of the paintings and objects from their surrounding, I was able to give them a new context and remediate them as a drawing brush. This way the elements stopped being part of the whole, but entered the polyphonic space of the collage tool, where the egg could be a cloud, the bird - a figure, and the black and white archive picture of the audience - the abstract stroke, the shadow, or the mountain.

There were many deliberate choices, happy coincidences, and twists in the final table of elements. I actually got a few “everyday objects” from the paintings where they were depicted. One assemblage became a source for both “everyday object” and “element of the painting” sets.

I specifically tried to use not the main element in the painting, but to extract a colorful stroke at the background, a blurred figure in the corner, a shadow under the eyes, or a zigzag of the river.

This approach proved not to be very useful with “objects” sets, as their thingness would make the guess play too easy, and because they were already remediated by the completely alien usage as a painting brush.

I made objects very variable and tested different outputs with different forms, edge transparency, and sharpness. Later, already in the testing stage, I noted the similarity of some results to the other prominent artistic technique of the 20th century that I encountered a lot in my search - assemblage.

Obviously, my take is digital, and the object I use are already elevated from non-art by time and history, and presence in the archives, but the resemblance remains.

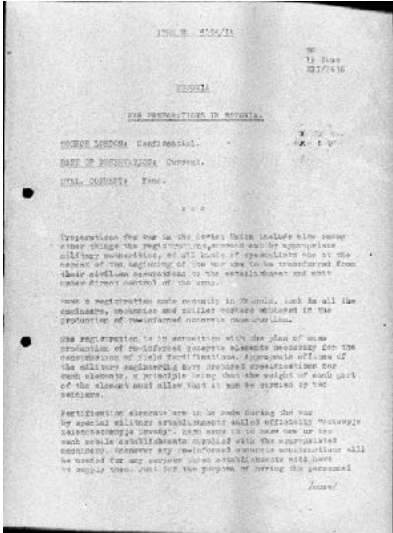
I made sure that all the items were properly referenced and cataloged, put them in a . Json file, and were ready to move to designing the web page.

4.4. Stylistic choices

The name of the project, “Anamnesis”, draws from the Platonic concept of inherited knowledge, acquired before birth, suggesting that learning entails the rediscovery of this innate knowledge. This definition resonates with the thematic and practical context of the study, wherein the memories of discussed events and the artistic legacies of various painters that had been obscured, classified, put into the archive, and sometimes deliberately erased for

over a decade, now resurface in response to contemporary needs. To me, this case symbolizes a revival of philosophies of standing amidst governmental pressures.

Furthermore, the integration of media elements within the project was informed by Marshall McLuhan's dictum, "The medium is the message"(1964). In my interpretation, archival objects can benefit from reuse and remediation (the right citation is a given there) as much as a brand benefits from the marketing integrations. But also such objects have the capacity to create the implicit meaning and to add depth to the product. As I engaged with the elements from the archives for a long time, it became evident that these elements are capable of serving more than one remediation task in the framework of this project, but can also be a fundamental aspect of the website's stylistic identity. Thus, they were repurposed as wayfinding icons, favicon, and other visual cues throughout the site, contributing significantly to the overall aesthetic coherence of the website.



elements of the website

reference for the elements of the web page design
https://www.europeana.eu/en/item/2022043/10891_osa_254d1cf3_bf22_4efd_918a_6a650a83c4ad (last assessed 14/05/2024)

Moreover, the choice of textual elements and their appearance was also inspired by one of the objects I encountered in the archive. Notably, much of the correspondence from the 20th century featured typewritten text, characterized by Serif typefaces, structured grids, and prevalent underlining. In homage to this historical context, the Courier font was employed in poetic sections, captions, and instructional segments to evoke a specific mood and rhythm within the interactive experience. Among the smaller elements, I included underlines and

slashes as visual elements on the webpage, abstracting them from their original task.

Likewise, the outro section of the website was stylized to emulate the appearance of these documents, creating a thematic continuity throughout the platform.

At the later stage, I added a few small animations to the elements to visually hint at the functionality of the game.

4.5. Technical task

I will now elaborate on the concept and features of the web page, what I planned at the beginning of the journey.

Website ope-pager that features a tool in javascript framework that allows to interact with the elements from the archives.

- The first frame starts with a narrative, describes rules, and suggests two options: Estonia, Ukraine.
 - There is an option to choose one of 2 paintings from Ukrainian and Estonian authors at the time of soviet repressions.
- Each main painting is accompanied by a set of different objects from the museum collections, similar in form or color to the main painting
 - Each set consists of 10 objects, accessible with the keypad (to add some randomization and promote a double look)
 - The objects are retrieved from different collections and archives
- Each element in the stack acts as a brush. It can be resized with a slider.
- Each element is assigned to the number on the keypad to add fluency to the change of the brushes without leaving the canvas.
- When the player is satisfied with the result, press “see results”
 - This moves the viewer to the page with metadata and links for each used brush.
- When the player is not satisfied, can press “reset”
- The last frame features a closing narration, call to action, link to survey, and contacts.

Firstly the structure and functionality were implemented just as I wrote it down.

However, there were a few changes in the look of the page and the tool hinted by the results of the survey.

I added the chapter with instructions before the start of the game, as it looked less visually appealing in the body of the tool.

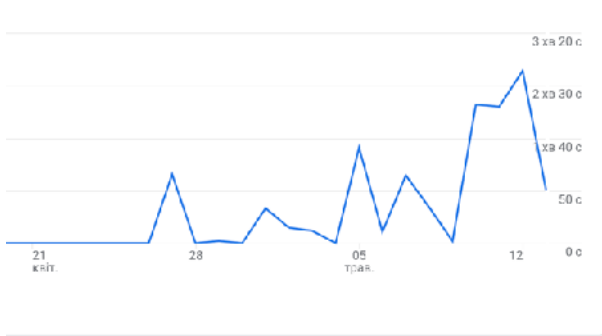
As I aimed to engage the visitor in an activity involving an unfamiliar instrument, I had to make instructions as clear and concise as possible. I made a few iterations of the slide with rules, as the test group mentioned repeatedly that they looked like the buttons.

Also, I had several iterations of the design of the tool. It proved to be unintuitive for people to use the keypad, so I exchanged this function for the “change brush” button.

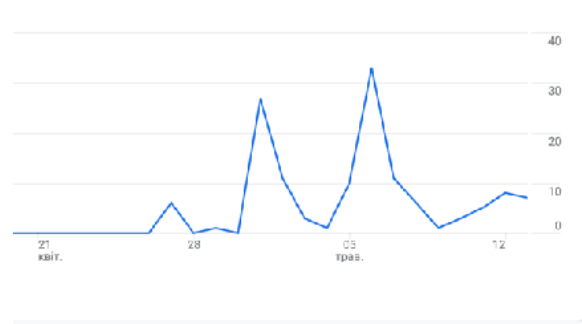
Also at the later stage, I added the gradual decreasing of the opacity of the main image to engage the reader with the change of the background, and to produce more unique results. I noticed that most of the users do not cover the whole picture, but add details to the existing painting. My goal was for the players to create that the player create their own interpretation of the painting, and reflect on the storytelling part they read moments before, using the object brushes as intermediary tools.

4.6. Survey results

In conducting my research, I used a number of approaches to gain insight into user engagement and satisfaction with the interactive tool and website content. Surveys were used to gather feedback from two distinct test groups, providing both qualitative and quantitative data on user experience, design, usability, and satisfaction. In addition, website analytics played a crucial role in understanding user behavior, including metrics such as average time spent on the site and engagement patterns.



average time users spent of the website over the testing phase (16/04/2024 - 14/05/2024)



number of website visitors over the testing phase (16/04/2024 - 14/05/2024)

I also personally recorded and observed the interaction with the tool, providing first-hand qualitative insights into user behavior and engagement. Through a combination of surveys, website analytics, and observational recording, I was able to gain an understanding of user engagement, preferences, and satisfaction, laying the groundwork for informed decisions to optimize the website and interactive tool for a better user experience and to suggest the groundwork for further investigation of the interactive tools and their employment for the promotion of the digital archives.

1. *Test Groups and Participants:* The survey involved two test groups. The first group comprised approximately 10 individuals who provided feedback on user experience, design, and usability. The second group consisted of users who visited the website, completed the game, and those who filled out the survey.

2. *Time spent on the website:* The analytics of the website indicates that the average time people spend on the website varied from 33 seconds at the start to 51 seconds at the end after integration of the iterations. However, it is worth mentioning that these results have some level of distortion because of the users who visited the page but realized they couldn't interact with the tool from the phone. This is reflected in the fact that the overall number of page views was 174 (as of 14/05/2024), but there were 59 visits from the mobile operating systems and 123 first-time visits to the page. The peaks in the average time spent on the website also increased over the testing phase, peaking at 2 minutes 44 seconds during the last days. I also recorded the time of the average engagement session myself, and it took me around 3 minutes to look through the website and draw something with the tool, and the time for meaningful engagement that I recorded peaked at 7+ minutes.

3. *Response Rate:* Out of 123 first-time visitors to the page, 15 people gave personal feedback, and 12 people have filled out the survey, indicating a response rate of 22%.

Demographic Characteristics: The majority of the audience falls into two main categories: students/artists and teachers/researchers. The youngest respondent was 11, and the oldest was 60+.

4. *Tool Usage:* Most participants reported using between 2 to 5 brushes during the game. However, there was less engagement with the links provided (1-3).

5. *User Satisfaction:* All participants of the survey expressed enjoyment with the interactive tool and answered "YES" to the question "*Would you recommend the*

Anamnesis project website to others interested in cultural heritage?”. However, only those who were *already interested in the topic* found the introduction and the results of the game captivating enough to continue exploring the websites of the archives. Here are the results of the survey that concern different parts of the project:

- *Design*: The majority of people from both test groups found the visual part of the website attractive: “The website was a bit confusing but after a second look I found it really interesting, the design beautiful and the interactivity of it really fun.”
- *Storytelling*: 8 out of 12 people did find the information in the introduction engaging and informative.
- *User Interface*: The survey was created after a few rounds of iterations with the first test group, and 9 out of 12 people found the interactive drawing tool easy to navigate and use.

Based on these findings, it appears that the interactive tool was well-received from the point of design, and the improvement of the tool interface increased the engagement with brushes. But at the end, the level of engagement with the archives, which I considered the main metrics for calculating the success of the project, was not satisfactory. Participants of the survey showed mixed responses to the question: “*Did the interactive elements encourage you to explore the digitized objects further by following the links provided?*” Out of 12 responses, 7 people said “YES”, and 5 people said “NO”.

To improve engagement with the archives and encourage further exploration of digitized objects, I implemented the following strategies:

1. *Interactive Learning*: Integrating the storytelling component at the core of the experience enriched user engagement and provided added value for users, especially students and educators.
2. *Intuitive Navigation and Link Placement*: Improving the placement and visibility of links to digitized objects within the interactive tool made it easier for users to discover and access additional content. Clear and intuitive navigation pathways and increased margins within the blocks increased the readability and engagement. Adding the button that changes the brush type in addition to the keypad increased the number of brushes in use noticeably, but did not increase the engagement with the links. The improvement in the

overall friendliness of the tool is also illustrated by the fact that the last recorded users drew with 3 times more brushes on average than the visitors who passed the survey earlier.

3. *Continuous Improvement and Iteration*: Regularly soliciting feedback from users and conducting usability testing provided valuable insights for improvement of the interactive tool and website content. By addressing the main pain points, the overall user experience was continuously refined. I am deriving this insight from the observation of the user behavior of the website. After the second iteration, when I refined the tool, and added the random brush button and the rules, the average time that users spent on the website showed a steady increase from roughly 1 minute to 3 minutes 35 seconds (as of 12/05/2024).

Nevertheless, there were a few other opportunities to enhance engagement with the provided links even more, which I did not use.

I could implement two other strategies, based on the gathered insights about the main difficulties in interaction:

1. *Enhanced Mobile Accessibility*: Since mobile users faced challenges interacting with the drawing tool, optimizing the website for mobile devices and ensuring full accessibility across different platforms could broaden the reach of the interactive elements, thereby increasing engagement.
2. *Tailored Content and Features*: Considering the identified target audience segments of students/artists and teachers/researchers, customizing the content and features of the interactive tool to cater to their specific interests and needs could enhance relevance and encourage deeper exploration of digitized objects.

However, the type of interaction I suggested called for the desktop usage because of the technical limitations of this particular tool embedding, so I ended up removing the game from the mobile version at all, leaving only the walkthrough video in its place.

As for the tailored content of the website, from the start, I intended my tool to cater to a niche audience. I believe that as more and more tools of this kind emerge, there will be a steady increase in user engagement with archives and history. My confidence is based on my observations of Ukrainian history-related blogs and articles over the past two years, as well as the remarkable interest in folk culture I've observed in Estonia. As more tools of this kind populate the informational space, user engagement with the archives and history will also

increase steadily, ultimately contributing to a greater appreciation of cultural heritage and history in the digital age.

Overall, even though the user engagement with this particular tool was a mixed success, the core underlying idea behind this project remains relevant. The survey shows, that 8 out of 11 participants never encountered this type of project, and those who did, addressed me to the cases of data journalism (<https://pudding.cool/2023/10/romance-covers/>), or entertainment websites (<http://emoji.ink>), and all of them state that they would recommend the tool to the person, interested in the cultural heritage.

From the survey I also drew some points, that can answer my research question and hopefully inform some decisions for the next variations of this or similar projects.

My question was: “*Can digital interactive tools be used to promote sustainable interest in cultural objects from the archive?*” The insights gathered from the research highlighted several important considerations in addressing this question:

- *Personalization and Targeting:* Tailoring the content of interactive tools to align with users' interests and preferences can enhance engagement and sustain interest over time. By developing tools based on specific topics of interest, like in my case, where I focused on my own passion, users are more likely to feel connected to the content and motivated to explore further, if it is also in their area of interest for them.
- *Contextual Relevance:* Understanding the context in which users interact with digital tools is crucial. From my own experience, I can observe that users are more engaged with the tool when it is placed within the context of a museum or exhibition setting. Integrating such tools into physical spaces can create a conducive environment for sustained interest and exploration.
- *Educational Integration:* Integrating interactive tools into educational curricula or embedding them into lecture content can provide structured opportunities for engagement and learning. This approach not only ensures that users have dedicated time and space for interaction but also underscores the educational value of exploring cultural objects from the archive.
- *Clear Guidelines and Explanations:* Providing clear guidelines and explanations, as evidenced by the increase in user interaction after the introduction of rules, can enhance user understanding and engagement. This suggests that clarity and transparency in how

users can interact with digital tools positively impact their experience and sustain interest.

- *Diverse Digital Landscape:* The proliferation of digital tools and platforms offers opportunities for diverse approaches to promoting interest in cultural objects. The increasing presence of a variety of digital resources can contribute to a gradual increase in user engagement with archives and history over time.

Here are the main insights I derived for myself from the experience of ideating, developing, deploying, and testing the tool.

- *The scope of the topic has to be balanced.* In my case, people enjoyed the drawing process but were not too motivated to follow the links, because their interest in the topic does not stretch so wide.

• *Time matters:* Lack of time also limits the quality viewer's interaction with the tool. Most of the visitors spent of the website less than 3 minutes. The solution to this problem is out of the scope of this project but may be employed for other interactive tools. My projection is that integration of such tools in the curriculum of the relevant courses and/or lectures can significantly increase the speed of adaptation to the new interfaces, and therefore the engagement with various interactive tools.

• *Place matters:* There is not much sense in making the person spend time on what they do not want to do, but if the experience is placed within the context of a museum or exhibition setting, it also increases the time of engagement with the main items of exposition, like I illustrated in the example of the tool for investigation of Konrad Magi paintings. I suggest that integrating such playful tools into physical spaces can create a conducive environment for sustained interest and exploration.

• *There is no such thing as too much explanation.* Every new tool means a new interface to adapt to. The more minimalist and intuitive the tools are, the easier the onboarding process for the new tool. There was a noticeable increase in the quality of the user interaction after I created the chapter with rules and the walkthrough tutorial. Also, as a curious side note, the youngest respondent had no problem engaging with the tool, even though he used automatic translation of the website. At the same time, most participants needed additional clarification of the navigation in the unknown interface.

Conclusion

This project reflects the contemporary objectives of the time and the need for innovative approaches to the study of collective memory. By employing digital tools to resurface objects from the archive, the project contributes to the ongoing discourse on the preservation of collective memory and its relationship to technology and tradition.

By leveraging digital platforms to revive archival materials, it aims to sustain the cultural legacy and facilitate engagement with historical artifacts in contemporary contexts.

The study delves into two primary facets of memory. First is communicative memory, rooted in interpersonal exchange, which was represented practically by the paintings of the artists, who were members of artistic circles of the 1960s, and became an important part of art history of that time. The second side is a cultural memory, ingrained in cultural and everyday objects and traditions. The project elucidates the evolving nature of memory in the digital age, influenced by technological advancements and cultural shifts. Furthermore, it examines the role of cultural custodians in shaping collective memory, as well as the interconnectedness of memory, history, and identity.

The repercussions of post-WWII repression and displacement in regions like Estonia and Ukraine are also considered. The research highlights the potential the digital archives have in reconnecting severed links of the communicative memory.

The practical part emerges from the fusion of scholarly inquiry, empirical observations, and personal reflections on memory and heritage.

I see the future of such hands-on use of interactive digital tools within museum and gallery spaces, serving for enhanced visitor experiences and fostering deeper connections with cultural heritage. Tools like this, with the content recalibrated for the needs of the particular museum and collection, have the potential to enhance exhibition promotion and enrich interactions in the educational process, thus facilitating meaningful engagements with history and memory. The artistic practice at the core of such tools can foster the sense of tangibility of the past in the hyperconnectedness of the world. The goal of any such practice is to evoke emotion outside and inside. For most of the expected audience of the project are the third or fourth generation since the large perturbations of World Wars and genocides, we may not remember much, but can still relate to the remembrance of others. And putting the memory in play gives individual stories more chance for remediation and remembering.

Reference List

- Assmann, J., & Czaplicka, J. (1995). Collective Memory and Cultural Identity. *New German Critique*, 65, 125–133. <https://doi.org/10.2307/488538>
- Chornovil, V. (1967). Disaster from the mind (portraits of twenty "criminals"): a compilation of materials, 335 p., *First Ukrainian edition in France*. http://irbis-nbu.gov.ua/cgi-bin/ua/elib.exe?Z21ID=&I21DBN=UKRLIB&P21DBN=UKRLIB&S21STN=1&S21REF=10&S21FMT=online_book&C21COM=S&S21CNR=20&S21P01=0&S21P02=0&S21P03=FF=&S21STR=ukr0002433
- Erll, A. (2010). Regional Integration and (Trans)Cultural Memory. *Asia Eur J*, 8, 305–315. <https://doi.org/10.1007/s10308-010-0268-5>
- Erll, A., Nünning, A., & Young, S. B. (2008). Cultural Memory Studies: An International and Interdisciplinary Handbook. 441 p. <https://doi.org/10.1515/9783110207262>
- Fowler, B. (2007). The Obituary as Collective Memory (1st ed.). *Routledge*. <https://doi.org/10.4324/9780203015964>
- Guan, K.C. (2008). Oral Histories in the Making of our Memories and Heritage. *Asian Journal of Social Science*, 36(3-4). <https://doi.org/10.1163/156853108X327100>
- Harth, Dietrich. (2008). The Invention of Cultural Memory. <https://doi.org/10.13140/2.1.1296.4807>
- Hoskins, A. (2017). The Restless Past: An Introduction to Digital Memory and Media. In book: *Digital Memory Studies: Media Pasts in Transition (pp.1-24)*, Routledge. <https://doi.org/10.4324/9781315637235-1>.
- Kansteiner, W. (2002). Finding Meaning in Memory: A Methodological Critique of Collective Memory Studies. <https://doi.org/10.1111/0018-2656.00198>
- Keppens, M.; De Roover, J. The Brahmin, the Aryan, and the Powers of the Priestly Class: Puzzles in the Study of Indian Religion. *Religions 2020*, v.11, p.181. <https://doi.org/10.3390/rel11040181>
- Martinez F., (2014). Ülo Sooster's communitas: liminality in the post-Stalin art practice. – Tartu Circle and Ülo Sooster. Ed. Liisa Kaljula. Tallinn: *Kumu Art Museum*. <https://www.academia.edu/>

[9752809/%C3%9Clo_Soosters_Communitas_Liminality_in_the_Post_Stalin_Art_Practice?source=swp_share](https://doi.org/10.1002/pra2.836)

- Modrow, S., & Youngman, T. (2023). Theorizing Cultural Heritage Informatics as the Intersection of Heritage, Memory, and Information. *Proceedings of the Association for Information Science and Technology*, p.60. <https://doi.org/10.1002/pra2.836>
- Rieke Trimçev (2017) Two models of universalizing memory practices, *European Review of History: Revue européenne d'histoire*, 24:4, 631-644. <https://doi.org/10.1080/13507486.2017.1307815>
- Rigney, A. (2012). Transforming Memory and the European Project. *New Literary History*, 43(4), 607–628. <http://www.jstor.org/stable/23358659>
- Siburt, J.E. (2013), The Mnemonic Imagination: Remembering as Creative Practice Emily Keightley and Michael Pickering. *New York: Palgrave Macmillan*. <https://doi-org.ezproxy.utlib.ut.ee/10.1111/jacc.12093>
- Tarashynska L. B.; Lukianenko M.; Kononenko V. Kyiv, (2011). A galaxy of the unconquered: Alla Horska. Opanas Zalyvakha. Viktor Zaretsky. Halyna Sevruk. Liudmyla Semykina: *a biobibliography Ministry of Culture of Ukraine, State Institution "National Parliamentary Library of Ukraine."* 200 p.(*Sixties: profiles against the background of the generation, issue 13.*) https://nlu.org.ua/resourses/nashi_vydannya/b-pleiada.pdf
- Tamm, M. (2008). History as Cultural Memory: Mnemohistory and the Construction of the Estonian Nation. *Journal of Baltic Studies*, 39:4, 499-516. <https://doi.org/10.1080/01629770802468865>
- [Villalobos, P., Sevilla, J., Heim, L., Besiroglu, T., Hobbahn, M., Ho, A. \(2022\). Will we run out of data? An analysis of the limits of scaling datasets in Machine Learning](https://doi.org/10.48550/arXiv.2211.04325) <https://doi.org/10.48550/arXiv.2211.04325>
- Wayne de Fremery & Michael K. Buckland, (2022). "Context, relevance, and labor," *Journal of the Association for Information Science & Technology*, *Association for Information Science & Technology*, vol. 73(9), pages 1268-1278, September. <https://doi.org/10.1002/asi.24631>

Links

(Last accessed on 14/05/2024)

- Bilokin, S.I. (2022). SUCHASNYK, club of Creative Youth [Electronic resource]. http://www.history.org.ua/?termin=suchasnyk_klub_tvorchoji_molodi
- Hagel, T., (1998). Ülo Sooster and the circle of friends, *Sirp*, nr. 1, 9 January, p.10. <https://dea.digar.ee/?a=d&d=sirp19980109.1.10&e=-----et-25--1--txt-txIN|txTI|txAU|txTA----->
- Hakimah, A. (2020). How Griots Tell Legendary Epics through Stories and Songs in West Africa, *Met museum*, .<https://www.metmuseum.org/perspectives/articles/2020/4/sahel-sunjata-stories-songs>
- Hein, Ivar-Kristjan, (2020). How to Digitise Materiality? Artworks as the Objects of Digitisation. *Estonian Art, The Archive Issue*, vol.1, p. 56. http://www.estonianart.ee/wp-content/uploads/2020/05/EstonianArt_1-2020.pdf
- Kenk, O. (2023). Daily: Remains of nearly 250 people re-interred from Viljandi war grave. *ERR News*. <https://news.err.ee/1608789163/daily-remains-of-nearly-250-people-re-interred-from-viljandi-war-grave>
- Kelley, P., Evans, M.D.R., & Kelley, J. (2018). Making Memories: Why Time Matters. *Frontiers in Human Neuroscience*. <https://www.frontiersin.org/articles/10.3389/fnhum.2018.00400/full>
- Kivimaa, K. (2019). A Long-Awaited Memorial, *Estonian Art, The Paint Issue*, vol.5, p.58. https://estinst.ee/wp-content/uploads/2019/05/EA_2019-1_preview_2019-04-18.pdf
- Kogu Me Ludu [Web Portal]. <https://www.kogumelugu.ee/en/node/1606>
- Kostiuk, O. (2022). Intellectual Movement as a Social Phenomenon, *Opir*. <https://opir.weareukraine.info/intellectual-movement-as-a-social-phenomenon/>
- Kruus, Ü., & Lillemets, E. (2021). Valve Janov: From the Beginnings to the Avant-Garde 1942–1965. *Art Museum of Estonia*, [Booklet PDF]. <https://kunstimuseum.ekm.ee/en/syndmus/valve-janov-from-the-beginnings-to-the-avant-garde-1942-1965/>
- Marusyk, M. (2024). Personal archives of Ivan and Leonyda Svitlychni and others. *The Sixtiers Museum*. <https://museum60.com/особисті-архіви> (ukr.)
- Ovsienko V., (2005). Interview of Opanas Zalyvakha for the *Kharkiv Human Rights Group*. <http://museum.khpg.org/1121197713> (ukr.)

- Sharanksy, N. (2021). Plans for World's Largest Holocaust Memorial at Babyn Yar Revealed. *Jewish News*. <https://www.jewishnews.co.uk/plans-for-worlds-largest-holocaust-memorial-at-babyn-yar-revealed/>
- Sheremet, A. (2022). "These tanks kill people in Ukraine." All Soviet monuments will be removed in Estonia. *Babel*, <https://babel.ua/en/news/82493-these-tanks-kill-people-in-ukraine-all-soviet-monuments-will-be-removed-in-estonia>
- Situ Research [Initiative group]. <https://situ.nyc/research/projects/euromaidan-event-reconstruction>
- Talvistu T. (2015). The Formation Of The Tartu Circle Narrative. *Kunst.ee* <https://ajakirikunst.ee/?c=magazine&l=en&t=the-formation-of-the-tartu-circle-narrative&id=1339>
- National Center “Ukrainian House”, (2024). Sixtiers. Alla Horska | Public interview by Oksana Zabuzhko in the Ukrainian House. [Video]. <https://www.youtube.com/watch?v=LFDIQ1Udw5s>

Appendices

Appendix 1. link to the website of the project: Tumyk Oleksandra (2024). <https://amnesis.cargo.site/>

link to the survey: <https://tally.so/r/3jBMAx>

link to the tutorial: <https://www.youtube.com/channel/UCFQhqC2wDmKO7MsDyMgFSpA>

Appendix 2. Results of the survey.

What is your age range?

12 responses

Under 18 years old	8%	1 response
18-24 years old	50%	6 responses
25-34 years old	33%	4 responses
35-44 years old	0%	No responses yet
45-54 years old	8%	1 response
55-64 years old	0%	No responses yet
65 years old or older	1%	No responses yet

Which of the following best describes your occupation?

12 responses

Student	58%	7 responses
Educator/Teacher	17%	2 responses
Researcher/Academic	17%	2 responses
Professional in a cultural heritage institution (e.g., museum, library, archive)	0%	No responses yet
Artist/Creative professional	42%	5 responses
Heritage enthusiast	0%	No responses yet

How often do you engage with digital content related to cultural heritage

12 responses

Frequently (several times a month)	17%	2 responses
Occasionally (several times a year)	50%	6 responses
Rarely (once a year or less)	33%	4 responses
Never	0%	No responses yet

How many brushes on average did you use for your creations?

12 responses



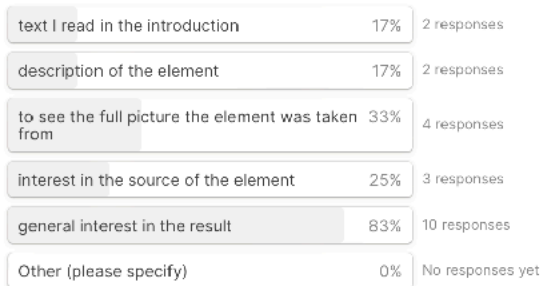
How many links you followed?

12 responses



What was the main reason for clicking the link from "see results" panel?

12 responses



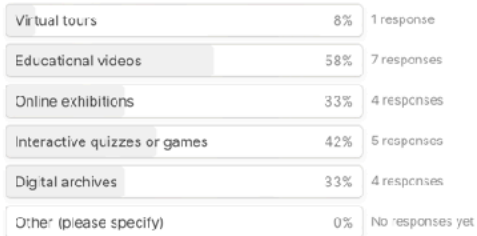
if other, describe please

1 response

click all buttons

What types of cultural heritage content do you typically engage with online? (Select all that apply)

12 responses



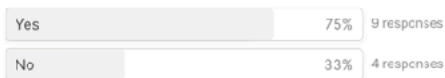
if you have any particular areas of interest, I am all ears!

1 response

digital arts

Did you find the information in the introduction engaging and informative?

12 responses



Did you find the interactive drawing tool easy to navigate and use?

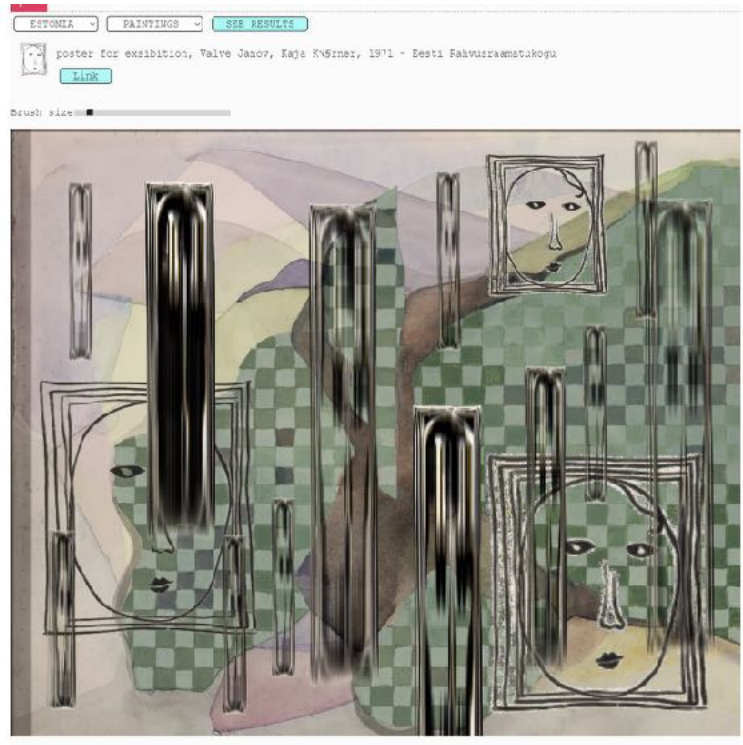
12 responses



Did the interactive elements encourage you to explore the digitized objects further by following the links provided?

12 responses









Last three submissions feature significantly more brushes and more comprehensive use of the tool

Summary

This thesis, *Anamnesis: exploring digital archives through interactive experiences* in the theoretical framework of memory studies, navigates the concepts of communicative and cultural memory, and how they shape our understanding of the past. It discusses the role of digital archives and interactive experiences in promoting and preserving cultural heritage. It highlights the importance of engaging with artifacts and practices from the past to deepen our understanding of history, culture, and identity, and suggests one of the ways of engagement in the practical part of the thesis. It also examines the impact of post-World War II repression and censorship on the cultural memory of Estonia and Ukraine, and how this has influenced the current state of their collective memories. The creative tool is proposed to create and utilize objects from digital archives to actualize aspects of cultural memory and foster continuity between past and present generations. The project involves digitizing and remediating archival materials, including paintings, letters, and everyday objects, to create an interactive digital tool. The tool allows users to engage with these historical elements by using them as "brushes" to create their own interpretations of the artists' works. The project is informed by concepts of collective memory, cultural identity, and the role of technology in preserving and disseminating historical narratives. The challenges and insights gained from developing and testing the interactive tool are also discussed, including the importance of contextual relevance, and design suggestions that may help to sustain user engagement with cultural heritage. The content of the practical part of the thesis reflects the current topics of interest and subjective thoughts of the author and acts as a prototype and documents the process of development of the creative tools for use in the digital space, in the classroom, and the space of the museum. The creative-practical material of this thesis can be utilized by individuals and institutions to create their own tools for interactive engagement with the visitor/viewer for educational and entertainment purposes.

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