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PAGĀTNES NĀKOTNE: SAREŽĢĪTĀ KULTŪRVĒSTURISKĀ MANTOJUMA INSTITŪCIJU DIGITALIZĀCIJA UN VIRTUĀLĀS PIEMIŅAS PRAKSES

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THE FUTURE OF THE PAST: THE DIGITALIZATION OF THE DIFFICULT HERITAGE INSTITUTIONS AND VIRTUAL COMMEMORATION

MASTER'S THESIS

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Anotācija

Arvien aktuālākas kļūst digitalizācijas ierosinātas kultūrvēsturiskā mantojuma saglabāšanas prakses nākamajām paaudzēm. Digitalizācija spēj uzturēt atcerēšanās nepārtrauktību un jaunākās paaudzes iesaistīšanu. Šī pētījuma mērķis ir novērtēt sarežģītā mantojuma digitālo risinājumu ietekmi uz jauniešu auditorijas izpratni par piemiņas praksēm. Pētījuma rezultāti, kas balstās uz sarežģītā mantojuma digitālā risinājuma priekšgājēju Latvijā - Lipkes bunkura VR pieredzes, kā arī starptautisku piemēru analīzes, norāda uz šādu digitālo risinājumu potenciālu. Izmantojot vairākas lietotājpieredzes metodes, tiek apkopoti ieteikumi gan Lipkes bunkura VR tālākai izstrādei, gan imersīvo tehnoloģiju ieviešanai publisko atmiņu institūcijās. Par svarīgiem aspektiem kļūst VR komplimentārā vērtība materiālajai ekspozīcijai, kā arī vēsturiskais konteksts, lietotāju pieredze un morāles apsvērumi.

Atslēgvārdi: sarežģītais kultūrvēsturiskais mantojums, piemiņas prakses, lietotājpieredze, digitalizācija, virtuālā realitāte, empātiskā kartēšana

Annotation

Digitization-inspired practices for preserving cultural heritage for future generations are becoming increasingly relevant. Digitization has the potential to maintain continuity of memory and the involvement of younger generations. This study aims to assess the impact of digital solutions for difficult heritage on young audiences' understanding of commemoration practices. The results of the study, based on the analysis of the experiences of the predecessor of digital solutions for complex heritage in Latvia - Lipke Bunker VR, as well as international examples, point to the potential of such digital solutions. Using several user experience methods, recommendations are summarised for both the further development of Lipke Bunker VR and the implementation of immersive technologies in public memory institutions. The complimentary value of VR for material exhibition, as well as the historical context, user experience, and moral considerations, become important aspects.

Keywords: difficult heritage, digitalization, remembrance practices, user experience, digitalization, virtual reality, empathy mapping

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List of abbreviations

3D – Three-dimensional

AR – Augmented reality

ASA – Association of Social Anthropologists

AV – Augmented virtuality

CGGT – Glaserian grounded theory

CGT – Constructivist grounded theory

EPM – Extent of Presence Metaphor

ER – Extended reality

EVE – External Virtual environment

EWK – Extent of World Knowledge

FORTHEM - Fostering Outreach within European Regions, Transnational Higher Education and Mobility

GT – Grounded theory

HMD – Head-mounted display

HR – Hybrid reality

ISIS – Islamic State of Iraq and Syria

JHC – Jewish Holocaust Centre

KGB – Committee for State Security in the Soviet Union

MxR – Mixed reality

PR – Public relations

QR – Quick response

RF – Reproduction Fidelity

SGT – Straussian grounded theory

UX – User experience

VR – Virtual reality

Introduction

The topic of heritage has been scrutinized, interpreted, and debated for a considerable time. For heritage encompasses multitudinal themes, varying from history, identity, memory, legacy, and preservation, its visibility in the academic and public sphere is almost imperishable. An extensive understanding and continuous discussions on heritage suggest that the past matters, insofar as it is the backbone and cultural capital of our contemporary society. Yet, the ambiguity prevails – whose heritage is recognized, how it is maintained, and to whom heritage belongs? Such questions have been continuously reshaped by various historically significant events. The colossal wars of the 20th century and the present-day nefariousness put the heritage under scrutinity. Those heritage sites and artifacts that lack direct positive connotations and are associated with mass terror, human suffering, conflicts, and genocide, belong to the branch of *difficult heritage* (see Macdonald, 2009; Bareither, 2021). Amidst the overarching myriad of heritage themes, the difficult heritage deals with an additional set of layers – how to comprehend the incomprehensible and how to commemorate the horrific lived experiences? Hence, the difficult heritage becomes a politically and socioculturally charged concept, in which a significant focus is put on the forms of representation and ethics of remembrance.

In the age of immersive technologies and digitalization, the difficult heritage has attained yet another profound layer for inquiry. Although digitalization – a process of transforming information into computerized configurations – is not a novel phenomenon in cultural heritage studies, the recent decade has amplified the ways how digitalization is put into action. The shift from analog to digital in itself has experienced a transformation from simple storage databases, 3D renderings, and low-fidelity offerings to massive industry, led by iterative innovation, trained professionals, and immersive technologies. It was in 2009 when UNESCO endorsed the "Charter on the Preservation of the Digital Heritage", whereby it is stated that "the digital heritage consists of unique resources of human knowledge and expression" and that digitalized tangible and intangible heritage "of all regions, countries, and communities should be preserved and made accessible, so as to assure over time representation of all peoples, nations, cultures, and languages" (UNESCO, 2009: 1-3). Since the introduction of the charter, many advanced forms on how to ensure the continuity of heritage representation have been introduced. Such forms include MxR (mixed reality) technologies, for example, AR (augmented reality) and VR (virtual reality). Whilst the technological advancement has already been utilized by the public memory institutions of

Latvia, offered online tools, such as the digitized collection of photographs "Zudusī Latvija" (Zudusī Latvija, n.d.), and projects dedicated to the digitization of cultural heritage, such as National Library of Latvia project on digitization of cultural heritage content (Latvijas Nacionālā bibliotēka, n.d.), do not include immersive technologies.

Digitalization not only makes the heritage more accessible to larger communities, making it possible to learn about diverse cultures but also offers judicious ways of preserving intricate data and securing new commemoration forms. Digital heritage has become a substantial topic for open discussions and conferences, for instance, it was in 2019 when the first "Digital cultural heritage day" was held in Latvia (Latvijas Nacionālā bibliotēka, 2019). The restrictions put due to the Covid-19 pandemic only amplified this shift to digital, particularly in the context of tourism. The virtual visitor experience may be rendered inauthentic, yet the possibility to overcome geographical distances and health hazards is exceedingly compelling. The expeditious reliance on digital tools has also played a major role in preserving the heritage amidst conflict. Such an ongoing case is a project titled "Backup Ukraine", where volunteers digitally scan all kinds of cultural heritage (see Tangerman, n.d.). The digital lens has further allowed participation in various participatory digital mediums, such as social media and videogames, yet such an approach to the representation of the difficult heritage has been rendered morally challenging (see Frosh, 2018).

Moreover, the age of digitalization has brought up a concept of *virtual heritage*. This discipline is considered to be a branch of cultural heritage, where the emphasis is put on the usage of VR. Yet, VR is a product of digitalization. Arguably, since the digital heritage could be seen as an umbrella term for digitally preserving and distributing past legacies, it also comprises the virtual heritage (Bekele & Champion, 2019: 681-682). The terminological perplexity yet again shows how multifaceted the discussions on heritage can be.

As the primary example of the digitalized heritage, analyzed in the research, is the Lipke VR bunker – based on the only surviving shred of evidence in the form of a child's drawing, the VR offers a glimpse into the hiding place that sheltered Jews during the Second World War. The Žanis Lipke Memorial, based in Riga, re-actualizes the selfless actions of the Lipke family when rescue could have been punished by death (Riga International Film Festival, n.d.). Although the lived experiences of the Lipke family and the survivors are indubitably dark and difficult, the story also preserves hope. This VR is aimed to offer an interactive and immersive experience, as Žanis Lipke's son – Zigfrīds Lipke – takes the user on the time-traveling endeavor. Such a digital

solution, as to how to depict the difficult past through high-fidelity rendered virtual reality, has the potential to be the public memory institution's keystone in education and communication with the youth. Particularly for the society is increasingly moving away from the lived experiences of the 20th-century events, the era of no eyewitnesses can encounter denial, condemnation, and refusal to remember the past. It can also lead to collective memory amnesia, hence the question of how to convey and depict such a past to the youth is an acute one. As memory is continuously interpreted and reconstructed (Hoskins, 2003: 16), there must be a way how to persist in remembrance practices, if the Holocaust memory is to be prevailed.

Therefore, the main aim of this research is to analyze the impact of digital solutions for difficult heritage on the youth audience's understanding of commemoration practices. This entails not only the analysis of the digital mediums, particularly, the Lipke VR bunker but also an in-depth understanding of the youth's experience in and out of the VR. For commemoration practices to pledge the continuity of the past lived experiences and lasting traces of memory, it is of particular importance to take the younger generation's viewpoints and attitudes about the past atrocities into account. In order to explore the various themes that indubitably arise when considering heritage, several research questions were proposed:

- How it can be that digital solutions emancipate difficult heritage institutions?
- To what extent digital media is more participatory than earlier forms of difficult heritage memory practice?
- How might digitality encourage visitors to become political and ethical agents rather than just play with technology?

The topicality of this research stems from the combination of heritage studies, UX (user experience), and digital anthropology. To date, only a few studies have investigated the digitalization of the difficult heritage from the VR perspective (see Alexander, 2021; Fassi, et al., 2016). Even less so have inspected the user-experience in accordance to its development. In the context of the Baltic states, there yet has been a comprehensive study done on the digitalization of the difficult heritage, for the Lipke VR bunker is considered the predecessor of such digital solutions among the current public memory institutions. In order to ensure comparability, the study includes several other digital initiatives from both the Baltic Sea region and worldwide. Although digital solutions offer the users to think and contemplate something far beyond their lived

experiences, authenticity, morality, and participatory action comes under scrutinity. To gain fresh insights and suggest recommendations, the grounded theory and UX (user experience) driven methodology are used to decode the data. In order to achieve bigger comprehensibility into the phenomena of digitalization, difficult heritage, its representative bodies, and virtual commemoration, a few research tasks are determined:

- To identify remarkable examples of the digitalization of difficult heritage;
- To explore the potentiality of VR for commemoration purposes;
- To gain insights from the youth on the usability of Lipke VR bunker and its interrelation with the difficult heritage;
- To recognize potential obstructions to the digitalization of the difficult heritage;
- To generate recommendations for the difficult heritage institutions on the usage of immersive digital tools.

Thus, the theoretical chapters are divided into consequent subchapters, relevant to the topic of analysis. The author inquires about the very concept of difficult heritage, insofar as it entails the question of ownership, memory, commemoration, and heritage representation. The various seemingly interchangeable derivatives of the difficult heritage are considered, for there is a lack of consensus in terminology. The question of memory is evaluated, particularly collective memory, politics of remembering and forgetting, lived memory, and ethics of remembering. The so-called public memory institutions - an umbrella term for museums and memorials - are put into the perspective of the difficult heritage and dark tourism. A considerable focus is put on the concept of virtual cultural heritage, digital memory, interactivity, virtual mediums, such as VR, and user experience.

The methodological chapters include an overview of the grounded theory, particularly the CGT – the constructivist grounded theory -, and user-orientated methods, such as empathy mapping. For the Lipke VR bunker is the main case for digitalization of difficult heritage, the use of play, focus-group, and scale methods are used to gain in-depth opinions about the VR from the research participants. In order to maintain explanatory structure, several internationally recognized experts are interviewed, including scholars and digital solution developers. A particular focus is put on the ethical implications of the research, especially on the researcher's positionality,

participant recruitment, and consent. The data analysis is done according to the guidelines of the grounded theory.

The chapters on discussion concern the overall propositions and outlook of digital solutions for difficult heritage. Accordingly, the Lipke VR bunker is described from various perspectives as time, space, historical narrative, materiality, spatiality, and so forth. Throughout the analysis, various intercontinental examples of virtual heritage are described to offer a provisional examination and propositions, including opinions from the interviewed experts. A specific focal point is directed at the seemingly novel phenomena of virtual commemoration, gamification aspect, and embodied experience. As a constant parallel is the issue of the public memory institutions, as the demand for digital solutions is rapidly increasing.

To sum up, the forerunner of using immersive technologies to depict the difficult heritage in Latvia – the Lipke VR bunker – is demonstrated to be a successful digital initiative. The various digital mediums, including VR, indubitably reform the difficult heritage institutions, considering the changing tourism demands of the visitors. It offers not only a space for individual reflections and meaning-making process on the difficult past but also creates complementary conditions for the material exhibition of the Žanis Lipke memorial. The participatory action for the visitor shall be based on the combination of satisfactory user experience and mediated visiting experience at the premises of the difficult heritage institutions. The ethical and political action from the usage of VR can only stem from historical and digital literacy. Such a conclusion stems from the interviewed youth's perspectives, which are aided by both the expert opinions and internationally discussed examples of virtual heritage. Yet, the decision-making to implement digital initiatives as a part of the exhibition of public memory institutions should not be oversimplified – it is a slippery slope to find a balance between the ethics of memory and past representation, technical parameters, and user experience, and authenticity. The limitations concern the overall sensitivity of the chosen study topic, future dissemination, and the difficult contemporary times in which this study is written.

The thesis and its subsequent sections have been approbated in various local and international conferences, such as the Student Scientific Conference "INITIUM" of the University of Latvia; 80th International Scientific Conference of the UL; Indian Institute of Science Education and Research conference on "Memory in Transition: Intersections, Contestations, Futures"; Edinburgh Napier University conference on "Dark Tourism: Memory, Pilgrimage and the Digital

Realm"; University of Latvia New Technologies and Innovation Day research presentation for "Knowledge Agora". The thesis results will be further approbated in an edited book "The Future of Dark Tourism: Enlightening New Horizons". The expected publication is in the summer of 2023.

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1. Difficult heritage and virtual cultural heritage

1.1.Conceptualizing the difficult heritage

In an attempt to find meaning in the futility of various historical events, the concept of the difficult heritage has tried to encapsulate the contested and unimaginable nature of past atrocities. Dealing with the past demands answers to fundamental questions – how the past is remembered, in what way are the people involved then recalled and commemorated now, how the events are reproduced, and to what degree the modern society can relate to the past? Besides the moral reconfigurations and changes in the culture of remembrance, there have been numerous attempts to epitomize the history that hurts, such as the already mentioned *difficult heritage* (Macdonald, 2009; Bareither, 2021), *negative heritage* (Meskell, 2002; Rico, 2013), *dissonant* and/or *atrocity heritage* (Tunbridge & Ashworth, 1996), *dark heritage* (Foley & Lennon, 1996; Thomas et al., 2019), *contested heritage* (Dann & Seaton, 2001), *undesirable* and/or *unwanted heritage* (Macdonald, 2006; Ciarkowski, 2017), *post-conflict heritage* (De Jong &Rowlands, 2008; Winter, 2011). For the purpose of the thesis, the concept of difficult heritage was chosen, as it more focuses on the issue of legacy, and changes in the public reconciliation and recognition, more than, for example, dissonant heritage does. Furthermore, "all difficult heritage is *dissonant* but not all dissonant heritage is *difficult*" (Carter & Martin, 2019: 117), yet "*dark* heritage is always *contested* and *difficult* but *difficult* and *contested* heritage is not always necessarily *dark*" (Thomas et al., 2019: 3), marking nuances in the politically charged and sometimes overlapping nature of such heritage. Nevertheless, such unequivocal approaches show the expansion in heritage studies, particularly the raising awareness of such heritage that lacks positive connotations in both academic and public memory institutions.

Thus, difficult heritage refers to those historically significant events "that [are] recognized as meaningful in the present but that [are] also contested and awkward for public reconciliation with a positive, self-affirming contemporary identity" (Macdonald, 2009: 1). Sharon Macdonald (2016) even challenges the approach to past atrocities, asking: "Is *difficult heritage* still *difficult*?", stating that there have been fundamental shifts in collective memory and how the nations refer to their unsettling pasts.

However, one could argue that the heritage process in itself is intrinsically bewildering as "it becomes important within certain struggles" (Smith, 2006: 296), meaning - it is always tied to the issues of representation and validation. Whose and what kind of experiences are considered

valid? *Having a heritage*, thus, can be both a paradoxical, yet fundamental part of identity. Hitherto, heritage is tied to the collective *heirs* – be it the local, national or global community. The dissonant nature, here, arises from the fact that heritage "always belongs to someone and logically, therefore, not to someone else" (Macdonald, 2009: 3; see also Tunbridge&Ashworth, 1996). The heritage process has an identity-affirmative nature, as "it affirms the right to exist in the present and continue into the future" (Macdonald, 2009: 2). It is also not a novel reality that we are increasingly reaching a state of our society, where there will be no witnesses of the most atrocious 20th-century events – it illuminates the dire need for continuous maintenance of identity through their heritage commemoration. In this manner, the "Faro Convention on the Value of Cultural Heritage for Society" introduced the concept of *heritage communities*, characterized as a group of "people who value specific aspects of cultural heritage which they wish, within the framework of public action, to sustain and transmit to future generations" (CoE, 2005: Article 2). Višnja Kisić (2016: 69) furthermore states that such communities are not based on the ethnic, national, territorial, or religious background but rather "around interest, engagement, valuation, and self-identification", thus becoming "a community by the fact of valuing the same heritage".

In the same manner, the term *communities of memory* (also *community of recollections*, see Mill, 1861/1962) has been used to describe a group of people "with depts to and inheritances from the past" (Booth, 1999: 249), meaning - there is reciprocity between the community and shared authentic underivative experience. William James Booth (2006: 8) also writes: "Memory, we could say, is the fabric of a community's way of life". Hence, it can be said that communities of memory are able to exist even if no eyewitness is left, as it is constituted through identification and solidarity with memory. Consequently, more emphasis is placed on what Jan Assmann and Florian Ebeling (1997) characterize as *mnemohistory*, focusing on the ways of remembrance than the past *per se* (see also Šola, 2015).

Additionally, both the tangible and intangible heritage enables one to bridge the gap between the present and the past, yet such bridging almost always unfolds emotions and ways of feeling the past. Dissonance and difficulty might aggravate a spectrum of emotions - loss, injustice, nostalgia, longing, suffering, acceptance, denial, negotiation, and so on. Such spectrum goes hand in hand with relating to the past. In other words, difficult heritage is, in fact, troubling, for the very existence of slavery, holocaust, gulags, and battlefields acknowledge the fact that "apologizing for past wrongs also requires a bringing of those wrongs into view" (Macdonald, 2016: 16).

There is a growing number of articles that depict the affective, sentimental, and emotional elements in the topic of difficult heritage. As such, Dorota Golańska (2015) discusses bodily-phenomenological experiences in difficult heritage sites and their interrelationship with affective transactions; Laurjane Smith and Gary Campbell (2015: 4) developed the notion of *registers of engagement* to describe how individual agency enables to "react and engage differently to the same site/exhibition" and to create "their own meanings and understandings of exhibitions and heritage sites"; in a similar manner, Laurjane Smith, Gary Campbell and Margaret Wetherell (2018) illustrates the affective qualities of heritage sites, marking the need for ethical consumption to dissociate heritage legacy from *Disneyfication* approach; finally, Alexander R. Galloway (2016) encapsulates the emotional notion of the material culture, ontologically stating that history *per se* is what hurts – this inseparability of past experiences, events, and representations is an interesting angle to analyze heritage sites as non-isolated reminders of the past.

Nonetheless, it has been argued that history and the past should not be looked at as analogs. There have been various changes in the conception of history. Via this line of thinking, the 18th-century history was yet a history of élites; the 20th century saw the acts of rewriting history under the leadership of various totalitarian regimes. Such transformations in the conception of history also impact how heritage has been viewed, interpreted, and maintained but most and foremost – by whom, why, and for which purposes? It is thought that "regardless of the intentions of an author, there is likely to be an inherent bias in the way that they organize and structures the depiction they create" (Sweeting, 2019: 78) for "[History] is a continuous process of interaction between the historian and his facts, an unending dialogue between the present and the past" (Carr, 1961: 30). The changes in the notion of historical truth also impact its relation with heritage: "History seeks to convince by truth and succumbs to falsehood. Heritage exaggerates and omits, candidly inverts and frankly forgets, and thrives on ignorance and terror" (Lowenthal, 1998: 121). Such historiographical shifts play a significant role in coming to terms with difficult heritage and the past that such heritage depicts. Here comes the question – how does heritage contribute to such shifts in the understanding of history?

1.2.On Collective Memories and Commemoration Practices

Heritage is often dissected by various social actors in various contexts, transforming the memory-scape and remembrance practices. The way how, for example, colonialism is viewed differs notably, depending on whom you ask. Hereby, the concept of dissonant heritage –

according to John. E. Tunbridge and Gregory Ashworth (1996) – explain the process when different actors contribute different meanings to the past atrocities. Therefore, "the order of discourse of particular heritage is […] never fixed" (Kisićk, 2013: 49), even in most hegemonic societies. This is what de Saint-Laurent (2018) describes as *politics of remembering*, deriving from Maurice Halbwachs's (1925/1994) prominent notion of the *collective memory* (also *shared consciousness of a population*, see Chapman, 2016). Collective memory is seen as the *living memory* of a social group – meaning, it is continuously performed, maintained, and imagined.

Academic discourse on the interaction of the past and society with it began to take shape at the end of the 19th century. However, it was the First and Second World Wars that changed the paradigm of how to continue to live and coincide with this difficult legacy. This dramatic moment in history was also a turning point in the development of the theory of collective memory. The aforementioned sociologist Halbwachs viewed memory and remembrance practices as social phenomena, insofar as they are formed differently in different groups of society. According to his theory, a distinction can be made between collective and historical memory, noting that collective memory refers to the experiences of a social group acquired in a certain time-space. Conversely, historical memory marks those events of the past which have to some extent lost their relevance in society and thus become historical artifacts (Halbwachs, 1980: 50-87).

Similar to Chapman's notion of shared consciousness of a population, many equivalent or similar concepts have emerged to describe the phenomenon of memory collectivization and socialization - historical memory, cultural memory, public memory, social memory, recovered memory, communal memory, to name just a few. Speaking of Holocaust remembrance practices, Michael Rothberg (2009) sees it as a *multi-directional memory*, insofar as there should not be a competitive nature of one's and collective memory. Negotiation and a cross-cultural approach can help to navigate through the sorrows and different losses. Thus, in the case of the difficult heritage, the discourses of memory are plural, emphasizing the multifacetedness of the representation of the past. Despite that, such diversity within the memory discourse can also create barriers to social integration and assimilation (Hanovs & Vinnika, 2006).

What is at stake is not only the way how the past is perceived but also how memory itself is forged, becoming an agent of history – hence, politics of remembering differentiates between those individual tools that are used for remembrance and the collective discourses on the past. Collective memory may be, for example, used as a political instrument (de Saint Laurent, 2018:

150). Yet, here, one can see an unresolved paradox: "[…] a group cannot 'remember' – only the person can – but memory depends so much on social processes that if all social layers are removed, nothing remains" (Ibid.: 149). This paradox can lead to what Pierre Nora (1989) describes as the *death of memory*: "[…] what we witness today are the remains of an earlier memory that can be found in isolated "sites of memory" (*lieux de mémoir*)" (Zerubavel, 1994: 73). Memory, thus, for Halbwachs, ends where the social group ends.

Furthermore, similarly to the politics of remembering, one can speak on the *politics of forgetfulness* – what do people forget but most importantly, how do people forget? This raises a significant issue, especially as we are getting closer to the post-witness age, where the living memory unless told and transmitted to future generations, can embark on a risky path. Janet Carsten (1995) uses the term *collective amnesia* to describe the kin-relationships in Pulau Langkawi, an island near Malaysia. During her fieldwork, it was discovered that "very few people could recall genealogies beyond two or three generations" and that "relations were reckoned 'horizontally', in terms of siblingship, rather than 'vertically', in terms of descent" (Ibid.: 319-320). Alexander Piatigorsky (2008), as well, interestingly notes that the reason for the impossibility of political predictions must be sought in the collective amnesia of contemporary European political culture. In one way, such politics of forgetfulness could create a novel and shared identity, as the transformation has a crucial role in memory, yet it can also leave out the connectivity between the past, present, and future. In this manner, collective memory involves a continuous play between forgetting and remembering.

When it comes to the difficult heritage that deals with "both the real (and the imagined) demise (often in a gruesome and horrific manner) of either individuals or a group of people" (Heuermann & Chhabra, 2014: 312), what role does public memory institutions play of a troubling past?

1.3. Re-articulating the past in public memory institutions and dark tourism

The visibility of difficult heritage sites and historical information can be maintained and retained by museums, archives, memorials, libraries, permanent or temporal exhibitions – all that Anna Reading (2003) defines as *public memory institutions.* It can be said that such institutions, through the curated distribution of information, seek a rather epistemological answer to the question: "How does one even begin to represent or simulate the absolutely unimaginable?" (Hoskins, 2003: 9). Thus, arises another question – how there can be a demand for some form of

the frightening, unnerving, and obscure? One answer could be sought through the conceptualization of dark tourism, as it is directly linked to public memory institutions.

In his influential article on the dark tourism spectrum, Philip Stone (2006) marks the various *shades* of darkness within the dark tourism supply. It is a prevalent argument that places and sites related to atrocities, death, and natural or unnatural disasters are becoming more popular in contemporary heritage tourism. Dark tourism can be described as tourism that "alludes to a sense of apparent disturbing practices and morbid products (and experiences) within the tourism domain" (Ibid.: 146). It is seen as a rather poststructural and postmodern phenomenon, insofar as dark tourism simulates and reproduces past experiences, thus also recreating authenticity to the dark site consumers (Lennon & Foley, 1996; Heuermann & Chhabra, 2014).

However, there have been various counterarguments to depict dark tourism as a *post*-project. It seems that the reproduction of past experiences can happen only within the limits of living memory that Rebecca Casbeard and Charles Booth (2012) confine within the last 100 years. Moreover, both authors state that "[…] in principle, this would not preclude a visitor to the Gettysburg battlefield in 1875 from being classified as a dark tourist, was periodization the only question at stake. In this sense, the period in which dark tourism can occur slides through and over time, with sites receding out of living memory and thus out of the darkness in the process" (Ibid.: 4) (see Figure 1).

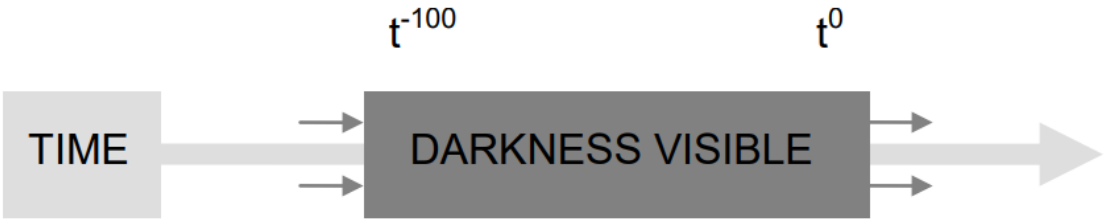

Figure 1. Dark tourism, time, and memory. *Source*: Casbeard & Booth, 2012: 4.

Additionally, such "exceptionalism of the present" (Ibid.: 6), has its limitations. Postmodernism and poststructuralist thought as a distinctive historical epoch exclude the "understanding the motivations and experiences of tourists who visit places of death, or the management of such places" (Light, 2017: 279).

With all that taken into account, Stone's spectrum of the dark tourism sites seeks to examine and combine the diverse considerations and developments into a single continuum. He

argues that there are several characteristics against which all the dark heritage sites – from difficult heritage representative bodies, such as memorials, and museums, which he coins as "sites *associated* with death and suffering", to battlefields, concentration camps, KGB cellars, and mass murder sites, which he puts under the "sites *of* death and suffering" section - may be conceptualized (see Figure 2). Later in his doctoral thesis, Stone (2010) would term both ends of the spectrum as *dark fun factories* and *dark camps of genocide*.

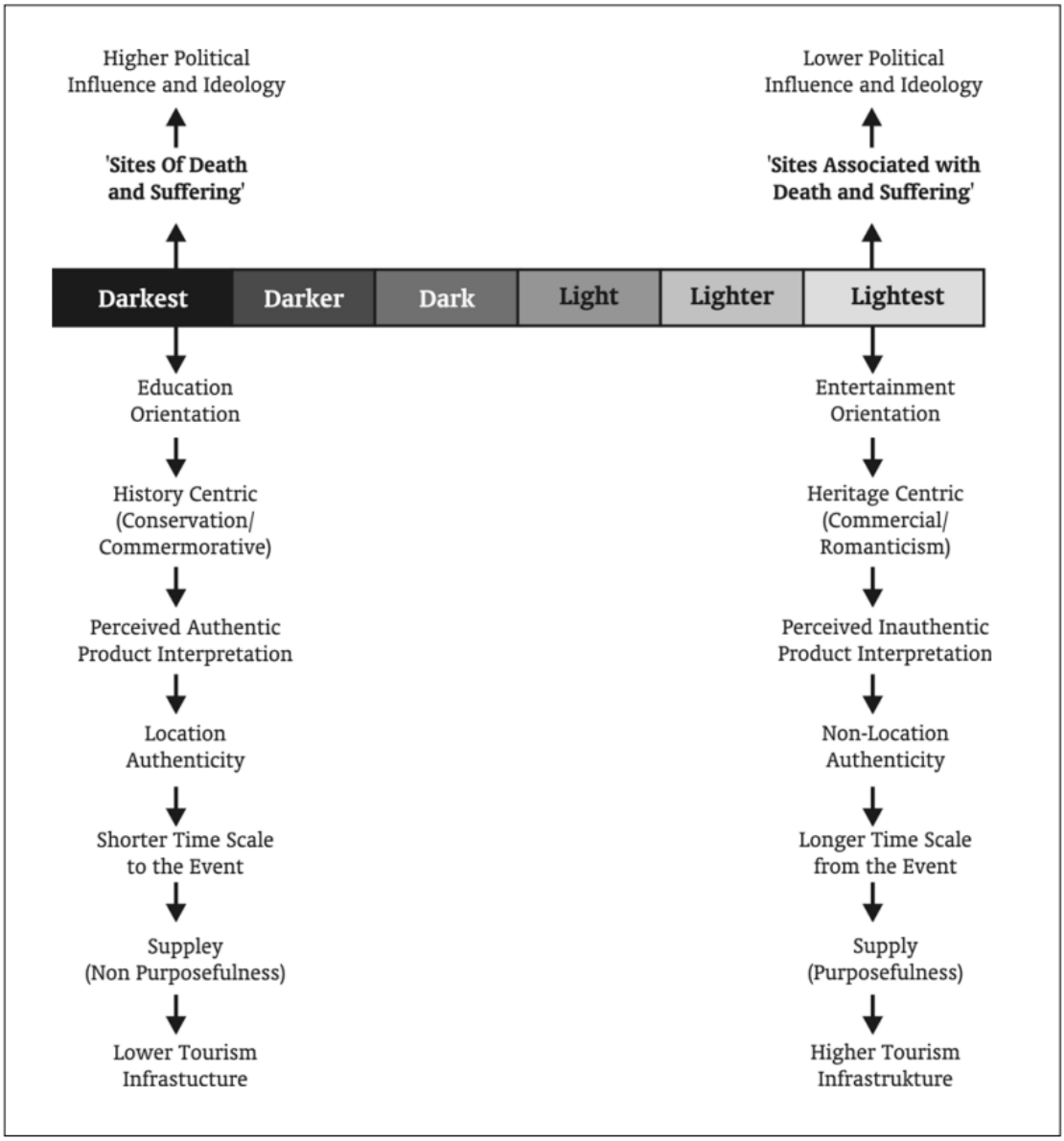

Figure 2. A dark tourism spectrum: perceived product features of dark tourism within a 'darkest-lightest' framework of supply. *Source*: Stone, 2006: 151.

Such typology of the dark tourism sites offers various shades from the darkest to the lightest, where there is a constant play between education-orientated and more entertainment-orientated locations, as well as whether the particular site has an authentic, consumption, political, or infrastructural value. There is a clear distinction between those sites that are *associated,* yet not ontologically *fully* linked to the past atrocities, meaning there is a distance either in time, space, or living memory from those sites that have these intrinsic values: "[…] the main contention is that the US Holocaust Memorial Museum is merely *associated* with death, whilst Auschwitz-Birkenau is *of* death and possesses a crucial locational authenticity within its product design" (Stone, 2006: 152) (emphasis in original). It should be noted that the Auschwitz-Birkenau concentration camp is regarded as a product to signalize that dark tourism is, in fact, dealing with the supply and demand of commodities, similarly to other tourism domains. Public memory institutions, thus, represent not only the sites associated with death but also the way how sites are marketed and consumed.

Dark tourism (also referred to as *thanatourism*, see Seaton, 1996; Stone & Sharpley, 2008; also as *black spots* and *fatal attractions*, see Rojek, 1993; also as *trauma tourism*, see Clark, 2009; also as *morbid tourism*, see Blom, 2000) was first introduced by John Lennon and Malcolm Foley (1996). Such tourism essentially deals with those sites that both commemorate and display death and the macabre. Lennon (2017: 4) furthermore states: "Tourism and death enjoy a curious relationship. Death and acts of mass killing are a major deterrent for the development of certain destinations and yet such acts can become the primary purpose of visitation in others".

The public memory institutions, here, have a fundamental role, especially since there has been a novel critical discourse on heritage representability. As technological advancements and political and socio-cultural shifts impact the remembrance of past atrocities, museums and memorials should act as anchors to balance heritage management. Such institutions are the gatekeepers between collective memory, atrocity consumption, and society (Kisić, 2016: 64; Hoskins, 2003: 7). Yet, Tomislav S. Šola (2015: 31-67) notably argues that "[…] public memory institutions […] are just a memory manufacturing industry with its own scientific apparatus but tuned to serve the communication for the sake of the community that made them possible" and that "[…] they are not there to serve science but to use it for the public benefit". Further tensions arise between the so-called traditional modes of representation, the ethics of dealing with living memory, and the innovative maintenance of the difficult heritage. The discourse gets even more

difficult due to the often simplified nature of the commemoration of victims, the celebration of heroes and rescuers, and the unobservance of the perpetrators (see Sweeting, 2019; Marschall, 2013).

1.3.1. On ethics of remembering

The acknowledgment of the difficult past must comprise ethics as the moral compass of heritage remembrance practices. There is a wide range of articles, focusing on the issues of human rights within the cultural heritage context (Donders, 2020), ethical principles for preserving both tangible and intangible heritage (UNESCO, 2015; Ruggles & Silverman, 2009), legal dimensions in heritage management (Nicholas et al., 2010), cultural heritage protection within the context of war (Matthes, 2018), ethical dilemmas in the digital age (Manžuch, 2017) and in the commodification era (Stublić & Samovojska, 2018) to name just a few. It seems that the discussions of heritage are inseparably intertwined with ethics since it not only tries to seek the answer of *who owns the past* but also how heritage should be displayed, maintained, and presented. A significant focus has been put on the public memory institutions within the scope of postmodern museology – more and more institutions become an ethical-agents in human rights activism, inclusion, and diversity. Such a turn in the museology landscape is believed to develop after the 20th century horrific acts of the Second World War, Holocaust, and Cold War, including the global terrorist attacks in the 21st century (Carter & Orange, 2012: 111-117).

For the ethics in the age of modernity, which originated during the European Enlightenment, "the basic conviction […] has been the belief, inspired by science, that […] progress would occur toward greater knowledge and moral improvement" and that this advancement "will be generated, and protected, by the application of reason" (Levy, 1997: 37). However, such discourse on ethical decision-making as something that could instinctively follow, and imbricate progress is a fragile rationale. The present changes are as rapid as they have never been before, thus there is a need for future-orientated ethics, especially, due to the digital and technoscientific discoveries. As Katie Heuermann and Deepak Chhabra (2014: 216), in relation to dark tourism, puts it: "In considering the consumption of dark tourism sites by visitors through a postmodern lens (given that media and technology now factor heavily into reproducing acts of atrocity for current consumption), it is important to note that ethical considerations are important in the reconstruction and interpretation of tragic or terrifying memories". In order for the living memory to persist even after the passage of the authentic memory carriers, the remembrance

practices should be kept within the ethics of dealing with living memory. Meaning, that the ethics of remembering has to encompass the intergenerational trauma, as the younger generation – increasingly becoming remote to the shared experiences of the past atrocities – are creating their own meaningful connections and remembrance practices. It is what Christoph Bareither (2021), in the context of the Holocaust, conceptualizes as a *performative culture of remembrance*, deriving from Thomas Thiemeyer's (2018) *performative erinnerungskultur*. Such an approach to remembrance can be effective in the attempt to create contemporary solidarity for the sake of historical continuity, as virtual and distant as it may seem from the traditional practices of remembering the past. Yet, such performative aspects – like, as using digital media to remember the survivors – are not fixed, insofar as they contain a dimension of play (see Durkheim, 1995). The ethical approach to remembrance is as ambiguous as the collective imagination of the past.

1.3.2. The Pragmatic approach to commemoration - the case of the memory act

In the search for avoiding such supposed fragmentations within remembrance practices, the pragmatic approach as a paradigm in itself can help to not curtail "discourses on history to single and partial concepts" (de Saint-Laurent, 2018: 152). Stemming from William James (1922) and Charles S. Peirce's (1878) groundbreaking works on pragmatism, the pragmatism philosophy "holds that human actions can never be separated from the past experiences and from the beliefs that have originated from those experiences", at the same time pragmatists believe that "no two people have exactly identical experiences, so their worldviews can also not be identical. However, there are always varying degrees of shared experiences between any two people that lead to different degrees of shared beliefs" (Kaushik & Walsh, 2019: 3). This is a striking appeal for considering the new means of commemoration and remembrance practices, especially as there is a constant play between the politics of remembering and politics of forgetting.

Furthermore, de Saint-Laurent – in regards to the pragmatic approach - invites the notion of *memory act* to reflect on collective memory. The author states that the memory act refers both to the individualized interpretation, and narration of the past and to events that are widely assumed to have occurred or have occurred, like the Holocaust. She continues: "Instead of defining collective memory as the product of a specific process – remembering – leading to different actions, it defines it as a specific action – referring to the past – that is produced by different processes" (de Saint Laurent, 2018: 154). Thus, the pragmatic approach to commemoration helps

to navigate the traditional dualism between objectivity and subjectivity, as there is a continuum in the modes of remembering.

2. Beyond the site: Virtual cultural heritage

"The virtual is fully real in so far as it is virtual."

(Deleuze, 1994: 208).

Having outlined the historical notions of difficult heritage, in recent years there has been a distinctive change in the way how public memory institutions approach heritage. The pervasiveness of digital innovations, such as video games and VR (*Virtual Reality*) on difficult heritage, has only augmented due to the Covid-19 pandemic embarked on physical restrictions, limiting the possibilities of visiting the actual sites. Nevertheless, digital approaches to heritage are not a novel phenomenon – 3D reconstructions of the concentration camps, mobile apps, supplementing the traditional exhibitions, QR (*Quick Response*) codes in museums, YouTube tours of memorials, 360º interactive videos on battlefields, and the 9/11 attacks on the Twin Towers, videogames on escaping a ghetto – all these examples offer interactive techniques to engage with the unimaginable past atrocities on display. And such techniques have been around for the past decades.

In fact, it is believed that one of the first *fathers of videogames*[1] is a Holocaust survivor – Ralph Bear. After realizing that television was an "underused technology", he made the television set to be interactive with its viewers, offering "12 ball-and-paddle, chase, and educational games […]. In addition, an optional shooting gallery game and other optional individually-sold game cards were also available" (Bedi, 2019: 21). This was done already in 1972. Such achievement in the digital world is important to note as it opened the route for other digital inventions. In regards to such invention application to heritage studies, in 1999, one of the first pioneer projects is the so-called on-site digital archaeology, where archaeologists and cultural heritage specialists recorded excavations in 3D format (see Levy et al., 2001). However, already since the arrival of

[1] There have been various discussions in the videogame world on who was the first to develop a digital game, accesible through a digital media tool. As one of the founding fathers is told to be Steve Russell, who in 1962, developed a game called *Space War*. Similarly, Nolan Bushnell invented a game with an akin title – *Computer Space.* However, it was in 1972 when a video game called *Pong* was realized, as Nolan Bushnell founded the first commercial video game company named *Atari* (Glancey, 1996: 6).

the public domain, better known as the WorldWideWeb, in 1989, cultural heritage institutions have been using the web for archiving and communication purposes (Liritzis et al., 2015: 314).

Thus, it can be said that cultural heritage institutions, academics, and other professionals have utilized the many byproducts of the digital revolution, making heritage sites, information, and data more accessible than ever. Due to such development, there has been an emerging field in cultural heritage studies, titled *virtual heritage*. According to Mafkereseb Bekele and Erik Champion (2019a: 681-682), virtual heritage is a field that "applies immersive reality technologies and digital tools to Cultural Heritage […] in order to simulate, preserve, and disseminate tangible and intangible cultural assets in a form of diverse multimedia approaches". Nonetheless, the usage of different technologies and innovations for different heritage purposes, be it management, tourism, or research, has created a division in terminology – variously themed virtual heritage, *digital heritage*, *new heritage*, and *new media heritage* are often used as interchangeable. Applied to the public memory institution, one can get an *electric museum, online museum, Cyberspace museum, hypermedia museum, Web museum, Meta museum*, even going to the extent of calling it *virtual heritage metaverse* (Brown & Waterhouse-Watson, 2014: 2; Schweibenz, 2019: 13; Macdonald & Alsford, 1997).

It seems that there is no consensus on the use of terminology, inasmuch as it depends on the range of disciplines. For the purposes of the thesis, the emphasis is put on the digitalization of heritage, as it includes the very digital medium: "Objects do not speak to tell their own story. Mediation must be added. Digital means seem to bypass this difficulty by being a medium able to communicate meaning through multimedia, thus being a medium of intangible and virtual transmission" (Beer, 2015: 2). The digital medium being the multimedia tools, such as a videogame, VR, QR, AR (*Augmented Reality*), AV (*Augmented Virtuality*), ER (*Extended Reality*), MxR (*Mixed Reality*), and so on. Thus, it is the tools, the binary codes, the programs, and, of course, the human capital that make up the digitalization.

The complex part comes with the term *virtuality* due to the historical dichotomy between the virtual and the real: "As a philosophically anchored notion, virtual means a mental, immaterial dynamizing process which goes from knowledge principles to their actualization" (Ibid: 1). The Deleuzean approach, on the other hand, specifies that "the virtual is opposed not to the real but to the actual. *The virtual is fully real in so far as it is virtual.* Exactly what Proust said of states of resonance must be said of the virtual: "Real without being actual, ideal without being abstract"

(Deleuze, 1994: 208) (emphasis in original). Whereas the digital is "discrete, disconnected, codeable, iterable", the virtuality is "the analog – continues, connected, unique […] It is not potentiality but the existence of a structure that supports becoming" (Janz, 2018: 91-94).

Thus, virtual heritage is an emerging field within the cultural heritage that, by adopting digital technologies, works as a middle ground between the tangible and intangible heritage and digital components. Such combination allows to "record, preserve, or recreate artifacts, sites and actors of historic, artistic, religious, of cultural significance and to deliver the results openly to a global audience in such a way as to provide formative educational experiences through electronic manipulations of time and space" (Stone & Ojika, 2000: 73-74). Such a virtual approach to difficult heritage demonstrates unequivocally that the past atrocities had not been forgotten and that socio-cultural transformation – willingly or unwillingly – will leave the mark on the future memory scape. By moving beyond the site, for instance, via the usage of VR technologies, virtual space can invite anyone to remember the difficult past. However, as noted by George MacDonald and Stephen Alsford (1997: 267): "The transformation won't mean that museums lose what they have to offer as physical sites conveying knowledge through the medium of material objects. It means that the museum will get another dimension, a digital one". These concerns shall be depicted later.

2.1.Digital memory in the post-witness age

The concept of memory is undeniably complex and interdisciplinary. Another layer is added to the intricacy by digital progress and the ways how people both produce and consume the products, made by such progress. The memory studies have been inflexible to incorporate digitalization, "not as some partial or occasional or temporary shaper of memory, but as fundamentally altering what it is and what is possible to remember and to forget" (Hoskins, 2018: 7). Hence, a novel ontology has been crucial for contemporary memory studies.

Both the living memory and the institutionalized memory sites - *lieux de mémoir* (Nora, 1989) – "are increasingly being equipped with online extensions and new types of *lieux de mémoir*, existing exclusively in cyberspace are slowly emerging" (Marschall, 2013: 194). We are also witnessing changes in the commemoration practices – the individually or jointly organized forms of recalling and preserving the past –, as the World has become more and more reliant on digital media and the Internet. Halbwach's school of thought would say that collective memory is fading and detaching from historical memory within modern society. Yet, Wulf Kansteiner (2017: 310) in his influential study on transnational Holocaust memory and digital culture gestates that it is

because of these technological advancements that, for example, the Holocaust memory can be redeemed: "[…] if Holocaust memory can be resurrected as an emotionally and politically relevant fixture of future memory culture it would have to be in the guise of immersive, simulative and possibly also counterfactual digital memory". The dynamics between *factual* and *counterfactual* memory stem from the very fact that the digital media replicates the historical truths, whether in the form of videogame, VR, or a movie. This also could be termed as *counter-narratives* and *subversions of memory* (Zerubavel, 1994: 89). Moreover, "some of the key players of the Holocaust memory establishment cannot imagine how they could successfully transfer their didactic and political mission into simulative and interactive ludic digital environments" (Kansteiner, 2017: 313).

Nevertheless, it would be argued that digital technologies, media, and their productions have the potential to mediate the relations to the past. Social media, for instance, offers the users to share their personal experiences with the tragic past, thus enabling them to have a bigger agency in the story that needs to be told. This makes up the *contemporary digital culture of remembrance* (Bareither, 2021: 69-70). Digital technologies can sculpt a novel conceptual infrastructure for not only sharing individual stories – the memory acts - but also providing "[…] a kind of window on the outside world with which we would otherwise find it difficult to become acquainted" (Blom, 2000: 35). To have the opportunity to meet a 9/11 survivor in interactive 360^0 VR video, to see reconstructed virtual remnants of Pompeii before the eruption of Vesuvius, to face the odds of survival from the Treblinka concentration camp, to experience how it was to hide from the Nazis for 761 days in the Secret Annex (see Anne Frank House, n.d.) – all these new ways of unfolding the difficult past are central if the memory is to be retained.

The post-witness age is coming. It already is here. The digital revolution has embarked on an ontological shift in the definition of memory and what memory entails. Amanda Lagerkvist (2017: 51) conceptualizes this shift from a Heideggerian perspective, stating that "[…] as we are thrown into a particular place and group of people, at a particular historical moment, we are also becoming in and with the technological world in utter uncertainty and displacement, with the task to make meaning […]" – she further calls it a *digital thrownness*, stemming from the predisposed possibility of *Dasein*. The author also discloses the notion of the *digital afterlife*, which consists of three phenomenons: firstly, the *digital traces* or our digital footprints that will stay on the Internet far beyond our physical death; secondly, the *posthumous memory work online* or the

content put by the digital media user that prolongs the life after its death, serving as reassurance and consolation for the relatives of the deceased; thirdly, *after-death communication* where the relatives or friends continues the communication with the deceased online while understanding that the conversation will not be reciprocal (Ibid.: 64-65).

Thus, digital media conserves, maintains, and supports the memory of those who have departed by preserving the digital footprint for the next generations. Such digital memory transgresses any human lifetime, making it a transhumanist phenomenon. Nevertheless, the play between politics of remembering and politics of forgetting still persists, no matter the changes in spatial dimensions. Disconnection, thus, is the new threat in commemoration practices.

Another limitation for digital memory is authenticity. Whereas the authenticity in the living memory is preserved in the fact that our living existence is also *being-towards-death* (Heidegger 1927/1979: 317-318), the digital memory does not withstand such conditions. It simply continues *being-towards-death*, wherever in the form of data deleting or profile erasure. One cannot delete anything from the Internet – the technical death is limited. Furthermore, there is a sense of selective authenticity, especially in the ludic, gaming environments. Even if "the approach that favors authenticity has become a crucial way to accommodate the player in an interactive depiction of the past" (Sweeting, 2019: 77), there still is a possibility to commemorate the past in a fragmented, inaccurate manner.

This concern leads us to an ethical breach in a digital memory that Lagerkvist so conspicuously summarizes: "[…] the transhuman imaginary fosters the impulse of projecting our agencies and presence(s) into a future, where we may be resurrected, either as a virtual or robotic conscious existence. These endeavors to craft immortality […], bypass any ethical commandments on humans, by offering a ticket to a digital gateway to the beyond" (Lagerkvist, 2017: 67). When discussing the ethics for digital memory, the content of the digitalized memory-form, the channel in which the memory is maintained, the tools by which the digital memory is preserved, and the audience who can access the digital memory scape should be taken into account. In addition, it is equally important to maintain an agency for the departed that is as close as possible to the authentic will of the departed.

Digitalization has offered new means by which the memory of the deceased shall pertain. The accessibility and democratization of the WorldWideWeb resulted in a new form of memory –

the digital memory – which is maintained by various contemporary digital cultures of remembrance. Nevertheless, digital memory still has its limitations and challenges.

2.2.Memory and interactivity

If the public memory institutions apply any kind of digital media, the role of interactivity cannot be ignored. Since one of the main targets of contemporary exhibitions is to "incorporate computerized devices for visitors to 'interact' with" (Brown & Waterhouse-Watson, 2014: 10), interactivity has become an integral addition to the contemporary memory-institution scape. It is a matter of turning the visitors into agents, whose visit to the difficult heritage site or its associated public institution results in a user- and story-centered attitude. Meaning, that there must be a social interaction with the exhibition, turning the visit into a memory act.

It seems that interactivity is almost always incorporated within the digital media definition. Survivor testimonies, 3D visuals, VR, 360^0 videos – all of them have been described as interactive, considering that such virtual landscapes can be experienced bodily. The mediated interaction with Holocaust could bring a new value to future commemoration practices. Here, the importance is how much such mediated experiences turn the visitors into responsible, ethical agents. In regards to the difficult past, Paul Frosh (2018) conceptualizes the need for turning the *viewers into co-witnesses* that could activate the chain-reaction in the public. Such action, moreover, could enable "the interpersonal promulgation of knowledge of suffering accompanied by the imperative to halt it, or prevent its recurrence, through the very act of getting others to watch" (Frosh, 2018: 364). Likewise, Andrew Hoskins (2018) states "[…] the principal memorial player today is no longer the highly tangible, visible, notion of the external media of memory, nor the inner-workings of the mind, but instead the mesh of hyperconnectivity in which they are all irretrievably entangled" (Hoskins, 2018: 11). We are the witnesses to the interactive historical narratives, put into action. The way how the collective memory, especially to the youth audience, will be produced is through interactive, immersive, and often counterfactual storylines (Kansteiner, 2017: 331) (Zerubavel, 1994: 89). Here, the interactivity appears not only through the means of using an interactive digital device or media but also through the means of sharing the experience online or offline. This is explained by the notion of *ethics of kinaesthetics*, which is augmented by "the burden of moral response to distant suffering" that is now "shared by our smallest habitual and volitional gestures" (Frosh, 2018: 364). Various digital tools and initiatives have been developed, which could be

amalgamated into the term *digital media*; yet there has been a need to categorize the various applications, especially in the field of heritage.

2.3.Virtual heritage applications: The reality-virtuality continuum

In response to the rapid advancements in the digital age, several researchers have addressed the issue of the classification of physical reality and virtuality. Coming to terms with the interconnectivity and paired aspects of today's networked World could bring us closer to understanding the tide of history. The first classification was introduced in 1994 by Paul Milgram and Fumio Kishino, which they entitled "A Taxonomy of Mixed Reality Visual Displays". Not only do the authors outline the spectrum of physical reality and virtuality (see Figure 3) but also they made the public acquainted with the term MxR (*Mixed Reality*). Now, the seminal work has been subsequently revised, yet the legacy, also in popular culture, remains.

The introduced continuum "connects completely real environments to completely virtual ones" (Milgram & Kishino, 1994: 1321). Hence, there is a palpable differentiation between the *real environment* (also physical reality) and the *virtual environment* (also virtual reality). If physical reality refers to only real, tangible, material objects, then virtual reality refers to virtual, intangible, immaterial objects. Yet, the middle part of the spectrum is also branched in accordance with its commonality to either of both ends.

As such, there is the AR (augmented reality) that is seemingly closer to the real environment, nevertheless, the digitally created content for AR not only complements but also enhances the real-world experience (Champion, 2018: 5). AR technology has been acknowledged as a viable option for a user to be aware of both virtual and real-world surroundings, for instance, by erasing or adding some parts to the view. One good example is the Instagram and Snapchat filters that, through the use of smartphones, enhance or change facial structures.

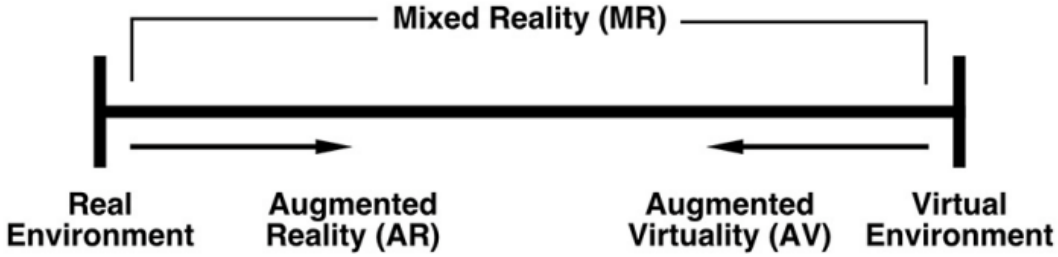

Figure 3. Reality-Virtuality continuum. *Source*: Skarbez et al., 2021: 2 (adapted from Milgram & Kishino, 1994: 1321).

Similar to AR, the AV (augmented virtuality), as well, "augment virtual environments with live scenes of events and elements from the real-world" (Bekele & Champion, 2019b: 2). It uses the virtual world as the base environment, rather than the physical environment, as is the case for AR. Such technology is also more costly, furthermore, "AV applications are very rare due to the technical challenge of tracking the pose of elements from the real-world and the difficulty of on the fly 3D reconstruction and streaming of scenes from the real-word into the virtual one" (Ibid.: 3). An example of AV is a design application for a digitally created room, where the user can change and select seemingly physical objects to create an interior layout. Nevertheless, it is a lesser-known concept because AV is often inaccurately regarded as a variation of VR and MxR (mixed reality) (Ibid.: 2). To have an alternative terminological approach for both AR and AV, the taxonomy authors suggest using HR (*hybrid reality*) as a way "of encompassing the concept of blending many types of distinct display media" (Milgram & Kishino, 1994: 1322).

Widely more known is the VR, which has become "a tool commonly used in the architectural and heritage industries, allowing users to experience space through virtual means, whether via computer screen or, immersively, through the use of an immersive headset and 360-degree imagery" (Howell, 2017: 1-2). Since VR stands for virtual reality, as opposed to physical, actual reality, it is pictured at the other end of the spectrum. It is said that the forerunner of VR comes as early as the 1950s and 1960s, the so-called Sensorama Simulator, patented and developed by Morton Heilig. This simulator allowed users to watch somewhat static 3D films. Nevertheless, the term VR was coined twenty years later by computer scientist Jaron Lanier (Champion, 2018: 2). Since then VR has developed into an immersive visualization tool that can be used for multitudinous purposes, breaking the geographical margins for its users. To be able to use VR, from the technical parameters, a head-mounted display (HMD) and/or handgrip accessories are required.

Even if the VR is diametrically opposed to the actual reality, a rule of thumb has been observed – the more VR imitates the laws and mechanics of the physical reality, the more intuitive, embodied the experience within VR becomes (Riecke, 2006: 107; Champion, 2018: 9). Meaning, that such a principle impacts the overall user experience and the accuracy of the environment in which the VR is set to display. Although there is a clear distinction between the *real* and the *virtual*, the authors of the continuum imply it is not very critical to actualize, since "[…] the basic intention there is that a "virtual" world be synthesized, by computer, to give the participant the impression

that world is not actually artificial but is “real”, and that the participant is “really” present withing that world” (Milgram & Kishino, 1994: 1324) (emphasis in original). In the heritage industry, this is of particular importance, if the aim of VR is to enable a user to feel and participate within the spatial experience (Stone & Ojika, 2000). Additionally, as VR gets more technologically advanced, many VR developers start to explore the ways in which VR could address as many phenomenological senses as possible. Since the classical phenomenological approach is the first-person experience, through which the user is making sense of the places and of the lived body itself (see Merleau-Ponty, 1962), the integration of all five senses, namely sight, hearing, touch, smell, taste, in VR is challenging, yet crucial: “[…] sound has successfully been integrated into many virtual reality experiences through narration, environmental noise, and music. Smell, taste, and touch, however, are less frequently integrated into virtual reality, as they require the use of less readily available technologies” (Howell, 2017: 23), meaning – such technology has yet to come.

As mentioned before, Milgram’s and Kishino's taxonomy introduced the MxR or the Mixed Reality as the primary focus in their seminal work. MxR connects both ends of the continuum – namely, the physical and virtual -, thus making it a “digitally-provided experience somewhere between augmented reality and virtual reality” (Champion, 2018: 5). Thus, it can be said that MxR systems include the notion of physicality while remaining virtual. Furthermore, the initial paper demonstrates three dimensions of MxR, namely *Extent of World Knowledge* (EWK), *Reproduction Fidelity* (RF), and *Extent of Presence Metaphor* (EPM) (see Figure 4).

Hereby, the EWK essentially describes how well the system knows the overall virtual environment and the objects programmed in there. It also characterizes a “level of modeling of the real world, and specifically, the *where* (locations of objects) or *what* (identification of objects), included in the MR environment” (Skarbez et al., 2021: 4) (emphasis in original). The RF constitutes the degree of realism within the virtual environment, particularly “in terms of image quality and in terms of immersion, or presence, within the display” (Milgram & Kishino, 1994: 1326). The higher the fidelity is, the bigger the immersion, which can lead to the user experiencing *unmediated reality* in, de facto, mediated reality. This can turn into what Ivan Sutherland has described as the ultimate display “within which the computer can control the existence of matter” (Sutherland, 1965: 507). The last dimension – EPM – explains how natural or unrefined the virtual experience is through the display. The reason for including the notion of *metaphor* is because it

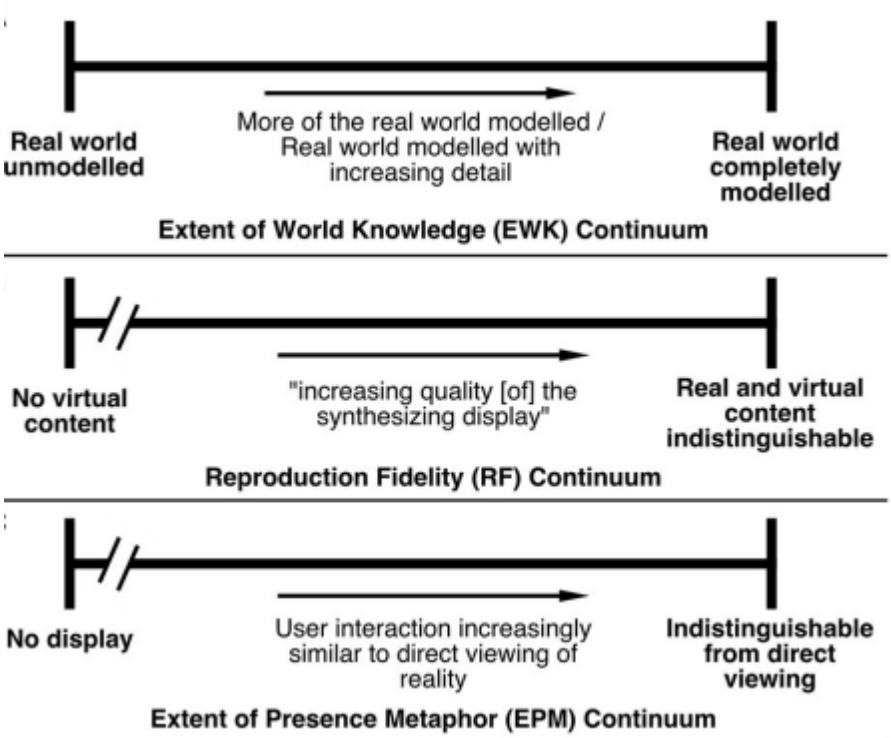

Figure 4. Three dimensions to MxR. *Source*: Skarbez et al., 2021: 4 (adapted from Milgram & Kishino, 1994: 1326-1327).

describes the denotative "metaphor of being on the inside of the world being viewed" (Milgram & Kishino, 1994: 1328). All three dimensions impact the user experience. Additionally, there are three fundamental aspects to the reality-virtuality continuum that must be taken into account when speaking of any immersive digital media:

- The distinction between real objects as "any objects that have an actual objective existence" and virtual objects as "objects that exist in the essence of effect but not formally or actually";
- The image quality and technological capability to reflect reality;
- The difference between the real image as "any image which has some luminosity at the location at which it appears to be located" and the virtual image as "an image which has no luminosity at the location at which it appears, and includes such examples as holograms and mirror images" (Ibid.: 1324-1325).

Nevertheless, there are several limitations of the continuum - the initial scale, focusing on the technological level, only partially describes the user's psychological degree and the impact of the sensory system on the VR experience. Furthermore, no attention is paid to the impact of user-

oriented design on the VR experience (Skarbez et al. 2021: 6); VR has been based on mechanics rather than user experience in popular media (Champion, 2018: 3). The author anticipates that in creating digital media, particularly on difficult heritage, the user should be put in the center of the experience, as one becomes the spectator, the mediator, the co-witness of the difficult past, told within the virtual environment. Even if the technology does not disappoint the user, a bad user experience can – it can lead to discouragement for the continuous learning process and even distrust for the mediated acknowledgment of past atrocities. In the words of Adam Brown and Deb Waterhouse-Watson (2014: 6): "The limitations of digital media and its use(s) always need to be kept in mind; nevertheless, computers can also render the Holocaust more 'tangible', 'immediate' and 'accessible' (as opposed to simply more 'fun') for young people". Such restrictions put focus on not only the digital media tools themselves but also how the tools are used and for what purposes.

Richard Skarbez, et al. (2021) have explored these limitations of the initial reality-virtuality continuum. The new conceptualization is not only complemented by the dire need of considering the user experience but also restructured from the virtual end of the spectrum (see Figure 5).

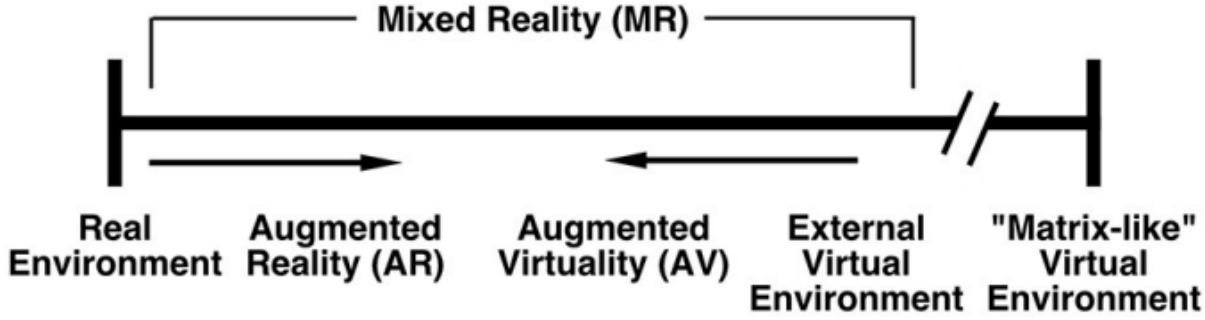

Figure 5. The revisited Reality-Virtuality continuum. *Source*: Skarbez et al., 2021: 3.

The authors argue that a virtual environment can never be solely virtual, or synthetic. The fact that VR displays (and any other digital media devices, for that matter) are also physical, tangible objects, "users experience such external VEs as mixed reality, with virtual objects situated within a real environment" (Ibid.: 3).

The article also turns back to the ideation of phenomenological sensory experience, insofar as the virtual environment "cannot control or manipulate the interoceptive senses" (Ibid.). This leads back to the afore-mentioned idea of the Ultimate Display by Sutherland. Even if there can

be a technology that truly embarks the user on a totally immersive journey in which all of the five exteroceptive senses – sight, hearing, touch, smell, and taste -, are *activated*, the interoceptive senses, like vestibular and proprioceptive senses, remain unaffected. For example, the user in the virtual environment would still understand where the ground is and that one's feet are on the floor. Hence, the authors introduce EVE (*External Virtual Environment*) because "these sensory conflicts are *inherent* to conventional virtual reality systems" (Ibid.).

However, the new end of the spectrum – a "Matrix-like" Virtual Environment – could resolve such sensory conflicts. It is important to note that the revisited continuum shows a discontinuity between EVE and Matrix-like Virtual Environment due to the future-esque conditions of what such virtual environment would bring to the users (hence, *Matrix* is used as a reference to the movie of the same title): "In the *Matrix* films, sensory agreement is accomplished by direct brain stimulation: a person's sensory organs are in some way disconnected from their brain such that both interoceptive (e.g., proprioception) and exteroceptive (e.g., sight) senses are stimulated by technology" (Ibid.).

The debate on the reality-virtuality continuum is as ambiguous as the future itself. By focusing on more precise concepts of digital media tools and more importantly - on which environments such tool *opens up* for the user -, we could understand which tool and why it is more suitable for maintaining and displaying a heritage that would otherwise could be difficult to disclose.

2.3.1. User experience and virtual heritage perspectives

The current digital technologies have embarked on a central role in the user experience. However, the main question pertains – how consistently and intuitively is the difficult story intention conveyed to the user? The need for conveying the person's experience in interacting with a product started with the interactive systems development. It was observed that nor information technology, nor product development solely cannot be held responsible for a bad user experience, simply because market-driven institutions did not aim to search for human needs. "The International Organization for Standardization" (2010: 3.2.3.) has defined the user experience as "user 's perceptions and responses that result from the use and/or anticipated use of a system, product or service", including "users' emotions, beliefs, preferences, perceptions, comfort, behaviours, and accomplishments that occur before, during and after use". Thus, it can be said that the user experience derives from not only the main activity of using an interactive tool but also

from the user's prior experiences, abilities, characteristics, emotional and physical state, and from the very context in which the interactive tool is used.

The very term UX (user experience) was coined in 1993 by Don Norman, an American psychologist with a background in electrical engineering. In his influential book entitled "The Design of Everyday Things", the author explores the differences between good design and bad design, the notions of declarative, procedural memory, and experience design. Since "design is concerned with how things work, how they are controlled, and the nature of the interaction between people and technology" (Norman, 2013: 5), the UX comprises the totality of using anything usable (or not usable for that matter). Nevertheless, the UX should not be perceived just from a utilitarian paradigm by focusing solely on a product's utility and usability aspects. Besides the technically measurable quantities of a design, the emotional and cognitive processing, as well, forms the fundamental ground of UX.

There are three levels of such processing –visceral, behavioral, and reflective. The first one grants us the ability "to respond quickly and subconsciously, without conscious awareness or control" (Ibid.: 50), thus it is soundly tied to the motor system. For a design, the visceral system is responsible for the very first impression. Here, the focus is put on aesthetics and visual sensibilities, rather than usability and function. Behavioral processing, on the other hand, is "the home of learned skills, triggered by situations that match the appropriate patterns" (Ibid.: 51). Whether the product seems appropriate or not stems from the anticipated expectations – if the expectations are met, the product will be interpreted positively, and *vice versa*. The latter, reflective processing, stands for the conscious decision-making, in which by "adding causal elements to experienced events leads to such emotional states as guilt and pride (when we assume ourselves to be the cause) and blame and praise (when others are thought to be the cause)" (Ibid.: 53). Reflective processing is long-term, deep situated cognition level, intertwined with emotions. When designing a product, all three emotional and cognitive processing levels should be taken into account.

It is said that such reflection on the user experiences connected to the difficult heritage and dark tourism sites can also be of special value, especially considering the possible motivations, ways of feeling, and bodily-phenomenological involvement of the visitors (see Golańska, 2015). If one wants to analyze, as Kansteiner (2017) puts it, the phenomena of *gaming the Holocaust paradigm*, the user experience cannot be left out of the scope. And since virtual heritage is one of the few fields that has embraced immersive reality tools, there is a significant number of articles

discussing – either directly or not – the user experience within the scope of merging virtual elements with real environment counterparts. Panayiotis Koutsabasis (2021: 125) has evaluated the extent to which the virtual heritage technologies aim to offer a satisfactory UX, stating that "visitors of cultural heritage sites are interested in maximizing their experience in terms of sensitization and learning, mediated by technology". He also includes the various dimensions of UX that the public memory institutions should take into account, namely - usability, engagement and flow, presence, learning, accessibility (see Figure 6); Champion (2021: 133) stipulates that UX is one of the fundamental components if virtual heritage professionals want to fully preserve, as well as curate cultural heritage, since "[…] the user experience relies not only on technology and access to that technology but an experience of cultural heritage that is considered in some sense authentic and meaningful by the participant"; Kansteiner (2017: 335) puts the user in the center within the digital Holocaust culture, albeit not the user experience, by stating that the users of contemporary digital iniciatives are becoming "the narrators of their own memories" and by that helping the non-digital native generation "[…] who simply did not have similar cultural agency"; upon calling the digitally fostered values, Andrew Hoskins (2018) believes that it is within the user capacity to foster the digital memory and make it personally accountable.

Although there are several studies done on the virtual heritage *per se,* there are just a few articles that focus on the user-centered design impact of difficult heritage-related immersive tools on the user experience. Here, user-centered design means an "approach to systems design and development that aims to make interactive systems more usable by focusing on the use of the system and applying human factors/ergonomics and usability knowledge and techniques" (ISO 9241-210, 2010: 2.7). If speaking about difficult heritage-related immersive content, it seems that the user-centered shall be not only the interactive system's design but also the very content - it is not only the story about the person who uses an interactive tool but also about the person whose story is portrayed within the interactive experience. User experience for difficult heritage becomes a double-edged sword. Frosh (2018) characterizes it as *moral affordances of media* when speaking on promulgating past sufferings and the moral status of both the viewer and the narrator: "Most investigations of these areas have accentuated the deep logistics of algorithmic processes and data organization, rather than the aesthetic qualities of *embodied interaction between users and* […]

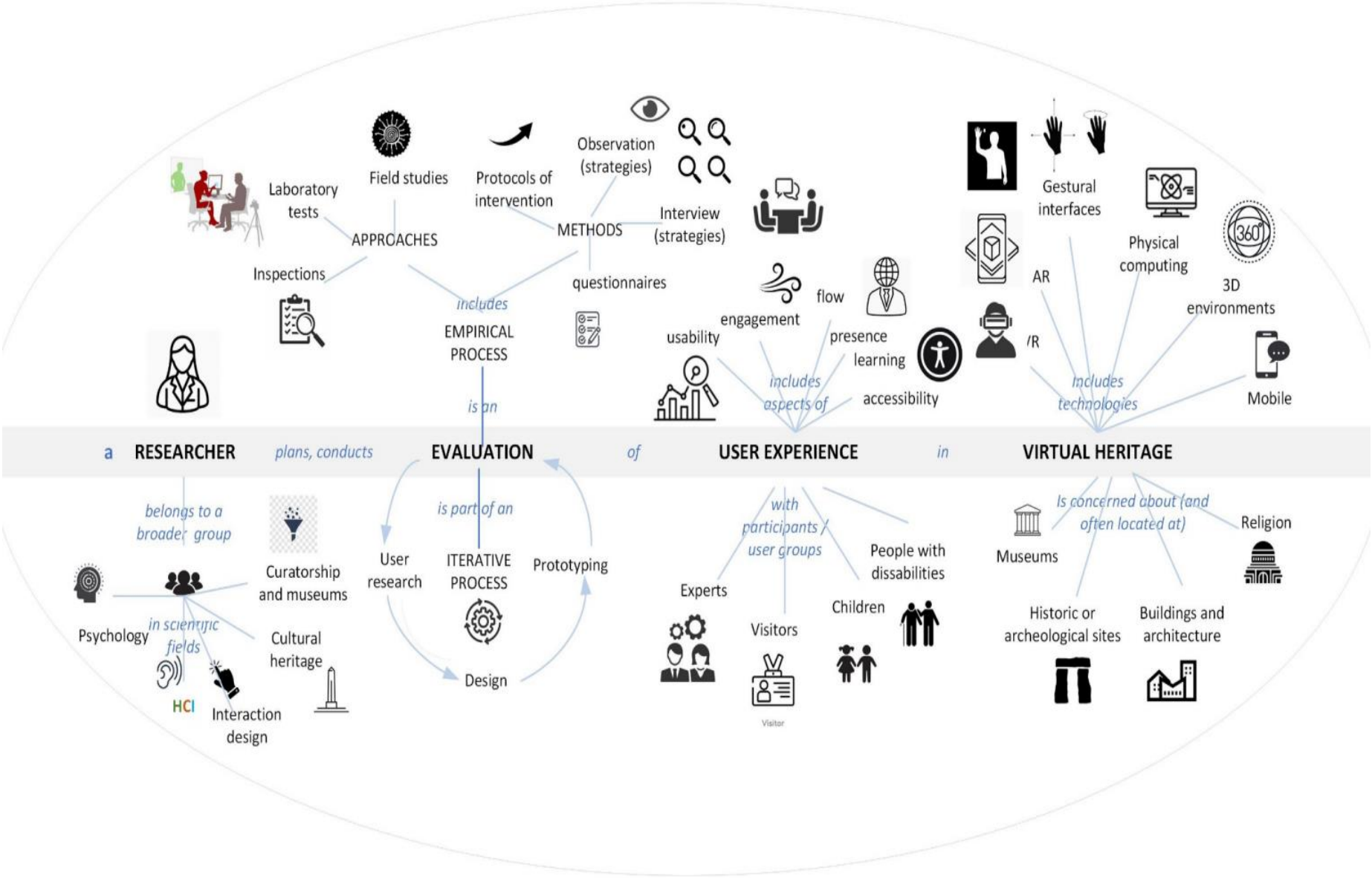

Figure 6. Visual model of the concepts about evaluation in virtual heritage. *Source*: Koutsabasis, 2021: 117.

"[…] *digital devices* and their implications for a moral response to the witnessing of suffering" (Frosh, 2018: 356) (emphasis in original).

Because immersive digital media tools, like VR, puts the users in the shoes of the storyline character – be it a Holocaust survivor, concentration camp escapee, or war crime eyewitness -, it has the potential in converting empathy. However, to be sure of such an outcome from the immersive experience, there should be continuous, iteratively combined efforts from the public memory institution stakeholders, eyewitnesses, and the users who will carry the living memory on. The focus on user experience, albeit not done thoroughly by difficult heritage experts, should be the prime focus if the difficult heritage legacy is to be maintained.

2.3.2. Immersion, engagement, and embodiment in commemoration

For the virtual culture to mediate difficult and traumatic memory and to *touch virtual trauma* (see Trezise, 2011), a few aspects shall be taking place concurrently. Skarbez, et al. (2021) go as far as to include *place illusion*, *world awareness*, *plausibility illusion*, *MxR illusion*, and other dimensions and subjective user feelings within a virtual experience, yet, arguably, the three main pillars of user experience could be – immersion, engagement, and embodiment.

Immersion is described as a feeling when one senses a worldly phenomenon – be it physical or virtual – as deeply *absorbing*. It seems that immersion is something that VR, AR, and MxR almost always promise. Immersion can be achieved through the use of various sem- and high-tech technologies, like head-tracking, head-mounted display, 3D environment, hand-grip, a digital system that follows physical laws, and so on.

There is a difference between *spatial immersion* (also *cognitive immersion*) as "a state […] in an environment other than the one in which you physically exist" (Howell, 2017: 43) and *telepresence* – a widely known derivative from Marvin Minsky's seminal paper "Telepresence". Minsky (1980) described a world, where much hazardous manual labor could be automated, while still keeping the individual agency. He asks: "The biggest challenge to developing telepresence is achieving that sense of 'being there'. Can telepresence be a true substitute for the real thing?" (Minsky, 1980: 48). When speaking about contemporary digital tools, such as VR, AR, and MxR, more appropriate is to use the spatial immersion concept (see Howell, 2017: 43-61).

Immersion plays a significant role in the user's bodily presence. Presence (and thus, also absence) has been a subject of particular interest in the humanities field, yet its importance in tourism sites, including dark tourism sites, is seldom. Why should one feel *immersed* and *present*

in a place where something atrocious has happened? Whether user feels immersed in the virtual world has an indispensable impact on the educational value of digital content. Suzanne Beer (2015: 2) has shown the learning possibilities within e-education in videogames and virtual museums, stating: "The immersive power of computer images and games, projected into a virtual reality device is the basis for an educational theory of knowledge transmission aside from mainline pedagogical ones".

Furthermore, feeling immersed and present in the virtual world (but not knowing, at some point, that one is immersed in the synthetic world) could play a role in the performative culture of remembrance. As Bareither (2021: 69) notably argues: "[…] practices of presenting the past through media entail far more than subjective emotional immersion into this past. Instead, they are about connecting to the past in order to make this past a meaningful part of one's own present". Breaking the sense of immersion, thus, has its consequences, particularly when experiencing difficult-heritage-related content. The role of immersive reality technologies is to ensure the continuity of the experience during and after it – although, immersion is in some sense an illusion, the result of it can make the true events appear even truer. In the words of James Sweeting (2019: 69): "A greater risk is posed from the uncanny at breaking the sense of immersion for the player. Therefore, a focus on establishing authenticity over accuracy is important as the *selective* approach helps to contribute to the experience" (emphasis in original).

Embodiment, as well, can support the feeling of being immersed. "This feeling helps the user to experience stimuli directly, without a sense of mediation" (Barratt, 2021: 17), ultimately feeling like the virtual self is the extension of the self. In regards to difficult heritage, such a site of historical memory in itself can be "organized, frozen, and embodied in the material" (Goulding et al., 2018: 32), and while – as concluded earlier – virtual environment *per se* is not material, it can be the medium through which the materiality can be embodied. Furthermore, from the Deleuzian approach, "[…] virtual will be the idea which a heritage object embodies" (Beer, 2015: 1). Thus, the embodied experience within the immersive reality can serve to re-actualize historical events through one *being there* and through *oneself*.

As public memory institutions are concerned with finding new approaches how to re-engage visitors, especially the youth, terms such as *engagement*, *participation,* and *interactivity* have become integral in these discussions. The way how virtual heritage tries to up new ways of engagement is, roughly speaking, by not locking the material exhibition under the glass displays.

However, there still is a lingering impediment, regarding the perceived diminishing value of material collections and artifacts. For difficult heritage sites are considered the "material reminders of a past" (Macdonald, 2009: 1), the concern is undeniable. Brown and Waterhouse (2014) have reflected on the Jewish Holocaust Centre virtual creation, entitled "StoryPods" – interactive audio-visual snapshots of Holocaust survivor stories. Due to the "StoryPods" successful positionality with the rest of the tangible center collection, "[…] the JHC StoryPods show that interactive digital media can rather complement these more traditional displays, facilitating vieweers' engagement with them and preserving the link to physical objects" (Brown & Waterhouse, 2014: 20). It has been proven that the digital media to the material reminders can have a complementary value. The technologies could also make history more accessible by being the alternative medium through which the user can engage with various periods of history (Sweeting, 2019: 68), with otherwise unaccessible heritage sites and artifacts (Bekele & Champion, 2019a: 682), with something we would find "difficult to become acquainted" (Blom, 2000: 35) and can attribute to bigger engagement within the political, socio-cultural, racial, gendered world dimensions of the world (Janz, 2018: 108).

A new interesting case study has been done on an exhibition project, entitled "Nobody's Listening". The virtual VR experience brings the users to Yazidi – a homeland for Kurmanji-speaking ethnic group. Besides the otherwise geographically hard-to-reach journey, the main aim is to introduce the user to the Yazidi genocide, done by ISIS (Islamic State of Iraq and Syria) in the mid-2010s. The horrible suffering done by ISIS includes ethnic cleansing, continuous rape of young Kurmanji women, sexual enslavement, families witnessing their loved ones being killed, and destruction of the ancient tangible and intangible cultural heritage of the Yazidi region. While the VR experience does not show direct violence, it is not needed to convey the full story. It would also go against the *Do No Harm* ethical principle. The dismantled landscape and people's stories do the needed work: "The first-person immersive time travel experience and its impacts can potentially support reconciliation and peace efforts among Iraqi communities, which cannot be achieved or sustained without truth, recognition, justice, and empathy for the victims and survivors" (Stylianou-Lambert, et al., 2022: 97). Interestingly, the user can choose which story to follow – the Yazidi woman, Yazidi man, or an ISIS fighter (Ibid.: 98). Thus, it forms a very distinctive dichotomy, existing within the difficult heritage stories – on one hand, there is the

victim and/or survivor, and on the other hand, there is also the perpetrator. Here, arguably the Yazidi landscape also plays a significant role in the storytelling, making it the fourth narrator.

Altogether, such a VR experience aims to immerse the user into the testimonies of Yazidi survivors. In order to achieve the immersion and engagement, the development team of "Nobody's Listening" chose to use "360-degree videos ad photos of real scenes from the destroyed homes and village [that] virtually transport users into the actual places where some of the genocide events took place […] In addition to looking around, users are able to move around the virtually reconstructed 360-degree scenes and to get closer to the marks and evidence of the destruction" (Ibid.: 100). And because Yazidi is still largely inaccessible and dangerous to visit, the VR experience also becomes an effective medium for exhibiting otherwise unreachable difficult heritage. The immersive technologies have democratized access to individual commemoration.

The already mentioned emotional and cognitive processing levels make up a unique user experience. Such experience might lead to the user creating "their own value systems […], ultimately resulting in the user caring about the game world" (Howell, 2017: 40). Immersion, engagement and the embodiment can only reinforce the experience. Yet, the gamification value has been vigorously attributed to immersive virtual experiences. Without a doubt, video games are the predecessors of immersive experiences, hence comes the predisposition of automatically attributing gamified aspects to any other digital media tools. However, even if a difficult topic is displayed through a medium, reduced as entertainment, it can still result in the user creating an educational, empathetic attachment to the virtual landscape and story. Such medium is termed *serious games* (see Anderson, et al., 2010; Barratt, 2021). It can also result in the user returning to the experience, ultimately producing a commemorative aspect (Ibid.; Bareither, 2021: 66; Marschall, 2013: 200); in a similar manner, such mediums offer the users to think and contemplate about something far beyond their lived experiences.

3. Research design and methodology

3.1. Grounded theory for heritage studies

As virtual heritage studies implicate a multidisciplinary approach, the ways of conducting, organizing, and analyzing the data require an examination of methodological principles. The reconsideration of the epistemological and ontological grounds of the chosen methodology is crucial "because of […] lack of research into visitor experiences, as opposed to consumption, the nature of visitors and their subjective interactions with heritage attractions are not fully understood" (Daengbuppha et al., 2006: 368). Although formulated already in the late 1960s, the Grounded theory is still widely used – due to its flexibility, iterative nature, and coherent guidelines it has attracted particular popularity among novice researchers in qualitative disciplines (Mehmetoglu & Altinay, 2006: 30).

Based on the pioneering works by Barney G. Glaser and Anselm L. Strauss, the Grounded theory saw the light in very auspicious times, when the academic scene (particularly in the United States) was dominated by quantitative science and positivist paradigm[2]. The extreme positivist attitude among scholars only stipulated the development of the Grounded theory, which the authors – Glaser and Strauss – first described in "The Discovery of Grounded Theory" (1967). Both authors explored the ways in which hospital staff take care of terminally ill patients and make sense of a chronic illness and even death itself. In this manner, the theory is intrinsically based on investigating the ways how to approach a difficult topic from an alternative, non-positivist methodology.

The positivist (also *postpositivist, postpositivism*) methodology is based on a certain kind of worldview or "a basic set of beliefs that guide action" (Guba, 1990: 17) that ultimately impacts the chosen research design, research methods, approaches, and so on (see Figure 7). The positivist worldview is fundamentally based on "developing numeric measures of observations and studying the behavior of individuals", thus positivist researcher "begins with a theory, collects data that

[2] It is important to note that such considerations took place well before the so-called *Paradigm Wars*, where the discussion on the idea of a paradigm came to be influential in the 1980s and 1990s, as Thomas Kuhn popularized the epistemological differences between quantitative and qualitative sciences. However, as Maxwell (2018) indicates, such debates turmoiled already in the 1970s after a massive increase in funding and academic prestige, making quantitative research the dominant form of analysis (see Kuhn, 1996; Maxwell, 2018).

either supports or refutes the theory, and then makes necessary revisions and conducts additional tests" (Creswell, 2014: 36).

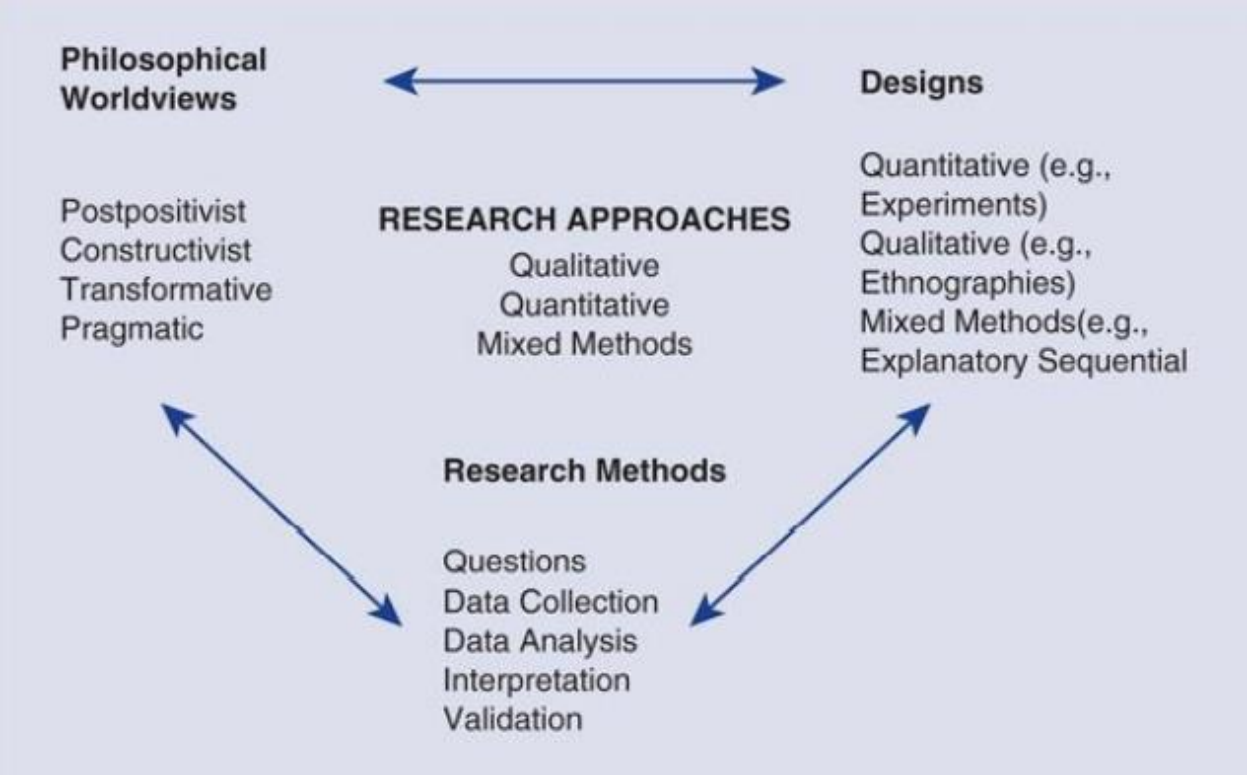

Figure 7. The interconnection of the worldviews, research design, and methods. *Source*: Creswell, 2014: 35.

The Grounded theory authors wanted to move away from such technique, as the focus is put on continuous comparison data and its entry-points (Matteucci & Gnoth, 2017: 50), inductive rather than deductive analysis about a phenomenon (Daengbuppha et al., 2006: 369), reliability of the data rather than on prepossessed theoretical themes (Charmaz, 2017: 2), empirical fieldwork (Stone, 2010: 163), and constant data iteration (Charmaz, 2011: 361). The grounded theory could be described as having five core principles:

1. Openness – research question and aim remain *open* throughout all the research stages, as "research is not led by a particular theoretical framework", thus structure being flexible to adjustments and changes throughout the inquiry;
2. Explanatory power – research is based on a pertinent phenomenon that is also relevant to a larger part of society;

3. Generation *versus* justification – research focuses on "gaining insights or constructing knowledge about phenomena, not on justifying preconceived ideas";
4. Theory structure – research has an array of "theoretical propositions […] linked to core categories, whereby categories need to be defined and related to other categories";
5. Research process – research consists of "various phases throughout which data is coded and interpreted", thus becoming iterative and adaptable (Matteucci & Gnoth, 2017: 50; see also Gibson & Hartman, 2014).

However, "[…] despite this attempt, ironically, grounded theory has been often relegated to being considered the most modernist and positivistic approach of all interpretive methods" (Matteucci & Gnoth, 2017: 50), even if one of the authors – Glaser – has remarked that the theory is coming from the pragmatism worldview (see Glaser, 1998) (see Table 1).

Postpositivism	**Constructivism**
• Determination • Reductionism • Empirical observation and measurement • Theory verification	• Understanding • Multiple participant meanings • Social and historical construction • Theory generation
Transformative	**Pragmatism**
• Political • Power and justice oriented • Collaborative • Change-oriented	• Consequences of actions • Problem-centered • Pluralistic • Real-world practice oriented

Table 1. The four worldviews of scientific research. *Source*: Creswell, 2014: 36.

There have been various changes in the initial grounded theory – in fact, both authors went distinctive ways in regards to the development of the theory and its accordance with the worldviews. Thus, it is not without difficulty for researchers to "navigate the complex array of grounded theory approaches" (Rieger, 2018: 1). Additionally, not only there have been distinctive subsidiary branches to the initial grounded theory but also opinions about the development of grounded theory alter. Due to that, it is necessary to distinguish between the most broadly used editions of the pioneering work – the classic Glaserian grounded theory (CGGT), Straussian grounded theory (SGT), and constructivist grounded theory (CGT).

The most recent development for the grounded theory is CGT, where Kathy Charmaz (2000) saw yet another critical challenge – the lack of the researcher's position and researcher own-reflections on the used rhetoric. She states: "This trend supports constructivist approaches in

grounded theory because it explicitly treats authors' works *as* constructions instead of as objectified products" (Charmaz, 2000: 528) (emphasis in original).

When it comes to applying grounded theory to heritage studies, Veysel Apaydin (2018) used the grounded theory principles to uncover the interviewee's in-depth standpoints on Mediaeval Armenian architectural heritage. Furthermore, Philip Stone (2010) has applied various grounded theory principles to his study on dark tourism, particularly focusing on the theory creation through empirical data; similarly, Jaruwan Daengbuppha, Nigel Hemmington, and Keith Wilkes (2006) eminently explore the use of grounded theory for modeling visitor experiences at three World Heritage Sites in Thailand.

The disposition of the thesis seems more closely linked to the last version of the grounded theory – the CGT - due to the emphasis on the positionality of the researcher. This edition of the grounded theory "sees both data and analysis as created from shared experiences and relationships with participants and other sources of data" (Charmaz, 2006: 130), making the data and inquiry social constructs. Additionally, the constructivists "foster openness to the world and curiosity about it; encourage an empathetic understanding of research participants' meanings, actions, and worlds; take temporality into account; focus on meaning and process at the subjective and social levels" (Ibid.: 184). Thus, the constructivist grounded theory was applied as a general methodological umbrella under which:

- new additions of the theoretical concepts are emerging;
- the subjectivities of both the research*er* and the researche*d* are holistically elucidated;
- the multiple realities of the digitalization of difficult heritage emerge from various perspectives.

3.2.Primary data collection methods and approaches

3.2.1. The use of play method – Lipke VR bunker and its context

"I was among a small group of people, standing behind the ghetto fence, looking in horror at what was happening on the other side of the fence. People running helplessly from here to there, screaming, crying. […] Dead bodies remained on the street on which the people were herded to be executed. I saw many bodies of women and children in the courtyard of a large house. This building was on Lāčplēša Street next to the barbed wire fence surrounding the ghetto."

(Žanis Lipke in Museum of the Occupation of Latvia, n.d.).

As the overall theoretical perspective and methodology evolve around the digital initiatives, such as Lipke VR bunker, the participatory action of the research*ed* and research*er* is crucial. For the documentary context, the initial development of the Lipke VR bunker began in 2019 with the hackathon "RIGA IFF GOES VR" announced by the "Riga International Film Festival" and "Story Hub". An interdisciplinary team, led by young media artists - Ieva Vīksne, Līga Vēliņa, Kaspars Lēvalds, and Laura Taube – and Žanis Lipke memorial team together participated in its development. After presenting the first prototype to a wider audience and XR (*extended reality*) experts, the iteration of Lipke VR bunker continued, with the help of Minneapolis (USA) based creative technologist at Fallon Worldwide - Cory McLeod. Since then the team has come up with a presentational prototype, which aims is to "employ it as a proof-of-concept like an object in a pitch to VR content development stakeholders and Holocaust education institutions" (Riga International Film Festival, n.d.). Although there is no precise timeline, marking the development of digital initiatives around difficult heritage, it is safe to say that "Anne Frank House VR"[3] is one of the first worldwide known pioneering works that re-articulates the past through the power of virtual reality. After the first launch in 2018, the user has been enabled to explore Anne Frank's hiding place – the Secret Annex -, "as it was from July 1942 to August 1944, the period when Anne Frank lived in the Secret Annex and wrote her diary" (Anne Frank House, n.d.) since the actual hiding space located in Amsterdam currently is empty.

In regards to the Latvian initiative, the courageous story of jew rescuer Žanis Lipke is not to be told in a linear manner. The first iteration prototype - shown also to the research participants – explores the story from Žanis Lipke's[4] son, Zigi's (real name Zigfrīds Lipke), perspective. He was only 8 when the devastation of the Second World War began to form its anti-semitic features in Latvia. The boy's destiny is closely linked to the selfless parents'[5] plan to save lives including

[3] Anne Frank House also developed "The Anne Frank video diary" that consists of fifteen episodes, depicting Anne's life after the Netherlands was occupied in 1940 (see Anne Frank House, n.d.).

[4] Žanis Lipke (real name Jānis Lipke) (01.02.1900.-14.05.1987.) saved 55 people from certain death with the help of friends. One can search for a long time for the reasons why a person is capable of what Žanis Lipke and those close to him were capable of. The Žanis Lipke Memorial, in an attempt to find a reason, states: "There are different speculations regarding Lipke's motivation: some say he had a deeply felt personal disdain for the German occupiers, others think that he was just an adventurer and a daredevil, still others consider him simply an exceptionally good person.". In 1966, during the communist occupation, Žanis and Johanna Lipke were awarded the "Righteous Among the Nations", the highest award of the State of Israel. They say that Žanis Lipke looked at death so boldly and insistently in the eye that it shied away from him. The tree planted by Jānis Lipke in the Avenue of the Saviours in Jerusalem is still growing today - a testament to humanity (see Žaņa Lipkes memoriāls, n.d.a).

[5] Žanis Lipke wife, Johanna Lipke, was the closest confidante to Žanis. Her courage, care, and resistance saved many lives (see Žaņa Lipkes memoriāls, n.d.a).

the search for asylum places and ways of their sustenance. One of the hiding places was located under the shed of the Lipke family house - the first bunker dug in 1942 collapsed in the spring thaw, but immediately Žanis Lipke built a new, more thoughtful bunker (*Sukkah* or temporary shelter in Hebrew). Zigis was already on guard at the age of 9: "If a stranger approached the house, little Zigis gave people in the bunker signal that they should be especially careful and sit quietly" (Žanis Lipke Memoriāls, n.d.a). Later, electricity was drawn into the bunker, and instead of knocking, Zigis announced the danger by turning off the lights. The boy was also on guard at the dog kennel when both parents went to the nearby Balastdamm camp to help the inmates (Ibid.).

The historical context is crucial not only to ponder Lipke's family's endurance and compassion during extremely difficult times but also because only after Zigis' drawing album one can understand the parameters of the bunker (see Figure 8). On the official Žanis Lipke memorial website it is stated that "[…] one exit from the bunker was under a doghouse, the other on the northern hillside" and that "[…] during the Second World War, eight to twelve people used this 3×3 meter hole in the ground as a shelter, often for long periods of time" (Žanis Lipke memorial, n.d.b.). Note that Zigis stood guard near one of the exits.

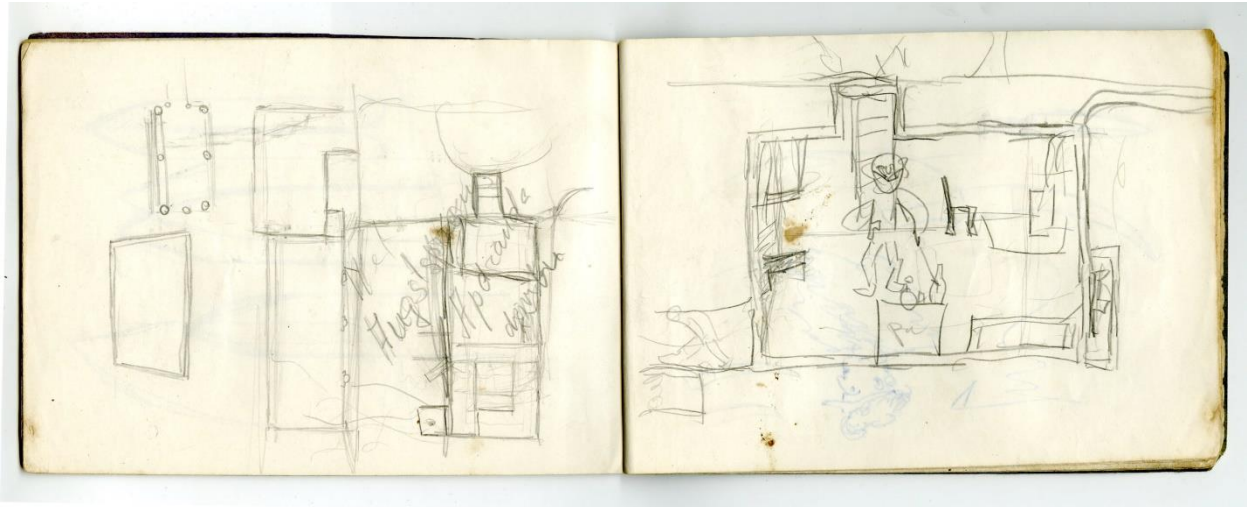

Figure 8. Drawings by Zigfrīds Lipke showing the bunker in which the family hid Jews. *Source*: Žanis Lipke memoriāls, n.d.c.

This bunker no longer exists – it eventually caved and the original woodshed burned down (Žanis Lipke memorial, n.d.d.) -, yet the memory prevails. The digital storytelling of the Lipke VR bunker is not limited to the 3×3 underground space. The continuity of the non-linear and multitudinous memory acts of the witnesses and survivors "augment the scope of perspectives to include the

stories of those people whom Lipke helped evade the Holocaust" (Sīmansons, 2021). As such, an additional VR prototype is developed and iterated that will focus on the Stern family who were "deported from Berlin to Riga in 1942 and were able to escape from the Kaiserwald Concentration Camp in one of Lipke's most challenging rescue operations" (Ibid.).

The literature on how to employ user-testings for heritage-related VR is scarce; it is even more limited for UX methodology on difficult heritage-related VR. As summarised by Chong, et al. (2021) there are several methodological challenges to VR for cultural heritage that includes but is not limited to system design, development process, technology, assessment process, and knowledge transfer. These categories influence the totality of the user experience (Chong, et al., 2021: 6-15). As the understanding of the VR and its competence within the context of difficult heritage was explored more assiduously during the focus groups and participatory visual research methods (see Chapter 4.2.3.), the *playing* aspect of the VR experience can be described through the use of the play method. This playing aspect (or *gaming*) is seen "as a social practice that extends well beyond the actual moment of gameplay" (Nielsen & Krogager, 2015: 78). The VR is a state of experience, where the play elements are not seen in a disposition to its cultural form and overall context (see Figure 9). All three spheres shall not be separated, insofar as they "must be seen both as mutually interacting and complementary, and informed by historical processes" (Mäyrä, 2008: 2). The game in such conceptualization is the Lipke VR bunker; the player is the user (who is also a research participant and a visitor), and the contextual frames include but are not limited to the public memory institution – Žanis Lipke memorial -, difficult heritage, its digitalization, and virtual commemoration practices. Thus, the use of play means not only the gaming of VR itself but also experiencing the overall sociocultural context.

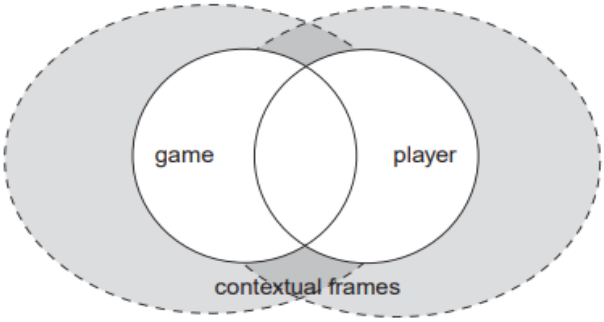

Figure 9. The interaction between the game, the player, and the contextual frames. *Source*: Mäyrä, 2008: 2.

Similarly to that, the use of play considers the various layers of the game itself. Since "often when the concept of the game emerges, it remains unclear which dimension – gameplay, characteristics, developers, mods – is actually addressed" (Mäyrä, 2008: 17), it is important to set a clear distinction between the two main layers of the game. Whilst the *core* (also *gameplay*) is regarded as "everything a player can do while playing the game, and also game rules that govern these actions", the *shell* (also *representation*) "[…] includes all the semiotic richness modifying, containing, and adding significance to that basic interaction" (Ibid.) (see Figure 10).

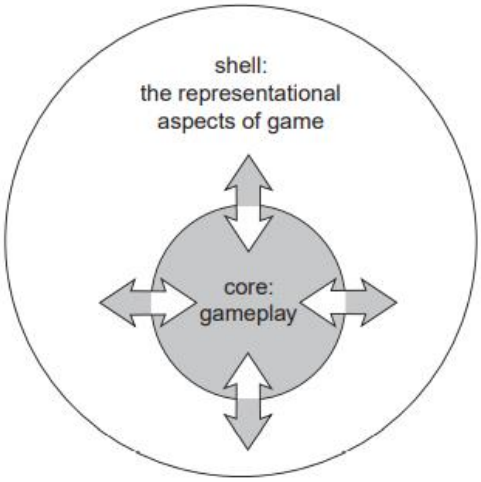

Figure 10. The dialectic of core (gameplay) and shell (representation). *Source*: Mäyrä, 2008: 18.

Although they are different structures, both of the layers form the fundament elements of the game - as such, the core constitutes the whole story-line and the game rules (the *rule sets* that the player must follow in order to complete the game successfully), yet the shell constitutes the overall

aesthetics, graphic design, and audiovisuals of the game. They both influence the overall gameplay experience for the player, however, the player can be more invested in either of the game layers: "[…] some gamers concentrate more on the rule system and play the game to win or finish it, […]. Some derive intense pleasure exactly from this kind of 'secondary' element in the digital games they play", for example, the graphics (Mäyrä, 2008: 18).

To be able to play through the Lipke VR bunker the research participants were introduced to the technical parameters of the VR, including the adaptation of the Oculus Quest VR glasses or head-mounted display (HMD) and hand-held controllers to the individual needs of the participants. Furthermore, each participant was given unlimited time to complete the VR experience, taking into account both the limitations of the technical support - the memorial owns two VR glasses - and the participants' previous experience with VR play. Both of these factors affect the speed of play and user confidence in the virtual environment (Bohil et al., 2009). The average playing time of the Lipke VR bunker was estimated to be about 12 minutes. The situational position was so that there were two active players while the rest were the passive players (users who are not actively participating in the virtual environment). During the VR experience, in case of questions, the participants were provided with assistance, thus the mediator or researcher played a dual role in communicating with both the active and the passive player. It was observed that the passive player also maintains communication with the active player. During the VR experience, no physical discomfort or so-called virtual reality motion sickness (also *cyber disease*) was observed, which occurs when users' brains receive conflicting signals from the human sensory organs about moving around the digital environment. Symptoms also include eye fatigue, disorientation, and nausea, which generally negatively affect the user's VR experience (Chang et al., 2020).

3.2.2. Focus groups

To gather impressions of the VR experience and to find out research participants' insights and attitudes towards the digitalization of the difficult heritage, a semi-structured focus group discussion was applied. Focus groups are regarded as one of the qualitative data collection approaches, which usually follow a set of preparation and processing steps. These are - recruitment of the possible research participants, clarification of the place and time of the method, data gathering in parallel with audio typing, and transcription (Creswell, 2014: 243). The focus group was moderated by two researchers, following a set guide of questions, while keeping the interview design flexible and adaptable to the contextual changes. Focus group as a method is often seen as

a complementary procedure, for example, to further investigate data from the quantitative questionnaire (Maxwell, 2018: 6). Similarly, in this research focus groups followed the VR experience and empathy mapping exercise. Such an agenda complies with the pragmatist standpoint, as "both the researcher and the participants bring a set of beliefs to the interview setting, which produces a cycle of acting on those beliefs, interpreting the outcomes of those actions, and updating one's beliefs based on those outcomes" (Morgan & Hoffman, 2018: 254). It is not only about getting information and content but as well the expression and emotions (see Kamberelis & Dimitriadis, 2008). This is particularly important as all the focus groups took place in the Žanis Lipke memorial –a site directly linked to the difficult heritage.

Since the topic of difficult heritage might be targeted as a sensitive and ethically challenging one – depending on the individual beliefs – it is important to understand the group composition and the overall context in which the activity takes place. Focus group as a method is recommended, if the goal is to "understand issues related to consensus and diversity across participants" (Morgan & Hoffman, 2018: 252) and, from a feminist perspective, "to elicit and validate collective testimonies and group resistance narratives" (Kamberelis & Dimitriadis, 2008: 897), particularly in discovering a unique voice.

Because the thesis design follows the grounded theory principles, 4 focus groups took place in 4 months to ensure the iterative and continuous participatory evaluation (see Table 2). Oliver T. Massey (2011: 22) has noted that focus groups in grounded theory do not always comply with the iterative and repetitious principles of the grounded theory and that often researchers are not taking advantage of the previously gathered feedback and results. To ensure compliance with the grounded theory principles, the interview questions were adjusted after the first focus group, as well as, the questions also were determined by the results of the empathy mapping. In general, the questions could be divided into 5 streams –the empathy mapping review, overview of the memorial visit, knowledge of the difficult heritage, attitude towards digital tools for difficult heritage, and concluding remarks for the future focus groups.

#	Date	Amount of people	Age of respondents	Recording length
1# Focus group	Sep 13, 2021	4	19-20	1:05:48
2 # Focus group	Sep 29, 2021	4	19-20	1:04:47
3# Focus group	Dec 11, 2021	6	22-27	00:50:40
4# Focus group	Dec 13, 2021	4	16-22	00:49:02

Table 2. A brief description of focus groups. *Source:* Author

In regards to group composition, it is stated that a smaller group size is considered a more appropriate option for more sensitive topics (Morgan & Hoffman, 2018: 256), thus, the number of people in one focus group reached not fewer than four participants but not more than 6 participants. The gender of the participants is proportionate. When it comes to age structure, the youngest participant was 16 years of age, while the oldest – was 27 (see Chapter 4.4.3.). Such age structure is interesting to analyze from the tourism perspective – the preferences for both generations Y and Z vary [6]. Although both generations could be described as *digital natives* that have an increased demand for mediated products, such as VR, generation Y is more often described as *time travelers* that seek objective authenticity in heritage sites (Heuermann & Chhabra, 2014: 223).

Hereby, the discussion of the composition is also applied to whether the groups were heterogeneous or homogeneous in their nature. Such distinction is important to note, as it directly impacts the data through the research participants' openness and willingness to talk. Two of the focus groups – namely, 1# and 2# groups – can be described as homogenous, since the people knew each other beforehand. Such groups "are traditionally favored in focus group composition to ensure respondents' comfort levels"; furthermore, "[…] participants are more likely to disclose sensitive information in homogeneous groups, where they are talking with peers who understand their shared circumstances" (Morgan & Hoffman, 2018: 255-256). Focus groups #3 and #4 could be seen as mixed, meaning – they have both heterogeneous and homogeneous attributes. Some of the participants knew each other also outside the scope of research, for instance, one pair of friends

[6] Generation Y, also labeled as *Millennial Generation, Digital Natives, First Globals* (~1981-1996); Generation Z, also labeled *Zoomers* (~1997-2012). Not only there are intergenerational differences between these generations but it is also difficult to precise which period could be clasified as belonging to which generation. It also should be noted that "in reality the exact boundaries defining a generation are much less important than the shared historical events and experiences accompanied by social changes" (Eddy & Johnson, 2015: 121), thus the focus group generational composition is seen with mere reservations.

and one pair of siblings participated in the #4 focus group. In this case, heterogeneity can generate differing attitudes and opinions, as they "present an opportunity for a dialog of a different sort" (Ibid.: 255). Of course, it is safe to say that in such a formatted discussion (as a focus group) there is an increased risk of biases and the possibility of someone taking a lead, narrowing down the time for others to express their opinions, and maintaining a set of truths that could not be true to others (see Kamberelis & Dimitriadis, 2008). Hence, a skilled moderator is needed who can ensure equality between the participants.

3.2.3. Participatory visual research methods – Empathy mapping and scale method

Since the actual sites *of* difficult heritage and sites associated *with* difficult heritage can be "contested and awkward for public reconciliation with a positive, self-affirming contemporary identity" (Macdonald, 2009: 1), the personal experiences can be hard to verbalize out loud. Even if living memory is often publicly shared via social media, "performing and experiencing their personal relationship to the past" (Bareither, 2021: 69) – a phenomenon that uses hashtag formats, e.g., #Auschwitz (see Łysak, 2021), and could be described even as *Yolocaust* (see Shapira, 2017) – it might not be a viable option for everyone. This *shift to visual* methodology has also been described as advantageous in research, where the main target audience is children or youth (Buckingham, 2013: 227).

To help research participants navigate their personal relationships with the difficult past, the so-called empathy mapping was applied. Empathy mapping is a methodological tool that is widely used in UX research and human-centered design creation as a way to visualize the thoughts, opinions, attitudes, and needs of the user. Such a method is also widely used in education, for instance, to understand how students experience their learning environment (see Estes et al., 2018), and in the medical field, for instance, to better figure out patients' needs (see Khalil et al., 2020). Generally, the usage of visual and creative methods in social research particularly has grown in its popularity. David Buckingham (2013: 227) notably indicates: "Asking people to 'create' media – to compose their own news stories, advertisements or television schedules, to take photographs, make (or edit) videotapes or build three-dimensional models – can, it is argued, reach the parts that other methods have failed to reach". As an illustration, Joy Sather-Wagstaff (2013) has investigated the memory-work of 9/11 remembrance practices through the use of photography and remembering the site post-visit via photos.

For the empathy mapping, the research participants were given a shared canvas, divided into 4 compartments [7]. In a traditional format, empathy mapping employs 4 approaches – *says*, *thinks*, *does*, and *feels* (see Figure 11). Thus, each section is responsible for a specific sensory faculty or emotions. It is important to note that the compartments should not be seen in a chronological sequence, meaning – all of the faculties are equally substantial (Gibbons, 2018).

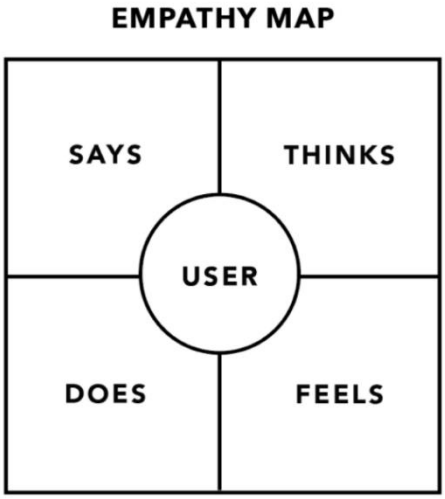

Figure 11. Example of traditional empathy mapping. *Source*: Gibbons, 2018.

Although such a method is mostly used during the design process and prototyping (Ibid.) but given that the final version of the Lipke VR bunker has not yet been developed, it is valuable to be aware of the interaction between the current version of the VR and the user. Research participants filled in the empathy map independently with the help of sticky notes, minimizing the possibility of peer pressure and influence, yet making it a full-scope collaborative reflection. Such a method also shifts the traditional way of doing data gathering, where the research participants are given a bigger agency "in creating representations of their own experiences" (Buckingham, 2013: 228) – empathy mapping can be viewed as one such *participatory research methods*, where the researcher and the researched both fills the fieldwork.

For the purposes of the thesis, the traditional empathy mapping was altered to such questions as *what do I see, what do I hear, what do I think, what do I feel?* (see Figure 12). The research participants were given the task to write their reflections on pre- and post- VR experiences

[7] The amount of compartments and their suggested inquiries, such as *says, thinks, does, feels*, can change, according to the research topic.

to notice any changes in their experience. Since VR is an embodied experience and "the method should follow the object" (Ibid.), empathy mapping can also be considered a multisensory method, following the research object. Such visual methods, according to Kimberly Powell (2013), "have the capacity for rendering elusive or complex forms of experience", including sight, hearing, touching, tasting, and smelling. For example, although, the initial canvas was white, research participants through the use of colorful sticky notes and pens made the whole experience adjusted, changing the aesthetic convention of mapping (Powell, 2013: 316).

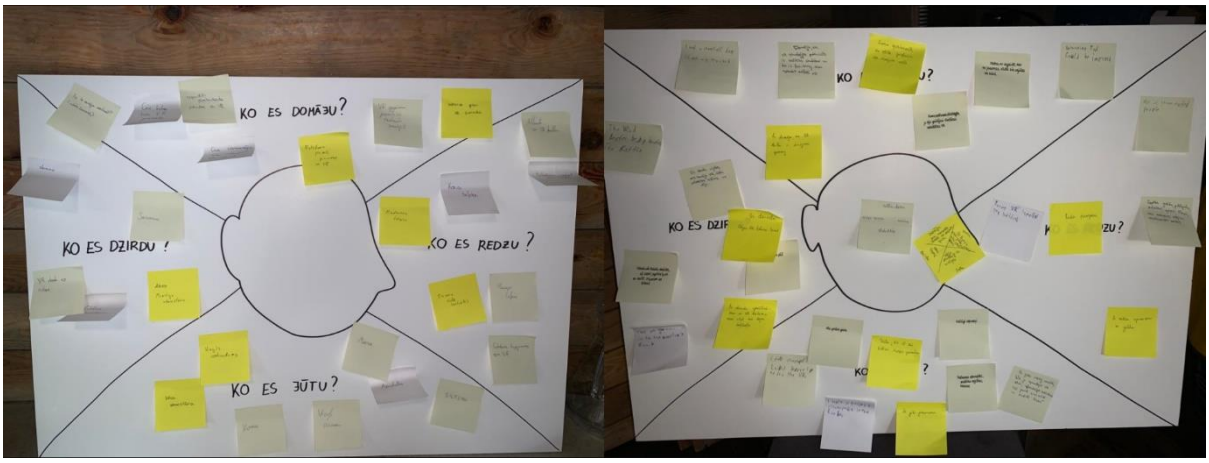

Figure 12. Empathy mapping exercise in two different focus groups. *Source*: Author

Additionally, following the Grounded theory experimental approach, a scale method was implemented in one focus group. This scaling method was given after the VR experience to map out the assumptions on whether the Lipke VR bunker exhibits either a more entertainment or educational nature and whether the Žanis Lipke memorial is an example of a light or dark tourism site, following Stone's (2006) dark tourism typology (see Figure 13). Such a method, similarly to empathy mapping, shows the potential of collaborative research methods, involves "abstract or metaphoric representations of place and space", and encourages research participants to reason and evaluate certain concepts (Powell, 2013: 314-316).

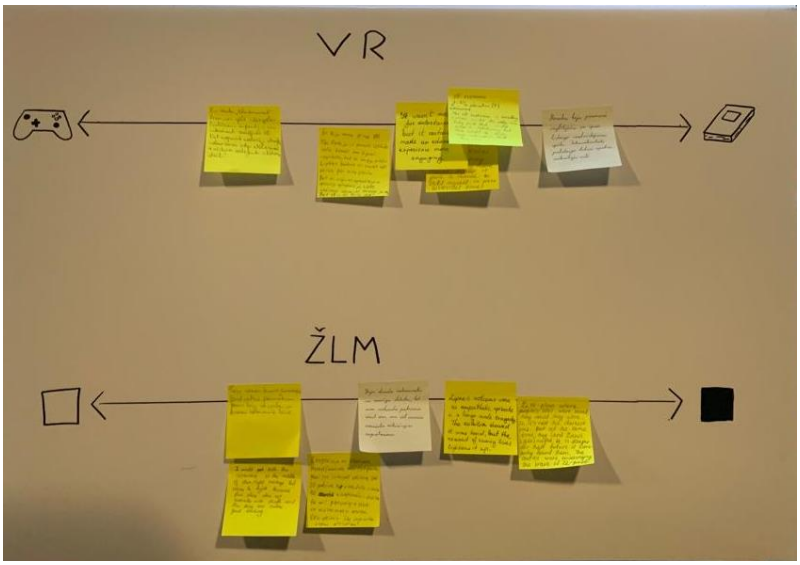

Figure 13. Scale method. *Source*: Author

Nevertheless, there are considerable limitations to such visual methods. Buckingham (2013: 228) notes that such limitations are vaster than the "method should follow the object" conceptualization. He asks: "Are such data necessarily more truthful than data gathered using other approaches? Whose 'voice' do they actually represent? And how are we to interpret or analyze them?" Furthermore, visual methods are still reasoned and debated via written words (Powell, 2013: 317), and "[…] data from visual research cannot be seen as transparent evidence of inner mental processes, any more than language can" (Buckingham, 2013: 241). It is also noted that the claim of participatory visual research methods should not be seen as inherently more unique and empowering (Ibid.) just because they depart from the *traditional* forms of methods, such as interviews and participant observation. To mitigate such considerations, focus groups took place after the participatory visual research methods.

3.2.4. Problem-centered expert interviews

In order to gather a better understanding of difficult heritage and its digitalization, expert interviews were carried out. Interview as a method has a long history in qualitative research, however, debates on the facilitation of an expert interview is a relatively new one (Bogner, et al., 2009: 1). The main issue revolves around the concept of someone being an *expert* – by what standards one is thought to be an expert, what are the characteristics of an expert, according to what a *good* expert can differ from a *bad* expert, and how the *expertness* can be evaluated? The knowledge that the expert bears is characterized as "specific knowledge in a certain field of action"

(Döringer, 2020: 1) that enables one "not only to solve problems but moreover to identify and to account for problem causes as well as for solution principles" (Pfadenhauer, 2009: 82). Hereby, the differentiation between an expert and a specialist lies in the ability to link various kinds of bits of knowledge in a holistic manner (Ibid.). Such a method is of particular importance in taboo or arduous topics (Bogner, et al. 2009), such as difficult heritage.

Alexander Bogner and Wolfgang Menz (2009) have distinguished three types of expert interviews in accordance with their epistemological grounds – *the exploratory expert interview* which focuses on getting contextual information about the unresearched or remote topic and structuring the complexities; *the systematizing expert interview* focuses on getting as much information as possible, especially in technical and processual knowledge fields; *the theory-generating expert interview* serves as an entry-point to overall data gathering process. The last type is closely linked to what Stefanie Döringer (2020) calls *the problem-centered expert interview* (originally developed by Witzel, 1982) has a dialogic-discursive structure, meaning - "it is meant to be an egalitarian dialogue between the interviewer and interviewee […]" that "draws upon an interview guide that comprises a narrative beginning in the first phase and precise follow-up questions in the second" (Döringer, 2020: 4).

Both the theory-generating and problem-centered expert interviews can be used in the grounded theory approach. However, as the problem-centered expert interview "contributes to a deeper understanding of a social field of action and thereby supports theory-building" and it "highlights the individual perspective of interviewees and provides a supporting interview design combining an open narrative beginning with a topical guide" (Ibid.: 11-12) more than the theory-generating approach, the problem-centered expert interview approach was applied. This also goes along with the postmodernism impact of the contemporary methodologies. Michael Ian Borer and Andrea Fontana (2014) have expressed the need for new forms of communication between interviewer and interviewee. Not only the focus is put on the electronic modes of communication, for example, e-mail [8], as a way to facilitate an interview but also the collaborative aspect between the interviewer and the respondent, stating: "Interviewers have become more concerned about

[8] The authors furthermore state that such digitally-abled interviewing "[…] takes away one of the traditional strengths of qualitative research, which is perennially based on the claim, "I saw it, I heard it, I was there" (Borer & Fontana, 2014: 56). Nevertheless, they appraise the advantages of what such virtually mediated conversations can bring to research.

issues of representation, seriously engaging questions such as “Whose story are we telling and for what purpose?” (Borer & Fontana, 2014: 46). In this manner, such a method implies the ethical implications - notably important when dealing with difficult topics.

Altogether, 7 expert interviews were facilitated in a period of 6 months (see Table 3). One interview was managed in a person; others – were via digital means. Since the aim of the expert interview method is to investigate the in-depth knowledge, problems, and recent developments around the topic of difficult heritage and its digitalization, the experts come from a wide range of disciplines. The experts - what Bogner et al. (2009: 2) call *crystallization points* - come from fields such as cultural heritage, difficult heritage, place-based memory, museology, ludology, digital user-experience, digital innovations, holocaust education, and citizenship education.

Expert	**Position**	**Fields of interest**	**Country of representative**	**Interview date**	**Interview format**	**Interview length**
Eerika Koskinen-Koivisto	Ph.D., Senior Researcher	Ethnography, materiality, place-based memory	Finland	01.09.2021.	In-person	1:50:56
Jan Erik Dubbelman	Former Director of Education and International Outreach at the Anne Frank House	Holocaust education, memory	Netherlands	18.01.2022.	Online	01:17:48
Luc Bernard	Video game designer, Founder of Voices of the Forgotten	Educational videogames, historical videogames	Los Angeles, the United States	24.01.2022.	Online	01:41:24
Victor Agulhon	VR producer, Co-founder of Targo	Storytelling, virtual reality	France	25.01.2022.	Online	00:57:33

Expert	Position	Fields of interest	Country of representative	Interview date	Interview format	Interview length
Doyle Stevick	Ph.D., Associate Professor	Holocaust education, education policy	South Caroline, the United States	01.02.2022.	Online	00:53:45
Cory McLeod	Creative Technologist at Fallon	Immersive technologies, historical narrative	Minneapolis, the United States	11.02.2022.	Online	00:52:17
Łucja Piekarska - Duraj	Assistant professor at the UNESCO Department for Holocaust Education	Social memory, identity, museology	Poland	02.03.2022.	Online	01:16:25

Table 3. A brief description of interviewed experts. *Source*: Author

The countries represented include the United States, Finland, the Netherlands, France, and Poland (see Figure 14).

Figure 14. The states represented by the interviewed experts. *Source*: Author

En masse, the interviews varied from approximately 52 minutes to 1 hour and 50 minutes, resulting in 8 hours and 50 minutes in total length. One expert interview took place in person at

the University of Jyväskylä, Finland; the rest were conducted online. The transcription of interviews was done using the transcription software "Listen n Write" and an in-built live transcription program in "Microsoft Teams".

3.3.Research ethics

Methodologically, the researcher faces various ethical challenges, especially in qualitative sciences. To navigate the field of **researcher's positionality and reflexivity** in a more principled manner, the "Ethical Guidelines for Good Research Practice" by the Association of Social Anthropologists (1991/2011) (further in text: ASA) were chosen as the ethical backbone of the study. For research analysis and interpretation are largely influenced by the researcher's epistemological or ontological grounds, the researcher's positionality should be considered.

Positionality is seen as "an individual's world view and the position they adopt about a research task and its social and political context" (Holmes, 2020: 1). It can be influenced by one's ethnicity, social class, status, religious affiliation, political allegiance, gender, sexuality, and so forth. The reflection of one's positionality is inextricably linked to the context-aware approach. Here, the underpinning is that "without reflexivity on the part of the researcher, their research may not be conducted ethically" (Ibid.: 3). The three main issues that impact the positionality (and *vice versa*) concern the relationship with the research participants, the project colleagues, and the experts.

The pursued CGT – constructivist grounded theory – implies that the "researchers, not participants, are obligated to be reflexive about what we bring to the scene, what we see, and how we see it" (Charmaz, 2006: 15). As such, the author is aware of their professional position and the context in which the thesis is carried out. The ASA guidelines emphasize the need for clarifying each role, rights, and obligations, particularly to maintain the professional and scholarly integrity: "Research can never be entirely objective - the selection of topics may reflect a bias in favour of certain cultural or personal values; the employment base of the researcher, the source of funding a various other factors may impose certain priorities, obligations and prohibitions" (ASA, 1999/2011: 9-10). All parties involved got acquainted with the purposes of the thesis and applied methods, sources of funds, and institutional aims. This part is of crucial importance, as the thesis is carried out within the project "Difficult Heritage: Between the Memorisation and Contemporary Tourism Production and Consumption. The Case of Holocaust Sites in Latvia" (MemoTours)" and its implementer is the Institute of Philosophy and Sociology of the University of Latvia.

Furthermore, the positionality is concerned with not only the relationships with research participants but with colleagues and the discipline itself. The focus groups and empathy mapping exercises were done collaboratively with two colleagues from the project. In such circumstances, the involved researchers have a reciprocal responsibility not only concerning matters such as participants' involvement in research but also "division of labor, responsibilities, access to and rights in data and field notes, publication, co-authorship, professional liability, etcetera" (Ibid.: 8).

Furthermore, because the project is carried out in close collaboration with the Žanis Lipke memorial, the positionality with the memorial is structured from both the professional and the gatekeeping perspectives. Not only the researcher must be "wary of inadvertently disturbing the relationship between subjects and gatekeepers since that will continue long after the researcher has left the field" (Ibid.: 7) but also the very access to the field was granted by collegial connection. Here, the researcher has to be cognizant of the power relations happening within and outside the research. Not to mention, as all of the expert interviews occurred outside Latvia – even just via digital means (except one) -, such a cross-national perspective implies special ethical and political matters. The ASA (1999/2011) stresses that "personal and national disparities in wealth, power, the legal status of the researcher, political interest and national political systems" (Ibid.: 8) can impact the data and interview scope.

These considerations were augmented by the fact that the thesis topic itself can be seen as ethically challenging – the difficult heritage evokes the discussion of past abuses, human rights violations, collective trauma, political or social oppression, and civic remembrance. In a similar manner, the digitalization of difficult heritage– through videogames and VR – may provoke strong emotions, since it involves the challenges of *gaming the Holocaust paradigm* (see Kansteiner, 2017: 311). Therefore, the researcher should bear in mind the individual responsibility towards participants, methods, content, wider society, and the very behavior of the researcher in the field and post-field (see Chapter 4.4.4.).

Since the grounded theory implies an iterative approach, **the recruitment process** took various stages at various times. Although the theoretical sampling – the golden standard in the grounded theory for data collection - is not applied merely to extend and saturate the data, the researcher can "return to the field and generate further data purposively with the developing category or concept in mind" (Timonen, et al., 2018: 8). Thus, the recruitment was done extensively, spaning for months of the time. This was done not only to validate the existing data

but also to continuously find emerging theoretical categories and themes for the data analysis (see Charmaz, 2006: 99-102).

The iterative recruiting process could be divided into two parts – recruitment for the focus groups and recruitment for expert interviews. As mentioned before, the thesis was carried out within the project "Memotours", thus the site for focus groups data collection was provided by the Žanis Lipke memorial. This is what John W. Creswell (2014: 239) describes as a *purposefully selected* site, where the research is taking place and where the research participants are interviewed and observed. The collaboration is important to note because it impacted the recruitment process – the first focus group was recruited with the help of colleagues from Žanis Lipke memorial, indicating an already existing correspondence with the first focus group. In this way, Žanis Lipke memorial worked as a *local gatekeeper*, opening up the local actor network for possible research participants. The memorial also offered a suitable meeting place, making the recruitment process easier for the place was already chosen. The next three focus groups were similarly recruited by *passing information* from the researcher side – this was done via the use of e-mail notices, where after the successful recruitment of one person, the information was often shared with the person's peers. The recruitment process for the experts was done through sending electronic notices to their university or company-affiliated e-mails. Two of the experts, Cory McLeod and Łucja Piekarska – Duraj, were recruited with the help of an already existing affiliation with either Žanis Lipke memorial or the Jagiellonian University; whereas Eerika Koskinen-Kovisto was recruited on the basis of short-term mobility program FORTHEM that made it possible to facilitate the interview in-person. The iterative nature of recruitment within the grounded theory is noticeable also in the expert interviews, where the recruitment happened with certain pauses to cyclically alternate between the theory and already existing data.

It should be noted that the selection process for the focus groups interviewees did not demonstrate possible ethical threats – according to Creswell (2014: 223) certain characteristics, like precise age, gender, ethnicity, job position, educational level, skills, hobbies, for the selection can open up a predisposition and susceptibility in the outcomes. Thus, to ensure a more wide range of probability in the outcome, only the age group was selected as the main characteristic for the focus groups. For the expert interviews, however, the selection characteristics had to be more precise. As noted by Döringer (2020: 6-7), experts are the *key agents* in a particular field, which, in this case, is related to past atrocities, difficult heritage, Holocaust education, and digital

initiatives for difficult heritage. Thus, the experts have certain social relevancies in their fields. This goes together with the notion of the grounded theory focusing on "gaining insights or constructing knowledge about phenomena, not on justifying preconceived ideas" (Matteucci & Gnoth, 2017: 50), thus it was ensured that the selection process also involved experts from various subfields of difficult heritage.

The recruitment, however, will always be tied to the question of who is excluded from the data collection process (see Sather-Wagstaff, 2013). Thus, in research based on paradigms of qualitative sciences, the ethical concerns emphasized those who were, in fact, recruited and included in the methodology.

On account of "[…] the precedent set by the Nuremberg Trials and the constitutional laws of many countries inquiries involving human subjects should be based on the freely given informed consent of subjects" (ASA, 1999/2011: 3), the thesis followed strict **confidentiality** and **anonymity** grounds. The focus group participants were informed not only about the intricacies of the research itself but also about their legal rights to decide whether to participate or not in the research. All of the focus group participants, no matter their age, were given the opportunity to read a printed-out statement about the research, the degree of anonymity, and, in case of agreement, had to sign the **consent form**, issued by the researcher. Because some participants were under the legal age of Latvia, they are accounted as a vulnerable population (Creswell, 2014: 132), thus the consent was signed by their parents. All of the participants agreed for the focus groups to be recorded. The consent was asked, albeit not in a written form, from the experts, as well. The verbal consent for using the interview data was given after the consent was given for recording the interview. It is crucial to note that consent should be given before the research starts by virtue of "consent made after the research is completed is not meaningful consent at all" (ASA, 1999/2011: 3). All of the research participants from both focus groups and expert interviews agreed to the issued consent form. Furthermore, all of the focus group participants are anonymized, insofar as only their age and sex as characteristics are used in this research. The participants were given randomly selected pseudonyms. Each expert gave the consent to use their full name, professional positionality, and the current state of residency. This indicates the motivation for an expert to participate in such research, perceived as "the desire to help "make a difference" – no matter how small" (Bogner et al., 2009: 2).

The argument "if guarantees of privacy and confidentiality are made, they must be honored […]" (ASA 1999/2011: 4) is seen from the deontological perspective (also referred to as Kantian ethics) that "it is a right against being used by another for the user's or others' benefits" (Larry & Moore, 2021: n.d.). The deontological approach furthermore implies that there is no virtual benefit to violating such rights. Yet, because such an informative approach includes the notion that consent is not a one-time event but rather a process, thus a renegotiation is acquired. The participants were reminded of their rights before, during, and after the research was taking a place.

To mitigate any **long-term implications** after the research, researchers "should recognize that their obligations to the participants or the host community may not end (indeed should not end, many would argue) with the completion of their fieldwork or research project" (ASA 1999/2011: 5). One major consideration that was made known to the focus group participants is the probable participation in the next Lipke VR bunker prototype testing sessions. All of the participants agreed to the possibility of contacting them sometime in the future, as the due date for the next prototype iteration is not yet known. However, the research participants – both focus groups and experts – have the right to exit the research at any given time. For when the next prototype will be ready, the consent, including the consent forms, shall be revised. Anonymity and confidentiality must be continuously maintained.

It also should be noted that sometimes the communication with the experts continued even after the interview took place – such communication involved sharing information about academic studies, related to the thesis, possible future collaboration, and more implicit biography of Žanis Lipke, and ways how to help Ukraine. Such a seemingly informal shift to the previous formal introduction is not considered abnormal; in fact, it can be celebrated, as long as such future communication does not violate any previously stated responsibilities, rights, and outlooks of the research (see Borer & Fontana, 2014: 45).

The long-term implications, moreover, include the way how data is maintained or even shared with a wider public or other interested parties (see ASA 1999/2011: 3). As long as no conflict of interest arise or long-term ramifications threaten the interests of the research participants and colleagues, "anthropologists should use the possibilities open to them to extend the scope of social inquiry, and to communicate their findings, for the benefit of the widest possible community" (Ibid.: 9). It is anticipated that the thesis findings will embark on future publications,

as some preliminary results have already been used for both local and international conferences and dissemination.

3.4.Data analysis for the CGT: Theoretical sampling and coding

To display the data analysis process and the stages of applying the CGT to a greater degree, a diagram was made (see Figure 15). It outlines the very start of the research, concerning the first

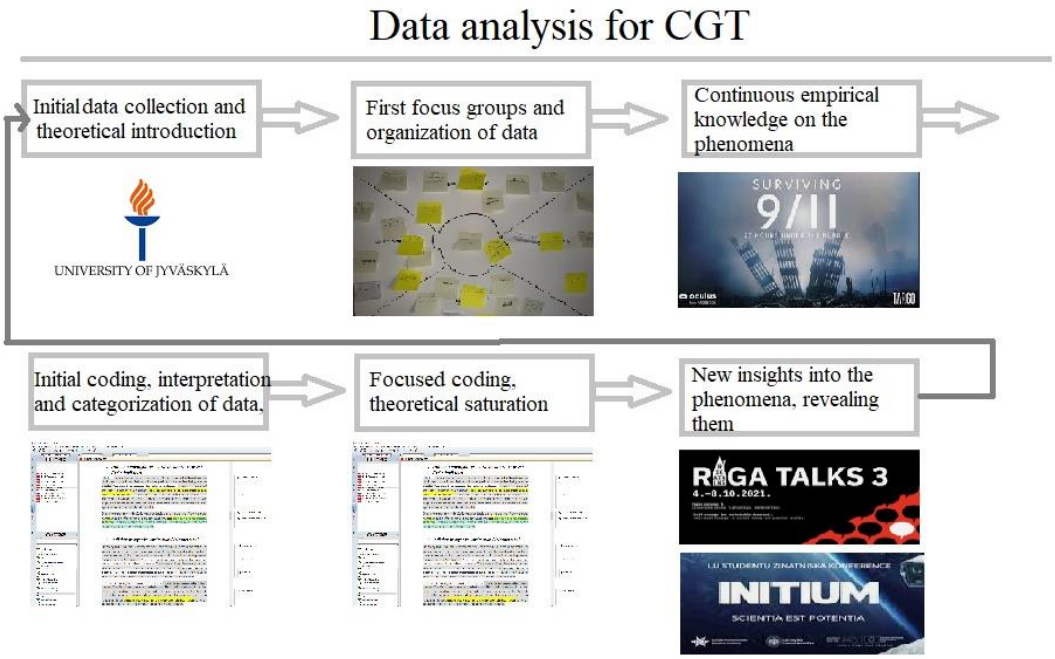

Figure 15. The research process for CGT. *Source*: Author

fieldwork and theoretical overview; the middle part of the continuous, iterative data gathering and analysis; the end, where summary, new relations, and theoretical propositions and suggestions are revealed.

Since the study follows the grounded theory guidelines, the "constant comparison of data" is at the "heart of this cyclical research process" (Matteucci & Gnoth, 2017: 50). To ensure the repetitive nature of data collection and its comparability, **the theoretical sampling** (also *theoretical saturation* but not to be confused with *purposive sampling*) was implemented. Forasmuch as grounded theory is an inductive *constellation of methods*, "grounded theory calls for engaging in analysis throughout the research process and using the emerging results from that analysis to guide further data collection" (Morgan & Hoffman, 2018: 261). The theoretical sampling suggests the researcher re-enter the field on an iterative basis and that "new research

participants or information are purposefully sought based on the findings of previous data analysis" (Matteucci & Gnoth, 2017: 5). Such perpetual comparison of the existing data, for which the progress of the study is interdependent, allows the researcher to guide the data collection and analysis. Charmaz, while describing the differences between various modes of data sampling, states that "initial sampling in grounded theory is where you start, whereas theoretical sampling directs you where to go" (Charmaz, 2006: 100). Theoretical sampling not only suggests seeking additional data but also filling gaps in the existing ways of methods, for instance, some expert interviews and focus-group questions were revisited to ensure the saturation of the scope. In a similar manner, the theoretical sampling can be applied in the early and later stages of the study, however, such flexibility manifests only when there are some exploratory categories to investigate. After the first expert interview and initial theory review, the main categories were already established, which then were elaborated, specified, and probed. The scale method was, as well, implemented after noticing the potential of filling the informational gaps.

Alike informed consent, theoretical sampling is continuous. This embarks a limitation that might not be compatible with the empirical world: "Textbook explanations of theoretical sampling seldom take into account interactional reciprocities and situational demands. These technical explanations ignore relationships and reciprocities […]. You may not be able to dash in, grab the needed data, and dart back to your desk" (Ibid.: 110). It would be dubious to say that the ongoing Covid pandemic and the horrid war in Ukraine do not inflict restraints on the data collection and research participant recruitment. Stone himself reflects upon his non-strict use of theoretical sampling in the study of dark tourism in contemporary society. Instead, "by adopting the broad principles and orientation of grounded theory, data collection, analysis, and eventual theory stand in close relationship to one another" (Stone, 2010: 164). Nevertheless, constant comparison – the cornerstone of GT - was ensured.

The **coding process** ensures the skeleton of the analysis (Charmaz, 2006: 45). Rather than using the coding stages of CGGT and SGT, such as open coding, selective coding, and theoretical coding, the CGT – the constructivist grounded theory – applies two complementary modes of data classification (see Rieger, 2018: 4). The first phase of coding – *the initial coding* – seems self-explanatory. It is an open-ended reconnaissance into the first batches of the data. Charmaz suggests focusing on the various contexts, from which the data was gathered, whose voices were researched, and whether there is a theoretical signifier. Yet, "[…] initial coding should stick closely to the

data" and "should spark your thinking and allow new ideas to emerge" (Charmaz, 2006: 47-48). Thus, the initial coding should stay susceptible to notice both the possible theoretical directions and any preconceived categories. Such coding can even happen during the transcription process.

Yet, in order to make the initial analysis *fit* and *relevant* (Ibid.: 54), the focused coding shall be applied, alongside the theoretical sampling. "While engaging in focused coding, we select what seem to be the most useful initial codes and test them against extensive data" (Ibid.: 42), meaning – after the initial coding has been done, the researcher pinpoints the most frequent and reoccurring codes, which later is used to "theoretically code all future data" (Rieger, 2018: 4). The focused coding indicates the most relevant codes that are also both more conceptual and suitable for forming abstract categories. As such, what at first appeared as a narrative about education *per se*, during focused coding appeared to have a nuance of civic action and even potentiality of extremism, if applied imprudently The number of codes also varied throughout the coding process – at first, only 10 codes appeared, such as difficult heritage sites, learning through VR, public memory institutions, virtual environment. Later, the initial codes were complemented by an extended network of focused codes, such as politics of remembering, commemoration, dark tourism, embodied experience, and so on. The linkages between the codes also appeared during the focused coding (see Figure 16). For the purposes of coding, the qualitative data analysis and research software "Atlas.ti" was used.

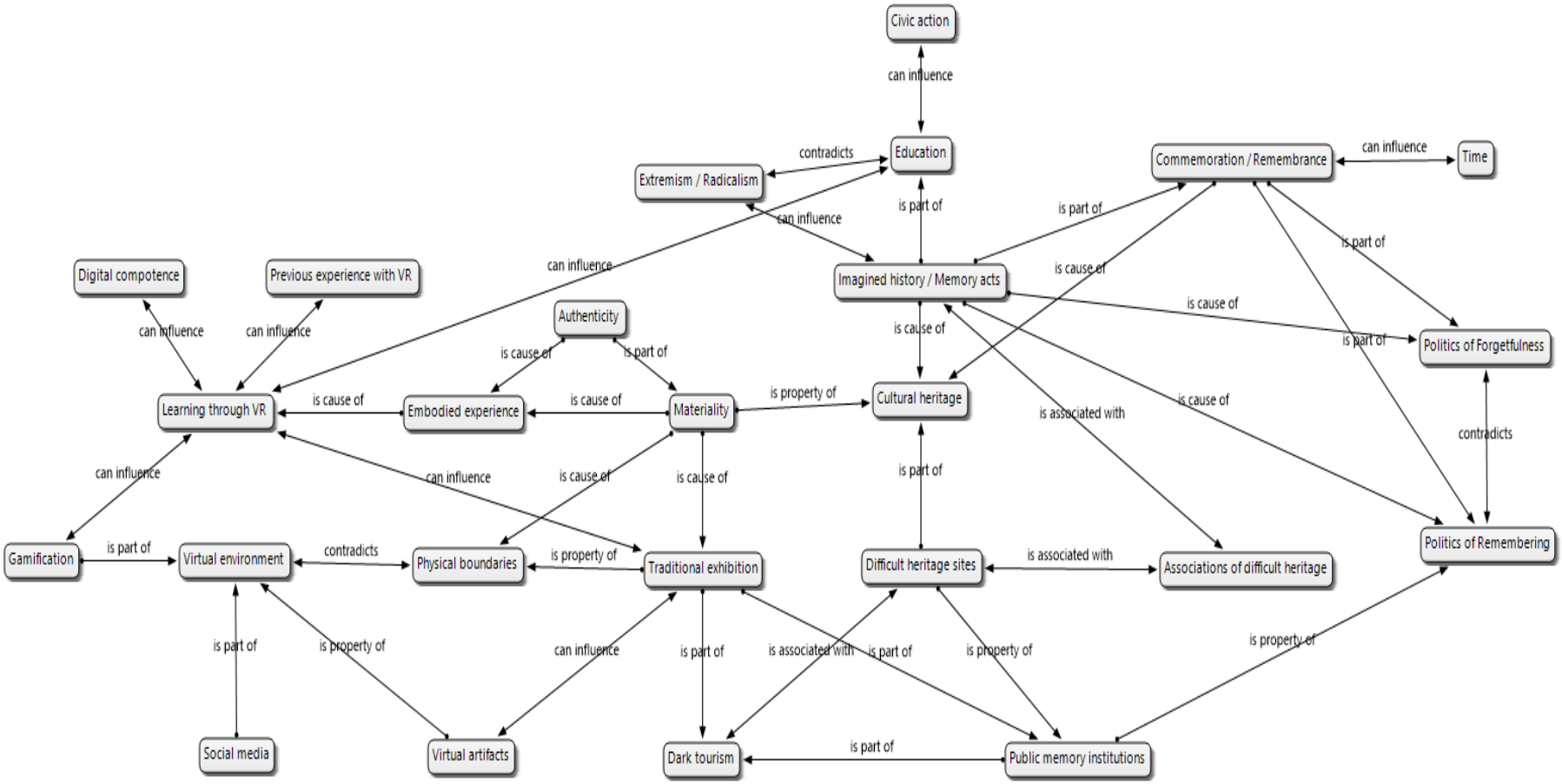

Figure 16. Network view after initial and focused coding. *Source*: Author

4. Digital Depiction of the Difficult Past

4.1.Putting VR in the Lipke bunker

To conceptualize the Lipke VR bunker within the context of difficult heritage and its digitalization, one shall discern the various underlying, subsidiary, and prodigious themes that impact not only the user experience but also memory practices and youth's understanding of the difficult past. By paraphrasing Macdonald (2009), if difficult heritage sites are the tangible reminders of the past, then digital tools, such as VR, are the intangible mediums of reminding about the past. In this way, one could consider digitality as *means* and not an *end*. As noted by Doyle Stevick, an associate professor at the University of South Caroline: "We should use the best potential of both the digital and the real, without putting them against each other". Yet, the dissonance lies in the nature of how such merciless events, such as the Holocaust, can be represented and validated through the digital medium. Heritage itself is intrinsically antagonistic, tied to the issues of representability and validation (see Smith, 2006: 296), and the discussions around it are often ambiguous. In such a frame of reference, discussions about digital initiatives yield an additional layer of ambiguity. One could argue, that the digitalization of the difficult past is a layered phenomenon – how the difficult heritage, in itself, presenting a predicament, can be depicted through a digital medium without losing the barriers of authenticity, ethics, and solidarity with memory? This yields another layer – can heritage be innovative in relation to present-day?

Whilst the digital initiatives are seen as means of engaging with the past, they also offer an alternative space for post-memory practices. The situation to transmit as much information about the difficult past is more acute than one might think - the younger generation is expecting new and interactive sources of information, and memory institutions need to be prepared for this demand. In the words of Jan Erik Dubbelman, the interviewed expert and the former director of Education and International Outreach at the Anne Frank House, it is a societal obligation to reach out to the eyewitnesses and make their stories accessible, insofar as the employed technology does not hinder but rather liberate their experiences. Yet, the context in which the stories are told digitally should be scrutinized, as much as the contexts in which the public memory institutions construct their exhibitions. Otherwise, the representational frameworks irresistibly will be flawed. "Holocaust teaches us what happens when hate goes too far", implies Luc Bernard, interviewed videogame producer, and such a message can be spread via digital initiatives.

Both the expert interview and focus-group data suggest four key rudimentary themes concerning digitally depicting the difficult past – that of, time, space, immersion, and engagement of the virtual environment. Moreover, the Lipke VR bunker from the youth's perspective was described from various perspectives, for instance:

- As something contrary to the material, *traditional* ways of displaying information: "What I liked is that, not like in regular museums or [school] classes, here [in VR] you really notice every detail, you hear every word and you feel every emotion. […] It helps you remember the information better" (Erik, 18)[9];
- As something complementary to the material, *traditional* ways of displaying information: "From a historical point of view, it certainly gives a different experience of how it all happened" (Amelia, 18); "The virtual reality and the real reality somehow connected" (Teodors, 18);
- As something *state-of-the-art* experience: "I was surprised that it seemed so realistic that I was actually in that room [bunker]" (Augusts, 19); "I thought – nothing personal – but I thought it wouldn't be so advanced" (Rita, 18);
- As something that needs technical guidance, if a person has no previous experience with VR: "The first moment I was in that environment, I was dumbfounded, and I didn't understand what and where. But then I realized that you have to push on those little steps and then it's interesting to look around" (Amanda, 25); "I think that if I had to do this myself, I would probably give up quickly" (Daniels, 22);
- As something not-manufactured: "This didn't seem like done simply because it should be done" (Amanda, 25);
- As something seemingly completed: "For now it is enough to do go through the bunker [...]. I don't think there could be a better one or how could it be improved" (Ina, 25);
- As something that can lack the wholeness of historicity: "I felt it was not enough [*mazuma piegarša*]. I think that this [VR] could be an excellent example of imitating the historic circumstances, but it is not possible to imitate that much" (Laima, 26).

It seems there are numerous underlying themes of the Lipke VR bunker, relating to education, digital competence, imagined history, overall historical narrative, VR appropriateness,

[9] During the study, all focus group participant names are pseudonymized.

VR relation to the traditional exhibitions, issue of embodied experience, senses, interactivity, consumption, and so on. These themes are scrutinized throughout the study.

4.2.Time in relation to heritage

One of the key parallels throughout the focus groups is the puzzlement of time. No distinct differences in understanding time in relation to heritage between the generations – Y and Z – were marked. As noted by Rita (18): "When I hear the term [heritage], I think of some old things but it doesn't have to be 200 years old. Okay, at least 50 years […]. As time moves on, and something that used to be our present has become a kind of cultural heritage". The time aspect has a cultural significance. It also seems there must be something for an event or object to become a heritage, acquiring a symbolic value: "What divides the cultural heritage from something that just existed?" (Teodors, 18). Overall, the connection between heritage and time for all of the focus group participants was equivocal, yet almost all were certain that heritage is related to something one might describe as either old, time-honored, or something *beyond their living memory*. This can form the time-space distance between the past, where something worthy called a heritage is seemingly *produced*, and the present, where the youth is trying to make a sense of it.

Sometimes the time aspect becomes more graspable in relation to their family histories. Augusts (19) notes that as he passes the Memorial to mass deportations to Siberia at the Tornakalns train station he is reminded of his great-grandfather and his destiny during the Second World War. This is a striking example of the *memory act* in action – he forms an individual interpretation of the past through acknowledging the mass deportations that happened outside his living memory. In contrast, an event that has fundamentally changed the European memory-scape, like the Holocaust, was actively tried to be forgotten, even if it happened in the living memory of the people of the past. Jan Erik Dubbelman describes the reason why the diary of Anne Frank was stalled:

> "When Otto Frank, Anne's father, wanted to publish the diary… after a lot of hesitation because he was so ambivalent. Also traumatized […] His friends pushed him. Most publishers said that they were not interested [in publishing], and the most used reason not to publish was because it [Holocaust] was too long ago. In 1947! [*Laughs*]. As it is no longer relevant for today's world!"

These examples show the ambiguous nature between time and the heritage-making process, and consequently – between the politics of remembering and forgetfulness. This is more a question of

not *what* people remember and forget but *how*. Interestingly, Victor Agulhon, the interviewed VR producer and developer of the "Surviving 9/11" VR experience, links heritage to the remnants of media representations:

> "We might be wondering about the Second World War, but, you know, First World War feels even more remote for us, because we have fewer media about it. And I'm not even talking about the war of like 1870 where it's, you know, it's like totally forgotten".

This could refer to the notion of *historical memory*, where some historical events become historical artifacts, losing some sense of pertinence (see Halbwachs, 1980). For embodying the historical memory, material remnants should exist, like photographs. Furthermore, such periodization - as if the Franco-Prussian War has not left any material representations from 1870 - can diminish the horror and *darkness* of the site (see Casbeard & Booth, 2012: 4). Arguably, it can also exacerbate "deviant leisure experience(s)" in sites "with no chronological or short chronological distance" (Heuremann & Chhabra, 2014: 214). Something so far from the current living memory can have an impact on how it is remembered today, as the gray gaps are left for untamed interpretations, and often – not for the good of the dead. For this reason, the idea of having preserved media from the past, like photographs and video materials, constitutes the past event as *ad infinitum* – an analogue version of the digital afterlife (see Lagerkvist, 2017). Television and radio have been prominent mediums of the past, encapsulating life in pixels and sound waves. Similarly, the diary of Anne Frank, while written 80 years ago, is being re-published, digitalized, and displayed through digital mediums – such activities leave *digital traces* in the name to keep her memory alive on the Internet. "History, it appears, is always playing 'catch-up' with the modes of its representation and dissemination" (Hoskins, 2003: 8) (emphasis in original), and the various digital means stipulate the meaning-making of the difficult past.

While to directly associate heritage with present days is challenging, insofar as the youth heritage is something that becomes symbolically valuable after some time, there is a consensus that *linking* the past to the present can be done with a modern, innovative tool. It is not that VR or any other tool *makes up* the heritage but rather it makes the user feel, envision, and interpret the events that are anchored in the time dimension. To this extent, immersive technologies, such as VR, AR, AV, and MxR, can become time-traveling mediums. For the research participants, the

possibility to see the bunker as it was during the Second World War reveals the connection they have with it today:

> Emma (18): "It [VR] helps to understand it better. More clearly."
> Rita (18): "… because you are there."
> Teodors (19): "[VR] visualizes something that happened, and then it all connects to the heritage thing, and then you see it truly."

Such time-traveling digital mediums can transfer the user to a time or location that otherwise would be impossible to visit and experience first-hand. Even so, VR can be a great tool for conceptual understanding of time and its scale and linking it to other contextual frames.

4.3.Imagined space

Inasmuch as discussion on time preoccupied the research participants, so did discussions on imagining the bunker. The concept of *imagined space* coincides with the collective memory, performed, imagined, and "remembered by those who lived [the past]" (de Saint-Laurent, 2018: 149). And yet this shared consciousness of the population, if the difficult past is to be remembered, shall not be monopolized, excluding the new forms of imagining.

Overall, there is a consensus that linking the past to the present can be done with a modern, innovative tool, marking the distinction between the *real* place (the bunker where Žanis Lipke hid the Jews), the *representation* of place (through public memory institutions, like Žanis Lipke memorial), and the *creation* of the place (bunker in VR that no longer exists). Similar categorization can be applied to the "Anne Frank House VR" and "Surviving 9/11", where both VR employ the virtual environment to show the real places – the Secret Annex and the World Trade Center -, hypothetically reconstructing the surviving shreds of evidence.

In various academic discussions, emphasis is put on the polemic on whether VR can imitate physical reality *fully*. On one hand, the digital mediums "will never replace the *in situ* visit"; on the other hand, "VR offers more than a replica of the real context" (Fassi et al., 2016: 141-142). There is no denying that the Lipke VR bunker merely replicates the original bunker, adding a glimpse of the massive historical narrative that the Holocaust manifests. Furthermore, the only existing example of how the bunker existed can be found in the child's artwork – Zigi's, Žanis Lipke's son's, drawing of the bunker itself is also an interpretation of the physical reality. Yet, there can be a sense of liberation in accepting the intrinsic *reconstruction-esque* nature of historical

interpretation, also in digitalization. A useful analogy for imagined space was shared by Łucja Piekarska – Duraj, assistant professor at the Jagiellonian University:

> "In one Holocaust museum in Berlin, I think, there were some constructions [where] only kids are allowed to go through - it's supposed to represent that there were some spaces that were limited [during the Holocaust] and the access was limited only for the Jews. In this case adults. It imposes restrictions that are of non-rational nature. You can't go there because that's just like it is".

There are different levels of reconstructing the difficult past, not only through digitality. Such installations demand the visitors to feel the space in its aberrant limitations. Disabling them from accessing some parts of the site, concurrently forces the visitors to conceptualize the past in spatial dimensions. And since the reflective processing happens through attentive decision-making, the lack of room to employ the decision can result in emotional outcomes. Cory McLeod, a creative technologist who participated in the Lipke VR bunker development, even states that "what I don't see is as important to the story as what I see".

For the research participants, seeing both interpretations of the bunker – in the traditional exhibition and VR – allowed them to *imagine* the space *as it was*. The imagined space – either virtual or physical, fictional or actual - can evoke an unanticipated potentiality for interpreting the difficult past. It is through such imagination that people make sense of history for the sake of its continuity. Eerika Koskinen-Koivisto, a Senior Researcher at the University of Jyväskylä, summarizes such an argument:

> "It's incredibly difficult to construct a logical narrative of an experience that is extremely traumatic or extremely cruel. So they're [digital means], even though imagined, fiction is important - fiction can actually do a lot of it."

Although some digital depictions can be merely imaginative extrapolations, removed from the actual material reminders of the past, the unanticipated potentialities can leave space for awareness. And it goes beyond the bunker itself: "[…] the fog, that grey shade over all the houses, that emptiness, that ambiance, all of that, VR does that very well" (Gustavs, 16). The imagined space evokes an emotional immersion into the virtual environment, which then can reinforce the connection between the past and the present.

4.3.1. Materiality and locational authenticity in VR

To facilitate the authenticity of virtual experience, it is crucial not to reduce the credibility of the story it tries to convey. For the Lipke VR bunker, the credibility aspect is shown both from the locational authenticity and the materiality aspect.

There is a sense that VR about difficult pasts should be made available on the premises where the event happened. This is not the case for either of the "Anne Frank House VR" and "Surviving 9/11" – these VR experiences are made available to download on the Internet. The developer of "Surviving 9/11" from Emmy-nominated studio "Targo" – Victor Agulhon – supports the argument that such digital depictions of the difficult past should be made mainstream, conventionally attracting as much audience as possible and making the story more visible. This example of VR conveys the story of a survivor, Genelle Guzman-McMillan, who is the last person rescued from the Ground Zero rubbles. Her testimony, as incomprehensible and unimaginable, is filled with gratitude and strength. In the VR she shares her story:

> "I think it is extremely difficult to […] identify or relate to people [the survivors], and I think the chance of sitting face to face with a survivor and having discovered that feeling, like you're having this conversation with [her], creating this connection, this intimacy - it is something that VR allows that other platforms don't really represent as well" (Victor Agulhon).

Lipke VR bunker, on the other hand, still can be reached only on the premises of the memorial. Yet, there is a plan to offer the VR to the "Oculus" video game platform in order to, similarly to "Surviving 9/11" and "Anne Frank House VR", make it publically available. Thus, it is compelling to decipher why research participants expressed the need for having the material site, alongside the VR experience. This can be based on the complementary aspect of materiality and virtuality - that through VR, the Žanis Lipke Memorial exhibition became more perceptible, and through the examination of the Žanis Lipke Memorial exhibition, the VR became more perceptible.

It also seems that the proximity of the physical site is important in order to get the connection between the past and the present, particularly when dealing with difficult heritage. Amanda (25) states her experience: "As we walked around the exhibition, I imagined how much fear [the people] had. And in VR it all made sense". Daniels (22) and Bruno (17) explain that due to the absence of the physical, material site the whole story shown in VR would not be fully revealed.

The locational authenticity is embedded in the actual site. In terms of Stone's dark tourism spectrum, there is a big difference to tell whether Žanis Lipke Memorial is *associated with death* or *is of death*. The latter contains the very locational authenticity, yet, the public memory institutions *per se* are considered to be the lightest sites that do not possess locational authenticity. In some ways, the youth's perspective goes against the spectrum in terms of digital representations that deal with horrific nature. The Lipke VR bunker, to their view, needs locational authenticity. Emma (18) even states that there are varying degrees of severity of what the public memory institutions represent: "There are many different levels of seriousness in museums. In the Motor museum [references the Riga Motor Museum] – what's the scary atmosphere? You just go in, see the cars, and that's it". Teodors (19) adds: "That is a place where everything gathered in one place but this is [memorial] *where everything happened*. Not like in the Motor museum". Moreover, here, Erik (18) mentions that seeing cars in person is much more impressive than in a virtual environment.

In regards to the digitalization of the difficult heritage, such circumstances are based not only on *the degrees of severity* – an analogue of Stone's spectrum of dark tourism - but also on the *need* of having a medium that displays material reminders. It is true that, generally, virtual heritage makes cultural heritage more accessible in a digital form. The Riga Motor Museum has, in fact, created a 360^0 video-format tour of the exhibition before and after its reconstruction. However, it might be that a digital medium does not always bring the anticipated, additional value. To the participant's mind, seeing a retro car in a video or being immersed in a claustrophobic bunker, where an asylum seeker weeps under a blanket and interactive historical artifacts are displayed, are two different examples of digitalization (see Figure 17). Such *moral affordances of media* – the various embedded responses in seeing digital content (see Frosh, 2018) - are crucial to note.

Figure 17. To the left, a fragment from Lipke VR bunker; to the right, a screenshot from the Riga Motor Museum website. *Rights holder*: Žanis Lipke memorial; Riga Motor Museum,.

Thus it seems that certain circumstances determine the suitability of applying VR to a given topic. Yet, it does not disregard the idea of having a digital medium *per se*, as long as there is a credible story to be told, for "nowadays in postmodernity and this boom of new technologies, the only thing that we can stick to that is authentic is that story" (Łucja Piekarska – Duraj). The expert includes the aspect of recreating authenticity – this can be seen in either dark tourism sites with higher tourism infrastructure and in virtual heritage that recreates the tangible reminders of the past. Hitherto, there is a fine line between recreating the past and unintentionally or not inducing politics of forgetfulness, tied to collective amnesia, for not taking the authenticity as an important means.

For the Lipke VR bunker the proximity of the material site and its representational body – the Žanis Lipke memorial - reinforced and confirmed the complexity and historical aspects of the situation. There is no spatial or chronological distance from the actual place, and materiality can fortify the authenticity of the story:

> "Materiality really helps people to remember, and it helps people to articulate difficult issues. So materiality can kind of speak for us if we cannot. We also want history to materialize somehow. So that means that we don't lose all the memories. And when people die, if there's something concrete left, some piece of object that can be put into a museum, it also means that we still remember it in a way, even though it's institutionalized" (Eerika Koskinen-Koivisto).

There is uncertainty whether offering VR on difficult heritage far beyond the actual site will keep the users from going to the material site. Since the research participants felt so strongly about the complementary aspect of VR and the material exhibition of the memorial site itself, such concerns should be taken into account. Interestingly, none of the experts stated that commodified VR would keep the visitors away from visiting the actual site, however, there are some limitations:

- "My perception on this is, if this story is important, is a good story, it can only benefit the place you're trying to promote, the story of trying to share. In this concrete example [Lipke VR bunker], I don't think people are not going to come, I think the exact opposite. I think they are more likely to come if they're seen this story before right there [in VR]. The reason people come to the Louvre Museum is that they've heard about the Louvre and seen the picture online" (Victor Agulhon);
- "It adds to the possibilities because so many people cannot visit [Anne Frank House], the physical space because of lack of time, money, Covid now. Use it as an external opportunity for people who cannot [come to the actual site]. They will come, when they can" (Jan Erik Dubbelman);

- I have my own suspicions, but it has to be researched. Some might go through the digital environment and say - now I don't have to go. Others will see it and say – oh, I need to see this in person. Not everyone has the same response to the place. I expect that if anybody is interested, they'll go. But that's speculation. Those who are already willing and interested in [visiting], they're often not the people we need to reach, but those who choose can learn and explore... I think accessibility is a big thing" (Doyle Stevick).

It seems that digitalization can even advertise the actual material site and can make the history more accessible if assumed that people have the technical equipment and if there is *a priori* interest. In this way, digital mediums can become tools to remember. The biggest limitation, according to Doyle Stevick, is that often people who are interested in such VR and dark tourism are not the ones the public memory institutions should communicate with. Yet, here, the fact that "Surviving 9/11" has achieved the mainstream position among thousands of non-related VR, shows the potentiality of how the public memory institutions could reach out to the inattentive part of the audience. Although the research participants felt the need of having the location authenticity in order to make the story outright, some suggest that VR could also work as a tool to regain interest in the material exhibition. For example, as noted by Ints (18):

"[It should not be] that you go in and you read something that Latvian soldiers fought against the Red Army in that and that year, and that's it […] You need to get a feel for it. That's the way it should be done, innovatively – to make these things more memorable, to make people more willing to come back".

There should be a shift in focusing not on the competitive nature between the material site and digital initiatives but on making the information accessible that can reinforce the magnitude of people making sense of the difficult heritage.

4.3.2. Spatial dimensions in VR

While the imagined space shows the ongoing interaction between the user's perception and interpretation of the many representations of the actual bunker, the spatial domain gives an outlook to their understanding of dimensional spatiality and its constraints. The data for spatial dimensions in the Lipke VR bunker can be analyzed from the bunker and the outside environment perspective.

The Žanis Lipke memorial has a central installation of a wooden carcass, reconstructing the parameters of the actual bunker. From the second floor, it feels like a void. Such contemporary installation can offer a new way of remembering and consciously interpreting the past. Yet, the spatiality of the bunker was felt more directly in the virtual environment. For the bunker itself,

emphasis is put on the narrowness, tightness, and claustrophobic associations: “When you say it [bunker] was like 3x3 square meters, […] you don’t have that feeling. But when you put those glasses [VR headset], then you really *see* the space” (Monta, 19); “In one moment after the room with the items, I felt a bit claustrophobic” (Matilda, 24).

Furthermore, the Lipke VR bunker displays those material reminders that survivors have mentioned and are depicted in Žanis Lipke’s son’s illustration. The wooden bunks with blankets, stove, radio, table, card game, dishes, pictures of loved ones, mahorka for smoking, weapon, and suitcases – the virtual artifacts play an important role in understanding the spatiality, as if “you can feel and touch everything… you are more attentive to what is happening there” (Roberts, 18). These everyday items offer a glimpse of how surviving involves not only active seeking and hiding but also passive practicalities. Since VR is an interactive medium the users are able to reach for the virtual artifacts, feeling the narrow scope of the bunker – everything is reachable. Such layers of spatiality can add to the recognizability of both the social reality – the Second World War, Holocaust, antisemitism, genocide - and the locally situated perspective – the need to survive. And because these virtually reconstructed items are directly related to the contextual, physical site, it amplifies both the authentic story and the participatory, contemporary meaning-making for the user.

One central item is the suitcase full of fish provided to the Lipke family by the Kraukļu family living in Ķīpsala (Žanis Lipke memorial, n.d.c). The users are able to interact with it in the virtual environment and see it in the material exhibition of the Žanis Lipke Memorial (see Figure 18). Here, the spatial dimensions involve both the aspects of physical and virtual dimensions.

Figure 18. To the left, the Kraukļu family suitcase; to the right, a Screenshot from the Lipke VR bunker. *Rights holder*: Žanis Lipke Memorial

The opportunity to see the suitcase in both environments reinforced the idea that "there really was a suitcase, and that it is actually here and you saw it" (Rita, 18). The short spatial distance between both versions of the suitcase – as the research participants experienced the VR on the premises of the Memorial – adds to the connectivity between the past and the present. In this manner, the Lipke VR bunker within its spatial dimensions is not a self-contained medium. According to Champion, such a virtual environment could be considered a *hermeneutic virtual environment,* for Lipke VR bunker "[…] supports an idea of agency-directed symbols, reveals secrets of the environment" (Champion, 2011: 54).

In regards to spatial dimensions outside the virtual bunker, some research participants appreciated that the Lipke VR bunker shows the surrounding environment, which the user can glimpse at the very beginning and the very end of the VR experience (see Figure 19). Matilda (24) mentions that it was valuable to see "how this place looked like back then when there were no houses". Amanda (25) shares the same sentiment, as she got lost on the way to the Memorial.

Figure 19. Fragments from Lipke VR bunker with the view of Ķīpsala. *Rights holder*: Žanis Lipke memorial

In the VR Amanda learns how peripheral and uncrowded Ķīpsala was in the first half of the 20th century. Ķīpsala is a neighborhood where the Lipke family lived. Currently, near the former house of the Lipke family and the place of the actual, now unperceivable bunker lies the Žanis Lipke Memorial. Here, is a significant metaphor for how time changes space - as much as the bunker was hidden then, the memorial is hidden now. As noted by the Memorial itself: "It can't be seen from either the river or the main artery of the peninsula, Ķīpsalas Street; it is often left out of city maps" (Žanis Lipke Memoriāls, n.d.b). Yet, the circumstances in which these two objects are hidden are incomparably divergent. For Victor Agulhon it was also crucial to show the New York skyline before the gruesome attacks: "I think we just gave a chance to experience where the Twin Towers were in New York. That vibe, atmosphere, ambiance […] It's about going anywhere, anytime, and it's really the value of going back in time". The fact that research participants acknowledged the spatial differences is a great example of the *registers of engagement* (see Smith & Campbell, 2015) – relating to the space now shows how non-isolated the past can be.

4.3.3. Immersion and engagement for Lipke VR bunker

The user experience of the Lipke VR bunker experience can be further analyzed by looking at the user's immersion *in* and engagement *with* the virtual environment. These two aspects not only enhance the user's presence in VR but also gives the agency to individually appropriate the displayed narrative. Although, the traditional reality-virtuality continuum explains three dimensions –, Extent of World Knowledge (EWK), Reproduction Fidelity (RF), and Extent of Presence Metaphor (EPM) – in accordance with mixed reality, and not VR (see Milgram & Kishino, 1994), some dimensions can be somewhat used to explain the user experience with the Lipke VR bunker.

Foremost, the research participants describe their immersion and engagement in the VR through their bodily movements and sensory encounters. Such reactions to the virtual environment are stimulated by the sensory richness, including computer graphics, quality of visuals, and soundscape of the VR. Such aspects are strictly tied to the dialectic elements of the gaming – the core (gameplay) and shell (representation) – as they particularly concern the player's actions and reactions to the experience. If the RF dimension explains the degree of realism in terms of "image quality and in terms of immersion or presence, within the display" (Ibid.: 1326), then for the Lipke VR bunker initial user expectations were not that significant. Some research participants stated that they feel surprised and astonished by the image quality: "I was surprised that it seemed so

realistic, that I was actually in that room" (Augusts, 19); "I am generally very impressed with how modern everything is" (Laima, 26). Such an opinion that the Lipke VR bunker will not have qualitative computer graphics stem from the bias that public memory institutions lack expertise, digital literacy, and funding to develop high-fidelity visuals. Thus, the dynamics of user expectations and the actual outcome resulted in a positively heightened user experience.

Furthermore, the image quality can have an immense impact on the user's emotional responses and degrees of immersion. In one study on emotional and cognitive empathy, it is stated: "[…] less immersive and interactive VR experiences may be less likely to trigger feelings of presence or embodiment, and subsequently empathy" (Martingano, et al., 2021: 3). For such VR experience that revolves around difficult topics, such as the Holocaust and the 9/11 terrorist attacks, RF dimensions play a significant role in creating close contact with the past and even aiding in empathetic reactions.

Although the focus on visual rendering often overshadows other sensory-stimulating factors, soundscape, as well, contributes to immersion. Lipke VR bunker uses various audio components, such as movement-triggered sounds, ambient sounds, and localizable sounds. Some are initiated by the core actions of the player, and some – represent the gameplay environment. Whilst the user is engaging with the virtual artifacts and spatial dimensions, the auditory stimulation coincides with the user's action: "To see and to touch all the things, like the suitcase, listen to the radio. It was… Wow!" (Ina, 25). To achieve bigger immersion into the virtual environment, some sounds must be contextual, as if the radio is turned on in the physical reality. Such interplay between user actions, visual cues, and audio fragments increases presence. For some, the soundscape turned out to be uneasy: "I think it was really disturbing, all the sounds […] I was even thinking if I didn't have these sounds, it would be a bit better" (Matilda, 24). Sounds can indicate an action, a reaction, a movement, an impulse, and so on. In Matilda's case, the disturbance came from both the overall ambiance and the volume of the sound, which, although adjustable, she was not able to. Thus, not only the overall soundscape but also the volume and intensity of sounds have an impact on the user experience: "At one point, when they were talking in a normal monotone voice, I couldn't really hear what was going on. Maybe I had the audio turned down" (Erik, 18). One study on audio in VR suggests that "the variation of the sounds […] had a strong influence on perceived presence, realism, and the auditory aspects scale, so presenting a plausible soundscape or self-triggered step sounds evidently made participants feel more present

and the virtual reality appears more real" (Kern & Ellermeier, 2020: 11). For the Lipke VR bunker, one limitation is the ongoing real-world communication outside the VR – for some, the discussions outside the VR between the rest of the research participants and the researchers impacted their user experience.

Concerning the bodily movements, the Lipke VR bunker employs not only head movements through the head-mounted display but also the teleportation technique where users must use handgrip accessories to navigate in the virtual environment. Interestingly, although such teleportation technique can have a negative impact on creating a presence since it goes against the laws and mechanics of the bodily movements in the physical reality (see Riecke, 2006; Champion, 2018), it did not affect the user's experience. In order to comply with the displayed narrative, the research participants veritably felt the need to move: "You had to crawl in there [in the tunnel] – that adds to the realism" (Teodors, 19); "I almost started crawling in that tunnel because you forget that you can walk normally because those are not *actual* walls" (Erik, 18). Because the VR tracks the user's physical motions, creating a continuous reciprocation of the user's bodily movements and progression in the virtual environment, the immersion remains uninterrupted. Another example of engaging with virtual reality is through picking up, touching, grabbing, and holding the virtual artifacts: "When you have those digitized pictures, for example, pinned to a wall or cabinets, how accurate they are […]. And the fact that you can put them in your hand, putting them closer or farther away, that… ads something" (Erik, 18). Augusts (19) states that because of his physical movements within the VR will help him to remember the whole experience. This might be linked to the EPM dimension, which is "the extent to which the observer is intended to feel "present" within the displayed scene" (Milgram & Kishino, 1994: 1327) (emphasis in original). Thus, the VR is not based solely on an ocular-centric experience.

The virtual and audio stimuli make the bodily and sensory reactions interchangeable, insofar as they make the user react. As noted by Doyle Stevick, "the human experience uses all of the senses", thus it is important to generate virtual incentives in a holistic manner. Though it is not yet possible to include all the spectrum of the senses in VR, so that both the interoceptive and exteroceptive senses are enabled by technology (see Skarbez, 2021), the visual and audio cues of the Lipke VR bunker augmented the user experience. Two research participants got even afraid of the virtual stimuli: "[…] it seemed that there will be some kind of jump-scare [a surprising abrupt change in the narrative], and I looked over my shoulders all the time" (Rita, 18); "The room [the

bunker] was the scariest place because I saw someone lying under the blanket" (Ina, 25). Such emotions should be validated in a greater manner due to the intrinsically ethically challenging topic the Lipke VR bunker demonstrates.

Yet, the technical constraints can impact the ways how the past comes alive in VR. As noted before, some research participants had to have a technical guide to understand the navigation. There are also examples of the physical reality breaking into the VR, which consequently breaks the sense of immersion and continuity of the experience. Some research participants stepped outside the movement boundaries – also called, *stationary boundary circle*, used as prevention when the user is getting too close to the edges of the virtual environment -, which opened the real-time view – also called, *passthrough*. It can easily break the sense of immersion, as the physical reality intervenes with the VR. Roberts (18) describes his experience when trespassing the stationary boundary circle and seeing the passthrough:

> "It was so weird, you have these glasses [VR headset] and then you turn around and there's this museum room, the room where you're in this virtual reality, and when you turn your head outside the circle, and then there's black and white real-world […]. And the feeling that you are in that bunker disappears".

Laima (26) and Abel (25) note that some virtual artifacts were placed beyond the stationary boundary circle, thus, in order to engage with them, they had to forcibly disrupt their immersion. It creates an unanticipated *hybrid presence* – not being fully in VR while not being fully outside the VR. In this manner, the EWK dimension that defines "the conditions necessary for displaying a completely virtual world" (Milgram & Kishino, 1994: 1326) should be reevaluated.

4.4.Virtual commemoration and the idea of Contemplative Space

As online commemoration has become an emergent phenomenon – through sharing public posts on Facebook walls, live streaming commemoratory videos, distributing death notices on e-mails, and having virtual tours through memorial sites – digital means have arguably gotten a *thanatechnological* angle[10]. Meaning, death, its visibility, representation, and communication are being transformed by technology. The digital transformation has taken the discourse on death to new heights. The same can be applied when depicting a difficult past. Luc Bernard whose initiative

[10] It was in 1997 when the term *thanatechnology* was first coined by Carla Sofka to describe the new means how people express grief, share memories, and commemorate in the Internet (see Sofka, 1997).

to make a videogame about the Holocaust has not ended without public disputes shares a story about one particular social networking service TikTok user:

> "I mean, there's even Lily Ebert on TikTok. She's a Holocaust survivor and her six grandsons put her up on TikTok, right? And they have like 1,000,000 followers and 30 million views, and people are asking her: "Hey how are you?". All these questions and they get to interact with her, that's so amazing […]. They [the younger generation] can ask questions to Holocaust survivors! I honestly think that's amazing. It's good for the Holocaust survivors too because instead of parading them out in front of a big audience, they can do it in private. In their safe space. They can just record everything by phone. And it feels more personal. It makes you humanize them [the survivors]".

Such an opportunity to use social media can have a glaring impact on how to express life stories, share grief and hopefulness, retain memory, and make a connection between the past and the present despite geographical distances. Furthermore, this could be one way how to keep Lily Ebert's story alive indefinitely since the *posthumous memory work online* prolongs the life even after the subsequent demise. How Łucja Piekarska – Duraj, assistant professor at the Jagiellonian University, notes: "I wouldn't like to say hysterically, but [we are] quite obsessively trying to hold back any remains of those people's presence". The ways how to prepare and ultimately survive the post-witness age differs, and digitalization proves it.

The example of Luc Bernard quite easily fits within the frames of the performative culture of remembrance (see Bareither, 2021; Thiemeyer, 2018), showing that by finding ways how to relate to the past, people are trying to make sense of the difficult past. In the case of Lily Ebert, she keeps the memory of the Holocaust alive, and perhaps, by using the realm of social media, tries to make sense of her own experience. Additionally, it has an immense social impact – the real-life story of a Holocaust survivor can be reached by a vast audience, especially the younger generation, which is the primary demographic for the TikTok. In this sense, the virtual environment offers a space for virtual commemoration and digital memory. Indubitably, an issue arises, as to how and to what degree the user actually remembers, and how it can coexist with the collective memory since tensions in memory are almost inescapable. Furthermore, what is told, and how it is told in the virtual commemoration spaces?

The thanatechnological digital tools, from the context of politics of remembering, are the tools, used to remember (see de Saint-Laurent, 2018: 150). Such tools can be used both privately, for example, by taking pictures of a tombstone or watching 360^0 videos of a recreated battle scene at home, and publically, for example, by posting comments on social media in remembrance of

the deceased or sharing pictures of the Buchenwald Memorial. Lipke VR bunker, "Anne Frank House VR", and "Surviving 9/11", for that matter, are the tools, put in the public by institutions, to make sense of the past presumably privately. Moreover, commemoration in many ways happens through mere interpretation of the deceased will. "My problem was that when we [institutions] are telling their [Holocaust survivors and victims] stories, we pretend that we are doing it in their own name, that, in fact, of course, we are doing it in our own name", suggests Łucja Piekarska – Duraj. Thus, virtual commemoration (and its many ways) become yet another interpretation of how to keep up the memory alive. The heritage interpretation, on that account, is aided by virtual communities (see Marschall, 2013: 196).

From the pragmatic approach that focuses on individual discourses of the past, commemorations are not always a part of public history. Interestingly, the research participants did not acknowledge social media and public posts as sustainable tools for commemoration practices. A discussion emerged when Erik (18) shared that he has posted a picture of the Auschwitz fence on the social media platform Snapchat. Gustavs (16), too, mentions he has shared some pictures of the same concentration camp on the social media platform Instagram. Although, the post authors did not receive any negative feedback – both during focus groups and online – there was a sense of contemplating their actions. Bruno (17) in response adds:

> "What are the intentions of such a post? If it's nothing disrespectful or offensive, then ok. If it's something "#Yolo [abbreviation for "You only live once"], I'm in Rumbula" [refers to Rumbula Holocaust Memorial] then maybe it's something to think about".

The rather satirical argumentation shows the scope of addressing the difficult topic. The generational distance from the Holocaust creates a shift in remembering and narrating the past, subverting the *untouchable* topic[11]. The digital revolution has added a new layer to the discussion on the unrepresentability of the Holocaust. Doyle Stevick notes that sometimes history forces us to reconsider the narrative around difficult events, where he draws parallels with the murder of George Floyd and the reignition of anti-colonialism [12]. In this manner, virtual commemoration

[11] Holocaust satire is a wildy and lengthy discussed topic. One of the most recognizable works that put farce and parody into the topic is the provocative novel "My Holocaust" (2007) by Tova Reich. She discusses the trivialization, commercialization, monopolization, and victimization of the Holocaust, stating that the Holocaust commemoration is being abused, particularly by the excessive expansion of Holocaust public memory institutions in the USA.

[12] The killing of African-American George Floyd by a police officer in Minneapolis, USA contributed to the topic of social injustice, social inequalities, and the ongoing legacy of collonialism, supposedly systematically ingrained in the culture of the USA. This act resulted in the "Black Lives Matter" movement.

through various digital mediums may also provoke other parallels, such as agency, cultural taboos, future memory culture (see Kansteiner, 2017), the desired shape of future remembrance practices (see Łysak, 2021), digital self-representations (see Bareither, 2021), and so forth.

In contrast to social media and its use for public virtual commemoration, different connotations emerged with the Lipke VR bunker. The innovative approach to depicting the difficult past through an individual experience is appreciated; moreover, it helped "put the picture together" (Monta, 19) from the historical point of view. Although the circumstances in which the participants went through the VR experience were different than those of visiting the memorial as a tourist, there is a notion of the Lipke VR bunker offering an individual *contemplative space*. For a lot of research participants, the VR experience worked as a thoughtful and reflective mental tool through which they were able to have "a deeper understanding of the event" (Erik, 18) and a clearer sense of "the reality that it really was [like that]" (Ints, 18). Individual experiences can attribute to understanding the past that otherwise would be difficult to familiarize ourselves with. To acknowledge the frightening nature of the Holocaust, without *reliving* them physically, works as an *artificial mental purification*: "By allowing ourselves to be confronted by unpleasant events, which we neither have a relationship to nor are participating in, we perhaps indirectly achieve a mental purification and satisfaction by being allowed to 'mourn' and feel 'part of' under both distant and controlled forms" (Blom, 2000: 34) (emphasis in original). The developers are aware of that:

- "We don't want to make people relive traumatic events. We want them to remember them. We want this to be an experience to understand the experience of those who went through it" (Victor Agulhon).
- "I see videogames as being the future of storytelling […]. Some things in history are uncomfortable but by not talking about it or show it, not even graphically - there is no need for that, really - but by not showing it means we are erasing it [the memory]" (Luc Bernard).

The idea of VR being a contemplative space – somewhat relating to the idea of public memory institutions being *healing spaces* (see Sofka, 2010) – is an effect of responding to the digitally displayed immersive environment. The Lipke VR bunker is not a fast-paced experience, allowing the users to reflect on the togetherness of the virtual environment and historical narrative. The time for reflection is crucial. Stone (2010: 216) writes: "[…] the lack of time and space to actually 'take in' or contemplate the historically death-related representations […]" are at odds

with “the seemingly traditional ‘museum‘ expectations of visitors, in terms of seeking to contemplate or understand (tragic) history […]” (emphasis in original). For Eerika Koskinen-Koivisto it is essential to provide spaces for reflection:

> “It takes time to process it, to move from the heart to the head. So we need to allow [difficult heritage] sites to be places where you feel the human experience and then come back and understand it. How could this happen? What were the conditions, the factors, and the forces that made the Holocaust possible?”

Thus, virtual commemoration can become a powerful supplement to the traditional forms of memorialization. One way how to do it is through creating such VR that offers not only the immersive experience but also mental proximity to the authentic story, creating a connection between oneself and the dark experiences of the rescuers and survivors. Finding ways to get acquainted with the difficult past is a shared value for future generations. Metaphorically speaking, the youth has started to build the bridges, which, to their account, were insufficient, obsolete, or even non-existing, that aid in their understanding and remembrance of the difficult past. In one way, virtual commemoration democratizes the remembrance practices; in another way, it is also important to know the actors behind the production of virtual commemorative spaces. This is again the story of how memory is being forged, and one cannot escape the many contradictions that commemoration entails. Yet, the prevailing argument is that individual contemplation can reinforce the meaning-making process – this very aspect can be something that the younger generation can relate to more than the memory bridges built by the older generation.

4.5.Serious games: Gamification of the Holocaust paradigm

“Can you keep a secret?” is the introductory line at the start of the Lipke VR bunker. The first prototype of this VR experience is from Zigi’s – Žanis Lipke’s son – perspective. On one hand, it is a story of forced coming-of-age, as the War and antisemitism enrage and the lives of beloved are at stake; on the other hand, hope and the search for good can be found in the child’s naivety. Yet, the storyline of Lipke’s family cannot be told straightforwardly. The sustenance of life, despite the tragic circumstances, requires a multi-layered approach. Cory McLeod, a creative technologist who participated in the Lipke VR bunker development, summarizes it very accurately:

> “Žanis Lipke's story cannot be understood as a linear story. It can be only understood through a collage of stories. Each person who was saved or he helped to save, is a film in itself. With its own beginning,

> its own struggle, its own end. And the contribution that Žanis Lipke has made to the world cannot be understood as a single story, but only as a college".

There will be a continuation of the current Lipke VR bunker to try to catch a glimpse into the complex lives and pivotal moments that Žanis Lipke's life is connected. This coincides with Neta Alexander's (2021: 59) notion that "the memories and experiences of trauma cannot be translated into intelligible speech or linear narrative". Yet, by crafting Holocaust-themed virtual environments, such as Lipke VR bunker, one cannot exclude the gamification aspect that such projects carry within. Digital mediums, like VR and videogames, have almost an inherent expectation of entertaining the users (see Sweeting, 2019: 69). For the majority, it is morally challenging to try to depict the difficult past through ludic environments. As noted beforehand, the layers of such digital initiatives seem almost endless.

A great example to unravel the multi-layered phenomenon of *gaming the Holocaust paradigm* (see Kansteiner, 2017: 311), is a video game, titled "Imagination is the only Escape". The video game is staged in Paris, during the Nazi occupation, as one young Jewish boy interprets the hardship and anguish of the Jewish people. Luc Bernard has worked on this game since 2008, yet it never got the needed resources through the crowdsourcing initiative (Indiegogo, n.d.). The commentary on this initiative is generally supportive – people see the possibilities of seeing gaming as a serious medium through which the Holocaust and other difficult events can be demonstrated. As noted by Luc Bernard himself, "video games not addressing the Holocaust is a form nearly of Holocaust suppression, […] suppression of history". Other comments also praise the fact that the game would put a child as the main protagonist, which is vaguely reminiscent of Zigi's perspective in the first VR prototype. Nevertheless, the majority of the comments revolve around the fact that the game was not released, as the crowdsourcing did not meet its ends. Furthermore, there was a public dispute about "Imagination is the only Escape", while game critics praised the game (Kansteiner, 2017: 9). Luc Bernard looks back at the situation, stating that the advancements in gaming culture were stalled because of the difficult dynamic on how the difficult past should be represented and the many biases it can carry:

> "No one should have shamed me 10 years ago. We [the gaming industry] would be so much more advanced. The organizations should have helped me and I would have released that first game [Imagination is the only Escape]. Maybe "Call of Duty" [a first-person shooter videogame, mainly revolving around World War II and the Cold War] would have had a series on Holocaust by now.

> Because the video game industry would not be so scared to address these issues. Because if you look at Steam [video game distribution service], there's a game called "Heal Hitler" [direct reference to Nazi salute], like healing him. And like what even is this? You know, that's on Steam, right? And there's nothing educational about a Holocaust [in that game]. […] We have to be in these spaces, 'cause otherwise, we're losing it to everyone else."

To his mind, because such games as "Heal Hitler" fixates on treating "Hitler's psychological issues, thus preventing the Holocaust via Freudian psychotherapy" (Sinay, 2021), the gaming culture is not viewed as a suitable medium for depicting the difficult past. Kansteiner (2017: 313) has summarised a few arguments for the *Holocaust gaming taboo* - first of all, the lack of finances impacts the decision-making to release a game with entirely new gaming aesthetics and content, thus developers tend to mimic existing popular game formats, often not suitable for depicting the difficult past; secondly, the nuanced and complex narrative on difficult past can be overlooked, excluded and simplified due to the nature of hasty, action-orientated formats of videogames; thirdly, video game culture lacks such gate-keepers who could "more easily transgress limits of historical taste"[13]; lastly, the key Holocaust public memory institutions and "their brand of genocide/human rights education" perceive ludic digital environments on Holocaust as antagonistic and irreconcilable in its nature. The author, furthermore, states that the Holocaust representation *status quo* is hard to insinuate, therefore, "it amounts to a strange case of Holocaust denial in reverse that no sophisticated game about the topic yet exists" (Ibid.: 314). The concept of *serious games* (see Anderson, et al., 2010) (Barratt, 2021), thus, mitigates the player's autonomy in the ludic environment and the possible misconceptions of the narrative for educational purposes. Furthermore, Luc Bernard notes that "limiting entertainment is sanctioning history".

What could differ between the Lipke VR bunker, Anne Frank VR house, and "Surviving 9/11" is the way how it was developed – due to the close collaboration with public memory institutions and even survivors (in the case of "Surviving 9/11") there is a sense of acknowledging the authentic story as the main actor around which all the digital and technical layers are built around. At the same time, the environment supports the user's engagement. These factors are connected with the concept of serious games. One similarity between serious games and the aforementioned VRs is also the notion of good versus evil. Although in neither of these VRs the

[13] Here, Kansteiner, uses examples of Claude Lansmann, who directed a seminal movie called "Shoah", Steven Spielberg whose work on education about Holocaust through such mediums as movies, like the "Schindler's List", has been regarded as markedly insightful, and Tarantino with the crticially aclaimed movie "Inglorious Basterds".

perpetrators are depicted directly – the Nazis and terrorists -, these binary positions make the story more perceptible to the audience. Cory McLeod suggests:

> "I think for Holocaust education, telling it through heroic stories makes it much more digestible. People feel good after them. It's not digestible for the audience depicting those who have died… For Americans have an aversion to anything sad. It's our PR [Public relations] hook to lure people in, to learn more about the Holocaust, […]. Sometimes *whitewashing* [intentionally hiding the difficult, unpleasant] is used… This is exactly what we are not trying to do - we tell it not through Žanis Lipke only, but through the people, he helped save. They are the heroes. Žanis is a hero, but the big heroes are the ones who said, "I want to save myself". I am willing to risk my life to save myself."

To evaluate the gamification aspect of the Lipke VR bunker, the research participants were asked to describe the Lipke VR bunker on a scale of how educational or entertaining the experience felt. For the majority of youth, the educational aspect is more prevailing due to its multidimensionality, moral themes, and historical context. The VR experience enriches the overall visitor experience, as it was easier to draw parallels with the traditional memorial exhibition: "It [the Lipke VR bunker] wasn't meant for entertainment, and it certainly made an educational experience more engaging" (Matilda, 24); "More educational because it gave a chance to see myself in the past, historical times" (Amanda, 25). Such a form of embodiment is crucial for serious games to extend oneself into the virtually represented historical narrative. Serious games show an opportunity for interactive learning. Interestingly, there is a correlation between the user's previous experience with VR and its attributed seriousness. Amelia (18) states:

> "I think that since it was my first experience in this kind of virtual reality, of course [there is] game aspect - I don't know if I can even call it that... But yes, there was still a role for the game, but it also made it more unique and interesting in a way […]. I would still put something somewhere in between".

For new players, there exists a dichotomy between what pragmatically is considered an educational source, like books, and what is considered a source of entertainment, like videogames and VR. The players who did not have a previous experience with VR consider the Lipke VR bunker as a combination of entertainment and education: "With the game [Lipke VR bunker] I was taught a more *concentrated* information" (Augusts, 19).

Those participants who shared similar opinion sees the gamification aspect as the reason why VR is, indeed, an interactive medium. Monta (19) differs between reading a book on a difficult topic and playing a VR on a difficult topic, stating that the latter has the gamified, interactive value.

The high graphic fidelity also has an impact on ascribing the gamification aspect due to which to some research participants the VR felt like a videogame. Yet, there is a sense of ambiguity, as if some research participants feel reserved and cautious to use the term *game* within the context of the Holocaust: "[For me] more like knowledge [value], but the graphics were very good… No, it probably doesn't affect the game itself. Maybe others would associate it more with some games, but for me, it was more like a source of knowledge" (Teodors, 19). This almost intrinsic dimension of *play* for the performative culture of remembrance is seen as both valuable, in terms of learning and interactiveness, and as morally uncomfortable, in terms of seemingly vast dispositions between difficult past and form of entertainment.

Therefore, the gamification of the Holocaust paradigm involves the notion of a *playing field* – for VR enables the user to have a first-person perspective, and the performative agency in the game, from a Bourdieusian perspective, is filled with power dynamics and struggles (see Bourdieu, 1984). Because of the first-person perspective, Victor Agulhon notes that there is a highlighted scrutinity and the developers must be very cautious in using such a technique. In Lipke VR bunker the playing field involves embodied moral agency not only through interactivity and embodiment within the virtuality but also through the living memory representations. The user is not passive - the user has a first-hand experience with the virtual environment – conceptualized in the *core* structure of the game – and the contextual frames of the VR – conceptualized in the *shell* structure of the game. As noted by Frosh (2018: 364), there must be a sense of responsibility in turning the users into co-witnesses. Sweeting (2019: 68) writes that "[…] by their very nature, videogames require the input of the player". A similar attitude is shared among the interviewed experts, for instance, Łucja Piekarska – Duraj states that the public memory institutions should shift the responsibility to the visitors, so that "[visitors] can't leave this place [feeling] innocent, […]. Even though you don't want to be transmitting the stories that you heard, you become responsible for them". Such a shift makes the visitors (and to that matter users) find individual ways to commemorate. However, there is no guarantee for that. Laima (26) and Abel (24) express that they did not feel particularly *moved* or emotionally involved in the VR:

- "I don't sit so depressed thinking that someone will come in and start shooting";
- "On an emotional level, I would say that I didn't feel any particular, strong feelings, but I rarely feel that way about artificial environments, whether it's a film, a game, or a book".

Such personal attitudes can make the totality of the experience *paler*, from Stone's spectrum of dark tourism. It seems there is no hegemony in meaning-making production – to make sense of the difficult past is always challenged, negotiated, appropriated, and individualized, especially when something so atrocious as the Holocaust happened three to four generations ago. The ambiguous topic of Holocaust gamification shows the possibility of simplifying or even trivializing the living memory, yet it opens up a novel opportunity for disrupting the disconnection between the past and the present. For that, the user's outcomes after playing a serious game shall not be ignored.

5. The difficult digitalization of difficult heritage institutions

5.1.(Un)representability of the Holocaust virtual experience

The public memory institutions have an instrumental value of being the gatekeepers for difficult heritage representation – not only the Žanis Lipke memorial participates in the VR series development, thus, in some ways, transcending the Holocaust gaming taboo, but also serves as a middle ground between the users, the Lipke VR bunker, and the historical portrayal. As noted, before, the close proximity between the institution amplifies the VR experience, given its complementary value. Yet, the digitalization of the difficult heritage institutions is a multilayered process – it is concerned with the democratization of the information, mitigation of gatekeeping expertise (to rather turn into facilitators), a paradigm shift in turning viewers into co-witnesses, new forms of commemoration of the difficult heritage, construction of the experience and memory, cost-effectiveness, and so forth. In order for digitalization to emancipate the difficult heritage institutions by creating a new, added value to its societal perception and a more engaging, participatory experience for its demanding visitors, two main themes appeared in the interviews – the over-openness of the institutions and minimization of corrupting the authenticity.

Since one of the prevailing aims for the public memory institutions is to preserve the heritage for the next generations, the so-called traditional modes of heritage representation are often depreciated for the sake of new coming digital initiatives. Such phenomenon stems from the anticipated eagerness to develop and implement these initiatives, cutting-edge technologies, and interactive tools to attract the visitors and enable them to rethink their relationship with the difficult past. Besides the acclaimed VR, Anne Frank House has also developed a video series, where an actor that plays Anne depicts her horrific experiences through the use of a video camera. The

premise is aimed to target the youth with the Covid pandemic restricting an actual visit to the Secret Annex (see Anne Frank House, n.d.). The motive is clear – there is a need to embrace the new technologies if the memory is to be kept alive. It is, indeed, a race against time. While this can lead to a domino effect of people sharing this digital initiative, Jan Erik Dubbelman is a skeptic: "Anne Frank did not have a smartphone – she had a pen!". Whether or not this trivializes the unimaginable experience of the Holocaust is yet to be researched. However, there is a hint of apotheosis in terms of digital initiatives *saving* history.

What is more, the postmodern museology has amplified the discourse for public memory institutions to become ethical agents, inducing a pleonastic and somewhat asymmetrical approach when dealing with difficult topics. The digital initiatives, here, suggest a new form of justice. The experts note that often the institutions are not ready to implement such digital initiatives since there is a lack of preparedness of what such "technologically facilitated forms on the construction of memory and its institutional context" (Stier, 2003, as cited in Brown & Waterhouse-Watson, 2014: 7) could entail. Jan Erik Dubbelman even states that while the museums should invest in new approaches to heritage representations, there is a disproportionate attitude toward the need for investing in technology:

> "As it is with the African American history museum in Washington (refers to the National Museum of African American History and Culture) - the thousands and thousands of objects they put up, and films, and the high-tech stuff... But the coffin of one victim of lynching was by far the most visited and appreciated. You could see where the victim was buried in. And touch him… […] Similarly, I remember the Natural History Museum in London that spend fortunes on technology. But the kids love the stuffed animals the most. To be able to touch the stuffed animal. That was the most favorite object."

This refers to the notion of materiality invigorating the authenticity of the site. Such unanticipated visitor attitude could also be a result of not investigating the actual demand of the visitors, although, none of the developers (and the Žanis Lipke memorial, to that matter) did UX research before developing the VRs. Koutsabasis (2021) and Champion (2021) emphasize the importance of solidarity between UX and virtual heritage initiatives, which combined adds to the visitor experience as a whole. The almost *forced renaissance* of the heritage industry, led up by the digital revolution, should not be mass-produced and consumed. For difficult heritage deals with traumatic past experiences, there is a crucial need to reinvestigate the *moral affordances of media* (see Frosh, 2018), if digital initiatives are to be implemented.

Furthermore, the digitalization plans should involve various actors – both from the public and private sectors. Cory McLeod recalls the development process of the Lipke VR bunker, where the young media artists collaborated closely with the Žanis Lipke memorial for the sake of overall context, historical accuracy, and authenticity. While working on it, the end-user of the VR was kept in mind:

> "If you [the user] don't have that context clear, then you are irresistibly entering into the most ordinary representational frameworks. And this is what all Holocaust museums in America are about - they are trying to make something specific, and then the specific becomes the most ordinary".

The over-openness of the public memory institutions to implement the digital initiatives for the sake of *implementing them* may simplify, trivialize, or marginalize the difficult past, creating a space for politics of forgetfulness and discontinuity between the living memory and the digital memory. This can be a quite dangerous direction, considering the adjacency of post-witness age.

Another obstacle to the digital emancipation of the difficult heritage institutions is the authenticity of the past lived experiences. The experts and research participants largely tie the question of authenticity to the material site, having an ontological fullness of the dark experience. For the public memory institutions are a part of the dark tourism realm, and authenticity plays a big role in trying to produce credible ways of relating to the difficult past. A similar notion can be applied to digital initiatives, such as VR. The institutions are capturing authentic testimonies by using compelling and interactive digital forms to make them more accessible to the larger part of the public. Whilst "all heritage happens between the representation and interpretation" (Łucja Piekarska – Duraj), digital initiatives are yet another form of heritage interpretation. Here, to consider such initiatives as authentic as the material site and its tangible exhibition, one should consider the subjectivity that lies within the understanding of whether a virtual experience is authentic or not. Similar to locational authenticity, where "a person's individual history, past experiences, and social context may render particular sites authentic or inauthentic" (Heuermann & Chhabra, 2014: 217), the digital initiatives go under the scrutinity of its user. This is a condition all public memory institutions should not take for granted.

As stated by Jan Erik Dubbelman, Łucja Piekarska – Duraj, and Eerika Koskinen-Koivisto, the public memory institutions should be open and clear in their statements when a part of an exhibition is a heritage interpretation. One example given is the Oskar Schindler's Enamel Factory

in Krakow which showcases both the wartime and resistance experiences and parts of the movie "Schindler's List" scenography and props. On one hand, it can hinder the authenticity; on the other hand, it shifts the responsibility to the visitor, stating that heritage (and history and its interpretation, to that matter) is intrinsically filled with contradictions and unclarities. "Heritage itself is not black and white", Doyle Stevick notes, and interpretation is a way how it can be demonstrated. Łucja Piekarska – Duraj continues:

> "Heritage consists exactly of all of these different ways of conveying messages about reality. I think that the biggest danger of populism, for example, is that history and heritage are presented as if they are undoubtful - we had our heroes, who proved to be brave and loyal, and devoted. Whereas it's not always true. It's obviously the uniformed official version of history which we need for the community, yet the community also needs to see how the narratives are and can be changed."

It seems that there is a continuous power dynamic in the interpretational rhetoric about the past. Some experts go as far as to say that sometimes the only authentic element the public memory institutions can pursue is *the lived story*, whether in form of survivor, rescuer (and perpetrator), and witness testimonies. In such a frame of reference, the authenticity comes with the story; the medium, hence, becomes veritably irrelevant. Thereby, authenticity is looked at as a fundamental prerequisite to evoking the past in the present, yet it is crucial to not only offer the experience – either virtual or material – but also the contextualization of the event, site, and lived history to which the experience correlates with. Even the survived tangible material reminders of the past that has a stronger sense of inherent authenticity cannot be left *untouched* by the context. One also must *know how* to look at the thousands of wedding rings, taken from the concentration camp prisoners, and the two holes where the Twin Towers once stood. This also applies to virtual heritage, digital initiatives, and immersive technologies. The combined strength of authenticity, interpretation, and context works against isolating the past experiences within the present meaning-making. Furthermore, this meaning-making process is filled with a bodily-phenomenological and emotional reception. Arguably, public memory institutions and VR developers should be aware of that. Golańska's (2015: 779) argument supports that: "[…] an experience, whether accidentally or artificially stimulated, is always authentic (because it is always about undergoing or feeling something)" (emphasis in original). Thus, the subjective power, if aided by the aforementioned combination, can turn the passive visitor and the user into active political and ethical agents.

5.2.Room for amnesia: Gray spaces for an educational experience

Virtual heritage via the usage of digital technologies not only allows to preserve and recreate tangible and intangible reminders of the past – but also provides educational experiences. To this extent, discussing heritage *per se* contributes to meaningful conversations. During the focus groups, the participants were trying to conceptualize and find substantial observations about their family history, community, nation-state, and Žanis Lipke's story. For VR is an interactive and immersive medium, able to display almost limitless subject matters, it is appropriate for the so-called *effective learning*. Several factors should coexist interchangeably to attain this educational potential, including intuitive mechanics, good UX, appropriate design for the topic, tailored environment for the audience needs, motivational interactions, various sensory stimuli, learning objectives, and so forth. Furthermore, investigation of user experiences before and after the VR experience should be considered highly relevant, since often digital initiatives are used recklessly or simplified. For the digitalization of difficult heritage, the functionality and features of the chosen interactive medium can be quickly rendered inadequate in terms of the topic and UX. Without considering the user attitudes, it can lead to discouragement for continuous learning. This is a very crucial point, especially when the VR deals with the difficult past and when the youth is trying to negotiate with something they have not experienced directly.

As noted before, the research participants attributed an educational value to the Lipke VR bunker due to its provided context, *situationality*, authentic storyline, and graphic design. Such attitudes can turn, from the pragmatic approach, into memory acts for the youth. The user is situated not only within the virtual environment but also in the story, thus establishing a contextual relationship between the virtual and the real exemplifications. By the youth using such wordings as *it made me think*, *I see everything better know*, *it made me realize* is a clear indication of the various modes of remembering. VR can make the imperceptible into perceptible.

Yet, there are some gray spaces where the educational value of VR is fractional or incomplete. One issue stem from the ethical side – to what extent should VR on the Holocaust be embodied? Knowing that embodiment directly affects the way how the user *feels* in the virtual environment, the result is a full bodily experience and kinetic memory. VR can make a user feel so embodied in the virtual environment that the virtual self becomes an unmediated extension of oneself: “[…] you are not looking from the third person, you are not looking at it - you are inside it, you are in the first person. You can see everything much better” (Bruno, 17).

Nevertheless, it can become a slippery slope from the ethical standpoint, considering that VR the majority of the time employs the first-person view – this is also the case with the Lipke VR bunker and "Surviving 9/11". One controversial project was developed by the Babyn Yar Holocaust Memorial Center in Ukraine[14]. The Babyn Yar massacre site aims to release a role-playing VR, where "[…] after visitors complete a psychological test and the system has gathered information from their social media accounts, an algorithm assigns a role to each user. For example, you can be asked to take the role of an executioner or a victim in the context of the Babyn Yar massacre" (Günther, 2022: 192). Such tailored experiences – considered to be as authentic as possible - can be deemed extremely ethically challenging, for not only amplifying the gamification aspect but also such reenactment can traumatize its users. Furthermore, such perceived democratization of the heritage meaning-making process can result in the moral abdication of the user's responsibility (see Brown & Waterhouse-Watson, 2014: 2). Victor Agulhon is very straightforward in such matters: "You don't want to see dead people on TV. You don't want to see dead people in VR". Whilst such emotionally filled experiences can be informational,

> "[…] education should also be an inspiration. We don't just want to share the horror. We want to make people feel like they can do something […]. I mean, I've always been almost instinctively focused against the darkest. Because you can learn very little from torture centers, right?[15] What can you what on Earth can you learn from Auschwitz? I know some teachers that send antisemitic youth to Auschwitz as a part of their learning. I call it sledgehammer education – you show the horrors and you hope they will learn" (Jan Erik Dubbelman).

To this extent, the focus should not be put solely on the role-playing approach and what the expert calls *sledgehammer education* if the educational value is the prime condition. Such embodied encounters and given agency to the users might not meet the expectations for VR to be a scholarly medium also because the user must have *a priori* historical knowledge and cultural positioning to decode the narrative.

Another gray space is related to the question(s) - can a VR actually aim for educational purposes and for what purposes the user *plays* it? Presumably, as the Žanis Lipke Memorial is a public memory institution whose aspiration is to distribute information, market, produce, and

[14] There is no recent news regarding the project's future development, considering the current appalling geopolitical situation in Ukraine.
[15] Such an assumption can be looked upon in the Philip R. Stone's thesis, titled "Death, Dying and Dark Tourism in Contemporary Society: A Theoretical and Empirical Analysis".

represent the site and the lived history of the Lipke family, education is another aspiration. Not for nothing, this public memory institution will extend its site by building the so-called "House of Courage" – an educational center with civic action and open dialogue about contemporary issues in mind (Žanis Lipkes memoriāls, n.d.e.). This is consistent with the view that it is not enough to talk about what happened but to talk about why the Holocaust happened so that it does not happen again. Here, the Lipke VR bunker is of an instrumental value: "Through the VR, we try to tell one small fraction of the totality of the Holocaust" (Cory McLeod). In the words of Bareither (2021: 60), such heritage sites "not only offer particular ways of knowing, but they also offer ways of feeling the past", thus the educational setting is a multilayered dimension. The answers from the research participants are a prime example of this notion. The ways of knowing – "The VR visualized how it happened" (Teodors, 19), - and the ways of feeling – "You get the feeling… Oh, it really happened! It really was in that bunker, then you realize it's not… a fantasy" (Ints, 18) - contribute to the fact that Lipke VR bunker is a digitally immersive and educational medium.

But how long-lasting such an experience is – would the user keep the newly-acquired information and the embodied experience, and remember it after the visit has ended? Since the Holocaust and other past atrocities must be remembered, insofar as it is crucial to keep the memory of survivors alive, this becomes yet another aspect that the public memory institutions should keep in mind. Before implementing a digital initiative, the expected learning outcomes should be researched and anticipated. The commemoration is not a one-time event – it must be continuous. Here, a wide scope of virtual heritage applications, accessibility, and blended learning play an important role. Cory McLeod shares his way of approaching the continuous learning:

> "My belief is that VR should always be done through an education program. That it is not a man on his own. What I want to do is to go to a school that will speak about the context in the most appropriate way. So that VR is one part of a broad education program".

Furthermore, Bekele (2021: 101) suggests that there are various applicable themes of virtual heritage, noting that MxR might be even more viable for being an educational tool than VR due to its "contextual relationship with the real-virtual environment". Whilst the experts did not mention MxR as a more suitable tool, providing a bigger potential for education, some limitations of VR were noted. The most crucial point is said by Jan Erik Dubbelman:

> "I think the VR closes off you. I think a lot of education should be about group learning, interacting with your peers in the classroom, or grouping with other participants in the physical reality. That's the opposite. It closes you in literally. So I am more interested in the augmented reality – you add to the museum the experiences.".

Hence, the gray space of such a VR, as the Lipke VR bunker, is to purposefully provide a room for contemplation also *after* the VR experience. In order to counter the collective amnesia and politics of forgetfulness, there must be a deliberate action to open up the youth's understanding and interpretation of the past, so that they are not left alone in the experience.

The third gray space is whether the educational value of VR is also orientated towards empathetic learning. Empathy in the context of digital initiatives can derive from the "promise [that] their users [will have] the ability to engage with trauma by controlling a personalized, responsive interface" (Alexander, 2021: 59) (emphasis added). By engaging with trauma, for example, by listening to the last survivor of the 9/11 attacks, the user can create a meaningful connection to the actual event and the survivor. Some mediums have been deemed *empathy machines*. As such, Roger Ebert, an American film critic, described movies to be such mediums for they enabled him to *walk in somebody else's shoes* (see Bryn Mawr Film Institute, 2020). To this extent, a design for a technology that has been built on UX research augments the empathy, for the user's needs, attitudes, motivations, desires, and emotions are not taken for granted. This is closely tied to reflective processing, where conscious decision-making can lead to emotional states. Roughly speaking, if the VR on difficult heritage wants to make the users emotionally involved in the storyline, its development should be based on the UX. This, in turn, makes the user's role, and hence the visitor's role, more participatory.

The research participants noted several emotions after the VR experience, including fear, uneasiness, sadness, and hopefulness. There is a sense of feeling moved by the virtual depiction of the bunker: "I feel inspired. Such stories show that even in the darkest times of humanity, there will be people who do the morally right thing" (Bruno, 17). Generally speaking, "[…] how we feel about the past is always intrinsically related to our implicit knowledge of it, and vice versa, we come to know the past through our bodies and feelings" (Bareither, 2021: 61), insofar as it is the virtual extended self that witnesses the virtual environment but it is the physical body that processes the witnessed. Hence, empathy is, as Frosh (2018: 355) puts it, a *response-ability*. It can be said that the Lipke VR bunker is an emotionally affective experience, nevertheless, it also

depends on the spectator and the moral status of it. As noted beforehand, two research participants did not feel in any particular way – they rather focused on the technicalities of the VR, making the experience not as emotionally investing. However, this example shows the behavioral processing in action, insofar as the expected usability and function still resulted in a positive UX when dealing with a product. By displaying the difficult topics via digital mediums, the lived realities of the past become present. While empathy can attribute greatly to the understanding of the difficult heritage and the story of survivor and rescuer, it depends on the level of exposure to the horrific nature and the moral response-ability of the user.

5.3. No competition in suffering

In many ways, the academic and public discussions have relied on the comparisons - either between the digital initiatives and traditional ways of representing the past and between the performative culture of remembrance and traditional commemoration (see Champion, 2021). Considering the impact of the digital revolution and the rapid juxtaposition of the post-witness age, such discussions can be both fruitful and ineffective. This can turn the narrative of the difficult heritage into smaller, fractional bits of pragmatic considerations, forgetting the most fundamental part – to remember the victims and survivors and find new remembrance practices for those who have weaker personal connections to the past atrocities.

Throughout the expert interviews, another commonality appeared – that of a need to invite the youth's perspectives in order to not *monopolize* the Holocaust. As noted by Luc Bernard:

> "We need to stop thinking locally. And start thinking worldwide – the goal is to inspire. You have the right to tell your story, even if you're not Jewish. If you're European, it's part of your heritage. What happened in history… If someone who's not Jewish wants to tell that side, go ahead".

Without deep-diving too much into the cultural-political analysis of the memory construction, the monopolization aspect is not used to marginalize the sorrows and collective trauma of the Jewish people in order to give more space to those who suffered alongside one of the World's worst genocide. It rather coincides with the idea of *multi-directional memory*, insofar as we should "consider memory as *multidirectional*: as subject to ongoing negotiation, cross-referencing, and borrowing; as productive and not privative" (Rothberg, 2009: 3) (emphasis in original). By considering the performative culture of remembrance, led by the digital revolution, as a new opportunity to make sense of the past, one could move beyond the competitiveness in memory.

The ethics of remembering, thus, should evolve side by side. Jan Erik Dubbelman suggests that public memory institutions should implement a dialogue method, vastly resembling the so-called Socratic method:

> "I think way more important is that instead of flooding kids with knowledge, is being curious about what they know. Or perhaps they don't know or the connections they make are simply wrong or not appropriate. And instead of saying [it is due to] lack of knowledge as a punishment - see it as a starter for conversation. Let's say, Anne Frank died from hunger. And then you say, hey. Is that true? And then somebody says no, I don't think so. And then you should ask - why do you think that is so? I saw that happen in our programs, and I like this approach, you know, sort of knitting group knowledge into a more complete narrative where young people feel safe to share what they think they know. They may be afraid to reveal it because they may sound stupid. I think education should not be about instruction – it is about wanting to learn".

Stemming from the fact VR can be a closed experience (yet, allowing one to have a space for contemplation), an open discussion with a trained representative of the institution and the visitor could make one feel more participatory in the Holocaust-learning experience. Besides the historical literacy, the representative should also be equipped with digital literacy, receptiveness, and tolerance for dialogue to survive pasts its infancy. It entails that a certain training in communication shall happen in order to effectively establish a common conclusion – that the Holocaust shall not happen again.

Withal, two aspects of the competitive nature of memory should be noted: first of all, open, often unmediated discussions already happen in the social media sphere: "Looking at social media, we also see that for many visitors, performing and experiencing their personal relationship to the past *is not the end of the story*. Instead, they are often shared" (Bareither, 2021: 69) (emphasis added). The author, furthermore states, that such digitally mediated participatory actions create *emotional communities*. Such respective changes in discussions around the difficult past impact not only how we can analyze the digitalization but also the memorial site's entire practice. This is something that public memory institutions should notice. Secondly, the "Faro Convention on the Value of Cultural Heritage for Society" coined the concept of *heritage communities* also already shows the multi-directional, open approach concession of the past, despite the ethnical, national, territorial, and religious circumstances (CoE, 2005), thus, "[…] this formulation recognizes contemporary choices related to heritage in which diverse actors (might and ought to) have agency" (Kisić, 2016: 69). By such a frame of reference, the youth perspectives and new forms of

remembrance practices – whether through social media or VR – should be taken into account. While there can be dissonance in that "[…] every person or group will construct their own meaning and understanding of received messages […]" (Ibid.: 51), it can be constructively mediated by the combined fortitude of authenticity, interpretation, and context.

Another commonality arose in the expert interviews – that of competition between information providers, particularly between the digitalized public memory institutions and media conglomerates. There is a sense of ambiguity, as to how the public memory institutions can attempt to gain and maintain the public interest in their digital initiatives and not others. Luc Bernard notices an unused gap in the realm of social media: "If you look at the social media, like Auschwitz Memorial, they do a great job. Who else is big on social media? No one. The social media landscape is completely empty and it just ramps the Holocaust distortion". Hence, the fact that the "Surviving 9/11" has attained the zenith of popularity is exceptional. Nevertheless, there has been an outrage not so much around the very nature of the VR but rather on its distribution of it. "Surviving 9/11" is not distributed by a public memory institution but by "Meta", a massive technology conglomerate. Some have accused it "of profiting off 9/11, turning it into a video game" (Bergman, 2022). This relates to Kansteiner's (2017: 313) argument of the lack of the Holocaust gatekeepers that could interpose the *historical taste* of depicting a horrific event of the past. Seemingly, such organizations as "Meta" have not acquired the status to negotiate whether or not it is appropriate to embark on the gamification and representation taboo[16]. Although some experts mention Netflix and TikTok, similarly massive organizations, also much smaller-scope of private distributors have come under the scrutiny, as is in the example of "Imagination is the only Escape". Jan Erik Dubbelman shares his experience while working at the Anne Frank House:

> "People want very high-quality offering but you [have to] compete with extremely powerful competitors, like Netflix and all the streaming websites. I remember we had this technical guy and [he] looked at our visual offering… and the first thing he said is – the quality of your screens is so bad. I mean any other screens in his bedroom have a better quality than what we put up in the museum. The sound quality is awful. You know we were so focused on telling the story, without focusing on how to display it."

Thus, this competition also appears within the applied technological dimension. As noted beforehand, the quality of the graphic fidelity is of importance, as it helped to gain a more

[16] This is extremely important to note, since the Lipke VR bunker is also aimed to be commercialized through "Meta".

comprehensive immersion and feeling of the past. Moreover, as the younger generation is known for its awareness and familiarity with digital attainments, the quality of technological apparatus becomes an issue. Such complexity is augmented by the limitations in financial resources for difficult heritage sites.

Nevertheless, the most prominent competition again appears in the *same old tale* of whether VR can contest the physical visit to the site. This is arguably overused rhetoric. There should be a shift in rethinking the cultural change that has made the digital revolution possible, whilst also noticing the continuous demand for the physical site and material exhibitions. To this extent, the public memory institutions should rethink the ways how to democratize their expertise, making the information accessible not only to the visitors but also to their respective colleagues. This is what Jan Erik Dubbelman so conspicuously summarizes: "[…] there is no competition in suffering – I wouldn't mind using our techniques, for instance, to the history of the Soviet atrocities. We shouldn't compete, we should learn from one another". Such exchange of information works as an incitement for innovation to be congenital. By turning the competition into complementary, one could enable a carefully and ethically crafted snowball effect. The competitive nature of the Holocaust remembrance indicates that there is yet a consensus made, as to how to negotiate the digitalization of the difficult heritage institutions and the new forms of remembrance practices. Yet, the various discussions show the undying nature of the angst to comprehend the incomprehensible.

Conclusions and recommendations

The digitalization of the difficult heritage aims to bring the past lived experiences into the present with the future in mind. The digital revolution that brought up the Internet and faster access to information has irreversibly changed the cultural heritage scene. Both the tangible and intangible heritage with the help of virtual applications surpasses the geographical distances, making them as accessible as ever. With a few clicks, it is possible to look into the eyes of Yazidi genocide survivors, see the New York landscape before the 9/11 terrorist attacks, and watch the Holocaust survivor's interactions with their descendants. These are only a few examples that show the potentiality of technologies, combined with context, lived memory, and authentic story. The virtual heritage – cultural heritage that has been reborn in pixels and binary codes by digitalization – has amplified the ways how today's world makes sense of the past. To this extent, the various digital mediums, such as digital archives, 3D renderings and testimonies, VR, videogames, movies, and so forth liberate past experiences and create spaces for new remembrance practices.

For this generation is arguably the last one that is still able to meet the last survivors and eyewitnesses of the 20th-century atrocities that changed the sociocultural and political landscape of Europe and beyond, the detachment from the past will intensify. This, in turn, can lead the society to collective amnesia and distortion in commemoration. Considering that the difficult heritage teaches not only about discrimination, depravity, prejudice, and radicalism but also how to prevent such conditions so that something as heinous as the Holocaust won't happen again, the younger generation must not be impoverished from such knowledge. Nevertheless, such politics of remembering and forgetfulness are always at play. As a result, the present-day restlessness, suffering, and ongoing armed conflicts have turned the discussion back – it is rather the question of how do we forget and how we can remember?

Yet, if the digital mediums should become the tools to remember, their development, application, and maintenance must not be overlooked. The implementation of immersive technologies, such as VR, to depict the difficult past does not contain only the financial and technological aspects. The explored case of the Lipke VR bunker shows that there are more than two sides to the same coin, which coincides with findings from other authors. For example, Champion (2021) has stated that virtual heritage is still an under-studied field with a lack of usability research; Sweeting (2019), while focusing on videogames, has affirmed the importance of authenticity and immersion for the digital mediums; Bareither (2021) stresses the influence of

digitally-mediated shared experiences for the younger generation; Brown & Waterhouse-Watson (2014) describes the need for ethics when dealing with virtual representations of the atrocious past. Thus, in order for VR to not only emancipate the difficult heritage institutions but also make the learning about the past more participatory and ethical, several factors should work interchangeably. The results suggest that such factors generally are: VR contextuality with the historical narrative, lived authenticity, user experience, visitor's *a priori* digital and historical competence, institutional readiness and preparedness, learning objectives, and user's post-VR experience mediation with a skilled representative. Additionally, there has to be a paradigm shift in the societal perception of representation of the difficult past. If all these factors come together, digitalization indubitably offers an opportunity for the stories and memories of the past to reach a larger audience in a meaningful way, now and in the future.

Based on the focus group and participatory visual method data, the Lipke VR bunker is a great example of the digitalization of the difficult heritage. In order to create an even better experience, **the Lipke VR bunker** and its future settings should become aware of several **observations** and **suggestions**:

- Based on the youth's overall perception, such VR that deals with the horrific past should be made available on the premises of the site associated with the actual experience. This goes together with the Stone's dark tourism spectrum, through which the Žanis Lipke memorial is considered a *darker* site due to its association with death; yet because the Lipke family helped numerous people from sure death and aided in times of difficulty, the totality of the visitor experience at the memorial could be put on the *lighter* part of the spectrum. This indicates a potentiality in providing the VR also outside the memorial;
- Nevertheless, for the Lipke VR bunker is planned to be commercialized and made publically available also outside the premises of the Žanis Lipke memorial, the institutions should be prepared for the potentiality of disconnection between the user and the historical narrative. The close proximity between the memorial and discussed VR amplifies the effective learning, authenticity, and overall contextuality for the youth;

- For the Lipke VR bunker is the forerunner for digitalization of the difficult past in Latvia, the Žanis Lipke memorial must aid in the argumentation of the Holocaust representational taboo, for instance, by continuing working with the youth;
- Lipke VR bunker can be made accessible through educational programs, enlarging the awareness of the Lipke family and survivor's story. Such accessory to a program should be mediated by a representative, skilled in communication and digitality;
- Some focus group participants suggested including two storylines of the Lipke VR bunker – the shorter, current option and the longer version that has a more in-depth history of the Lipke family and state affairs, which could be offered as an alternative digital content to the memorial itself. This is of particular importance, as then the user gets to know the totality of the product and content, minimizing the potentiality of misinterpretations;
- There should be a focus not only on the VR experience *per se* but also on the post-VR user experience. Since VR can be a self-contained medium, for the user is alone in the virtual environment, it is extremely important to mediate the user's reflections and emotions after the VR experience. This can aid in a bigger participatory feeling;
- The head-mounted displays from which the Lipke VR bunker can be accessed should be placed in a spacious place, preferably close to the material artifacts. Such placement amplifies the complementary aspect of VR and the physical exhibition;
- In order to turn the passive bystanders into active visitors, the memorial could project the ongoing VR experience onto the screen;
- The memorial should rethink the technical parameters of the VR, particularly the parameters of the stationary boundary circle and the soundscape volume of the virtual environment;
- There should be a technical guide for how to navigate virtual reality, either in the form of a video or a poster, or on-site instruction with a museum educator/guide. Such instruction could be helpful for all age groups;
- Additionally, the happenings in the physical reality must not interfere with the happenings in the virtual reality, for it can negatively impact the user's immersion;
- The next VR iterations should include UX research and usability testing, in order to step in the visitor's shoes and make the needed adjustments before its publication;

It can be stated that the digital mediums can offer a more participatory experience than the earlier memory practices – this is particularly relevant for the Lipke VR bunker, as it enables individual contemplation, sensory experience, kinetic memory, and connection to the rest of the memorial exhibition. The biggest challenge is to turn the users into political and ethical agents since it also largely depends on the person's presumptive knowledge base. Similarly, often the public memory institutions attract those visitors that already have the needed knowledge base in order to navigate the historical narrative and heritage scape. Therefore, the digitalization of the difficult heritage entails wide-scope challenges. Luckily, those can be aided by skilled professionals, interdisciplinary approaches, and collaboration skills.

Moreover, the Žanis Lipke memorial has the potential to become a gatekeeper for other public memory institutions in Latvia with the ability to exceed the representational taboo. A similar case is the Anne Franke House VR and "Surviving 9/11" which have gotten positive international recognition. In such a frame of reference, VR and other immersive tools, like MxR and AR, are seen as more beneficial for the negotiation of the difficult heritage than videogames, since there is a bigger absence of inherent gamification aspect. Thus, the aforementioned VRs demonstrate the aptitude for the thanatechnological angle. Additionally, such perception is based on bigger societal trust in public memory institutions, rather than private enterprises and individual developers, to digitally depict the difficult past. One exception is the Emmy nominated virtual reality studio "Targo", which is not associated with any public memory institutions; in contrast, the videogame "Imagination is the Only Escape", an individual project, received a certain public backlash to try to depict the Holocaust experience. Based on the Lipke VR bunker case, there are several **recommendations** that the **public memory institutions** should take into account, for the employed technology shall not hinder the past horrific experiences:

- The process of choosing the digital medium and its installment in the public memory space should follow a similar pattern to the installment of the rest of the exhibition;
- The implementation must include various actors to maintain historical and representational accuracy, authenticity, and intuitiveness, for instance, the public memory institutions should be aided by experts of creative technologists and developers;
- The most important source of information and guarantee of authenticity indubitably is the survivors, eyewitnesses, and their descendants themselves;

- The decision making to implement a digital medium should be based on historical contextuality, user experience, ethics of remembrance, and authenticity as the main prerequisites in evoking the past in the present;
- The digitalization of the difficult heritage shall not be mass-produced for the possibility of deviating from the lived experiences and empathetic learning;
- The digitalization of the difficult heritage shall not be done with sole competitiveness in mind – the bigger cooperation between the public memory institutions the better, as there is no competition in suffering;
- There can be no successful implementation of the immersive technologies, if the representatives of the public memory institutions are not digitally competent, as they should be ready to give technical assistance to the users of the chosen digital medium;
- The public memory institutions should be ready to not get the expected emotional and empathetic outcome from the users. Thus, the representatives must be trained in communication strategies with visitors with various historical competencies;
- The digitalization can be aided by the postmodernism museology, yet there must be a balance between the *appeal of* and *need for* immersive technologies;
- There also must be a balance between the gamification and educational value, for usually immersive experiences are developed from the first-person perspective and there is still a lack of gatekeepers who can mitigate the representational taboos;
- Immersive experience should follow the laws of physics;
- Immersive technologies can aid the PR of public memory institutions.

Amidst the age of the last eyewitnesses, the question of how people remember and how to forget becomes a deeply critical inquiry. It is safe to say that there are various methods and means how to continually connect the past to the present, and digitalization proves it. Virtual commemoration provides a fruitful space for heritage interpretation. Memory is never fixed, and such remembrance practices that are aided by digital mediums are just another format of commemoration. However, since the discussions on heritage are intrinsically difficult due to the question of ownership, identity, and sustenance, the digitalization of the difficult heritage becomes a multilayered phenomenon. Due to the novelty of the research topic, further analysis seems to be a sensible next step. One possible field of the study continuation is more detailed UX research for the next iterations of the VR experiences at the Žanis Lipke memorial; the second field relates to providing

improvements in the implementation of the immersive technologies for the public memory institutions; the third field concerns the user demographics, particularly the VR impact on the adults and seniors; the fourth field regards the use and implementation of other immersive technologies, such as AR, AV, MxR.

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