

DIGITAL REBIRTH: TRANSFORMING HISTORICAL NARRATIVES INTO EXPERIENCE-DRIVEN ENVIRONMENTS

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ABSTRACT

Historical contexts are much more complex than factual historical information, and many unconscious impulses are hidden in them, which can only be transmitted through experience. This paper addresses those aspects of cultural heritage, dealing with the translation of historical narratives using new technologies, with the ultimate goal of preservation of its memory and identity. The paper is carried out through a case study of the old National Library of Serbia on Kosačićev Venac, focusing on its life and destruction in 1941, during the Nazi bombing of Belgrade. The main topic of the study is the interpretation of the devastating historical event and its experience through technological apparatus, while also defining the influence of digital media as mediator in this process and its cultural power in depicting history.

The questions that arise are related to the ways collective experiences of Belgrade's past can be interpreted through digital tools, while also examining the role of digitalization in understanding of transgenerational memory, reality, space and time.

The paper is conducted using the classic method of linear progression with a historical insight into the life of the National Library of Serbia immediately before and after the bombing on April 6, 1941. Based on the results of the historical analysis, a historical narrative is defined, which subsequently determines its emotional experiences and digital medium for its representation. By defining these tools, as a final product, the emotional experience of the historical event is reimaged.

The significance of the paper stems from its cultural and historical importance, addressing questions of collective identity, memory and symbolism of the space of the National Library's ruins and its suffering. Translation of such collective experiences of the past, using digital technologies, opens the possibility of an alternative approach to the better understanding of the urban heritage.

KEYWORDS _ *Technology, digital storytelling, historical narratives, experience*

INTRODUCTION

Stories of the past have a key role in shaping collective experiences, memory and identity. Traditional ways of historic storytelling often can't fully capture the experiential and emotional depths of the past, while new technology offers new ways of awakening those stories, creating evolving and dynamic experiences. Through the case study of the old National Library of Serbia on Kosačićev Venac, this paper tries to portray ways of how these stories can awake emotionally driven experiences and yearning for parts of subconsciously shared memory, in order to reconcile with our identity and the past. This intention is achieved through the interpretation of narrative, derived from historical events during the bombing of Belgrade in April 1941 and two-day fire that ravaged and destroyed the library and most of its books, destroying centuries of written memory. Jahn's (2005) definition of narrative describes it as anything that conveys a story through text, images, performance, or a mix of these, implying that narratives are stories expressed through various forms of media, such as novels, plays, films, and comics (Jahn (2005), quoted in Azaryahu and Foote 2008, 180). In this paper, such digital stories are built upon historical input and mediated through combination of digitally processed imagery, 3d software, AI-refined mobile app containing AR tracking and overlaid audio-visual material. Primary focus of this kind of storytelling is integration of narrative with visual and audio elements, with end goal to encourage reflection, deeper learning, and potential opportunities to inspire transformation (Davey and Benjaminsen 2021, 2). Ultimate intent of these different methods is to unveil the hidden impulses that are embedded in the experience of the heritage we live with, through digitally crafted atmospheres. In the following paper, emphasis will not be put on the technological aspects of these tools in the reimagination process, but on its potential to start dialogue with past and present via digital exploration and the process of creating digital environments through experience.

IMPACT OF DIGITAL TECHNOLOGIES ON PRESENTATION AND PRESERVATION OF HISTORY

Digital storytelling is grounded in the meaning-making value which derives from deep cultural and historical traditions, values, and practices. That value engages the audience, while the interactivity of digital tools gives the possibility to explore the narrative through different devices and softwares (Hadjistassou et al. 2023, 189). Considering the dynamics of modern life and its needs, the importance of digital technologies, in addition to the preservation and presentation of historical events, lies in its interactivity and accessibility to the wider masses. In the age where the lines of digital and real begin to blur, these tools make the storytelling of history more impactful, while offering opportunities for collective, lasting enrichment. The digital era raises new questions about the relationship between technology and immaterial aspects of cultural heritage.

As technologies that can convey storytelling advance, narrative structures and formats continue to adapt and transform. Particularly, audio-visual storytelling plays a crucial role in capturing and understanding of traditions, symbols and artifacts, while ensuring that they are passed down through generations. Beyond that, it safeguards cultural identity, while also reinforcing communal bonds over time (Podara et al. 2021, 1, 3). That said, through digital act of mimesis, this kind of storytelling allows individuals to understand the scale of the library's (im)material loss and its historical significance more deeply and on emotional level. Unlike conventional texts and archive material, digital experiences can simulate the atmosphere, the sense of devastation, and the cultural void that is left behind, fostering a stronger connection to history and heritage.

HISTORICAL INSIGHT (INPUT)

Historical insight in this case study represents the initial input for the digital transformation of the historical narrative and focuses on the chronology of events related to the life of the National Library of Serbia between 1920, the year the library was moved to the address Kosačićev venac no. 14, until

its destruction and what remained of its heritage in the years during the Great War. The linear setting of the chronology of events and the selection of collected information defines fragments of history, whose experiences can be interpreted using digital tools. Historical analysis structures historical narratives, that serve as tool of cultural reproduction, while shaping collective beliefs and establishing a shared worldview. Through creation of cognitive and intellectual framework, such narratives sustain group identity and reinforce a sense of historical continuity (He 2022, 3). The analysis and selection of the historical material of the old National Library comes from perspective that views the historical heritage as a phenomenon that is much more complex than factual historical records. The relevance of the collected information is evaluated based on their ability to evoke emotional responses and experiences related to the destruction of the library during the war. Importance of the selected historic information is directly tied to comprehension of historical narrative that is considered essential for understanding the essence of library's identity and collective memory.

Table 1: Chronology of events - The Life and Destruction of the National Library Building on Kosančićev Venac

Before bombing	
1920	The library is left without space for use (Kićović 1960, 140)
1925	Public opening of the National Library on Kosančićev venac no. 14 in splendid building, which previously housed one of the business facilities of the famous industrialist and philanthropist Milan Vapa (Kićović 1960, 141)
1935	Employee complaints about the unsuitability of the National Library building, due to its tendency to fall, water leaks, lack of the most necessary spaces, damp warehouses without light. Employees demanded a modern building with protected concrete vaults. The proposal for a new building was rejected by the Ministry of Education every time (Kićović 1960, 164)
1939	The first evacuation plan for the National Library's greatest treasures, which was never carried out, was requested by the officials of Belgrade and the National Library due to the potential danger of an attack by Nazi Germany (Kićović 1960, 165)
March 27, 1941	After the coup, it was agreed that the fund would be moved by April 10th. The library collection was packed in 150 boxes, manuscripts separated in 38 boxes (each weighing 80 kg), and old periodicals in 22 boxes. Newspapers could not be packed in boxes due to their format, so they were packed separately. On April 1, 1941, the library was already prepared for evacuation (Kićović 1960, 165)
April 3, 1941	April 3, 1941 – The fatal decision of the Minister of Education Miloš Trifunović to abandon the evacuation, not only of the National Library, but of cultural institutions in general, because the army didn't have the resources to afford the relocation, stating that everything will be like the scenario in 1915. The library was supposed to be moved to the Annunciation monastery near Užice. With that order, the employees moved the fund to the basement (Kićović 1960, 165)
6th April 1941 and aftermath	
April 6, 1941	The National Library building burned for 2 days and was bombed three times... Warden Ilić and librarian Đorđe Radojčić took it upon themselves to carry out the evacuation through Radojčić's brother, a general staff colonel, arranging on Sunday, April 6th, two trucks that would transport packed crates to the Jelen-Do station, where the books would be transported to the Annunciation Monastery next day (Kićović 1960, 165) 6:30 a.m. – On that day, Ilić, Radojčić and the servants came to move the crates, but instead of trucks, they were met by German bombers... During the bombing, the employees begged the neighbouring patriarchate to receive some things, but they refused. 3:30 – 6:30pm – After the heaviest bombing, the building was still standing. The warden Ilić visited the library for the last time (Ilić 1941, 4) The fire burned slowly for a long time, but due to the general chaos, no one could put it out. Neighbours eng. Vasa Veličković and Sava Bonžulović, security guard, tried in vain to extinguish the fire, because the building was locked. 10:00pm – Another bombing that continued during the night and on Monday. During that night the building was struck (Ilić 1941, 4)
April 7, 1941	On Monday morning, while the library was burning, professor Radovan Grujić, asked the gendarmes in despair for help, but it was in vain (Kićović 1960, 166)
End of April, 1941	End of April 1941 - After the bombing in 1941, what remained of the library was placed in the State Printing House (Kosančićev venac 19) in one room with a broken window that served for everyone. In order for the library to start working, the Ministry of Education decided on May 10 to move into the building of the Ferial Union (France 36), which was unsuitable with its 14 rooms (Kićović 1960, 170)

Therefore, the chronology of events in the following text focuses on the events during the spring of 1941, with an emphasis on the events during the tragic day of the bombing, for further digital interpretation. Historical events that led to the ultimate destruction of the National Library's treasures are depicted in the following Table 1. Collected historic information centers around events described in 1941 reports from library's warden at the time. The main objective of this chronology was to define strong and clear narrative that could be translated into meaningful and symbolic message. This insight also unravelled the special value of the destroyed items and fund that was reflected in their importance for the study of Serbian national science, representing a pillar for defining nation's collective identity, emphasizing the importance of interpreting this story.

REIMAGINATION OF HISTORICAL EVENTS SHORTLY BEFORE AND AFTER THE BOMBING OF THE NATIONAL LIBRARY OF SERBIA ON 6TH APRIL

In the process of the case study development and conceptualization, as well as the reimagining of the place's memory, the question of the relationship between the researcher and the storyteller came to focus. Jamissen (2008) states that digital storytelling mainly revolves around important experiences, events and turning points, and the way that storyteller reflects on their meaning and interprets it in correlation with their life (Jamissen 2008, quoted in Davey and Benjaminsen 2021, 2). In this case study, the researcher assumes the role of a storyteller, interpreting narrative through the point of view that assimilates individual with the collective identity, that the researcher is part of. This enables a deeper emotional and cultural connection to the topic. The process of reimagining such narratives involves a combination of several methods that can be identified in the library's case study, starting with already defined historical analysis which is then used as a tool to determine emotional experiences. Following that, these emotions are explored through experiential environment, using design shaped by digital tools. In correlation to that, Jewish Museum in Berlin, designed by Daniel Libeskind, shows a deep integration of how spatial design can correspond with emotional storytelling. The conducted case study of this museum (Zhang Z., Lu J. & Zhang X.) gathered emotional response data from 113 visitors, confirming that spatial design elements not only facilitate presentation of historical narratives, but also sculpt the emotional experience of the visitors. The study showed that different spectrum of emotions can be experienced in museum's distinct spaces, which are designed to evoke specific emotional reactions from visitors. High levels of negative emotions like fear and anxiety were experienced in the Holocaust tower, due to its minimal lighting and harsh concrete structure, while Garden of Exile evoked more positive emotions due to its vegetation and natural lighting (Zhang et al. 2024, 1-2). Similarly to Libeskind's museum, the case study of old National Library (Figure 1) aims to use emotions that derived from its historical narrative into design of digitally created imagery. Therefore, the end goal is not to accurately replicate spatial and temporal dimensions of historical narrative and material cultural heritage, but to start a dialogue between the past and the present through individual experience.

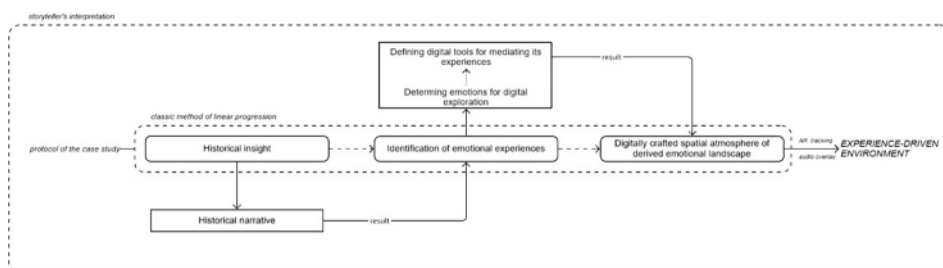


Figure 1: Protocol for reimagination of historical narratives into experience – driven environments

Identification of emotional experiences

From the defined chronology of historical events, the possibility of extracting emotional and sensory impulses emerges. Through historiography, a couple of emotional experiences can be singled out, which can then simulate the experience of the event (Table 2). The identification process of these emotional experiences was significantly aided by the concept of emotional affordances. Bareither (2021) articulates it as a heritage site's capacity to "afford", prompt, and restrict visitors' emotional experiences. Digital imagery can evoke these experiences, highlighting both the emotional affordances of heritage sites and the role of technology in shaping and mediating emotional responses, questioning the digital presence of heritage in relation to materiality and memory practices (Bareither 2021, 578-579, 582). That said, digital imagery enables viewer to dwell on the cultural meaning of heritage through generated reality and its experiences.

Table 2: Identified emotional experiences derived from chronology of events

Loss and irreversibility	Aftermath (April 7 th and beyond)	Cultural erasure and centuries of knowledge that's gone forever. Ultimate irreversibility of events.
Fear and anxiety	Day of bombing (April 6 th 1941)	Bombing of the library, fire that ravaged for two days and destroyed it to the ground.
Frustration and helplessness	March – April 1941	Uncertainty and anticipation of what's coming, failed attempts of library's evacuation and employees' efforts to save the library's treasures.

The identified emotional states (Table 2), derived from different historical events of the narrative, are utilized as a next step in creation process of experiential digital environments, aiming to emulate these states. In this process, loss and irreversibility is singled out as the most dominant emotional experience, being linked to the cultural erasure of the history and identity, linking the present with the past. The material and immaterial erasure after the bombing was immense, the National library could never be rebuilt in its old composition as it was assumed that the value of the literary fund was about 1,000,000,000 dinars at the time, the building of the National Library 3,182,256 and the furniture 727,600 dinars, in total: 1,003,909,856 dinars (Kićović 1960, 170). From the loss and irreversibility of the aftermath, other emotional states such as fear, anxiety, frustration and helplessness, that are linked to day of bombing and days leading to it, can arise. Contrary, feeling of loss can also trigger emotions on different side of the spectrum, such as hope and yearning for recollection, through which new ways for library's continuation of memory can emerge. Through its material diminishment, opportunity for remembrance and continuity arises, while also prompting resilience and creative reinterpretation.

Crafting an emotional landscape through atmosphere

Emotional connection in correlation to space is expressed through relation of the body, experience and environmental elements. Emotions are generated through multisensory experience, and sometimes can recall memories of past which embody such experiences (Lee 2022, 12). Therefore, in addition to the visual interpretation of space, the process of creating a digital environment, that would be able to express the identified emotions, also required integration of audio material, as well as the creation of an environment that would be more immersive and interactive. An important aspect in creation of the atmospheres was the relationship between environmental stimuli and the body, which was then used to create an emotional landscape through digital space. Through Lee's (2022) case study of spaces produced by phenomenological architects Peter Zumthor and Kengo Kume, it is shown that the perception and experience of space is not related to its function, but to the feelings that are translated through spatial elements that stimulate the senses, from which emotions are generated (Lee 2022, 6-10). Specific materials, spatial geometries and shapes were implemented in order to

stimulate derived emotional experiences from historical narrative. Emotional states of loss and irreversibility, which are identified through case study as the most predominant in correlation to the library's modern history, can be used as a catalysts for both grief and renewal, shaping new trajectories for the library's continued legacy. Having that in mind, those emotional states were then digitally explored through spatial atmosphere (Figure 2). The digital interplay of light and shadow in the crafted spatial realm blurs the boundaries between material presence and immaterial void, amplifying the feeling of emptiness, while confirming the image of irreversable separation. The created atmosphere represents a state of transition, in which memories are suspended in a liminal space. Based on digital spatial configuration that could evoke loss and irreversibility, through experimentation, two spatial interpretations of different emotional states (Table 2) were also crafted, aligning with the historic chronology of events from where they derived. They were presented in similar tone (Figure 3 and 4), since emotional feelings of frustration and helplessness, are often accompanied with fear and anxiety, and the other way around. Atmospheres portray environmental psychological cues like low lighting, enclosed tight spaces, and stark contrasts in order to trigger deeply ingrained emotional responses, aligning with the psychological mechanisms of distress and fear.



Figure 2: Atmosphere – loss and irreversibility



Figure 3: Atmosphere – fear and anxiety



Figure 4: Atmosphere – frustration and helplessness

As the final step in creation of experience-driven environment, spatial ambience translating predominant feelings of loss and irreversibility was selected from created atmospheres and processed through AI-refined mobile app “Focos”, that’s able to augment imagery into the fragmented spatial configurations, immersing viewer into digital experience through AR tracking. AR tracking is the method or technology that is used to detect the surrounding environment and trigger digital content (Nikolarakis et al. 2024, 7). The initial spatial outlay was generated and rendered through 3d modeling software and was then imported and augmented into the app (Figure 5). Through integration of AR into interpreted spatial narrative & overlay of audio material meant to sensory stimulate the viewer, users are enabled to engage and cope with loss in a way that goes beyond passive observation, while engaging with the digital environment (see AR tracked immersive video-recording link: <https://youtube.com/shorts/-IGWqFVHk6A?si=tB5KyzD0flexpo-S>). In this context, light becomes an ephemeral guide that illuminates fleeting moments of hope, before disappearing into the darkness of uncertainty in a disintegrated space. The AR tracked video is accompanied by the muted sounds of burning fire and time-stretched audio material of avant-garde composer William Basinski that includes sounds of tape loops that audibly disintegrate over time, capturing the transient nature of sound and memory. Through feelings of loss, digital environment aims to express hope, resilience and belonging, moving towards the future of library’s immaterial heritage. Using the same tools, atmospheres of other emotional states can be immersed into virtual experience, fostering an ongoing dialogue between the past and the present.



Figure 5: Still imagery from AR tracking recording (mobile application)

CONCLUSIONS

The case study's exploration and digital experimentation prompts ideas how immaterial aspects of historical heritage can be interpreted through digital realm. Its main objective is not on the actual recreation and replication of historical events, but the transformative and emotional aspects of its experience, which can open contemporary and interactive approaches in the commemoration of the history and its symbolic meanings. Heritage is defined by the intangible values it encompasses, which

sets it apart from the ordinary. Its presence is not restricted to physical objects, but also includes the memories and emotions associated with those objects and the recollection of past activities (Carman 2009, 197). The case study defines the methods for transformation of its narratives through digital storytelling and its derived emotional landscape, with technology as a mediator in those processes. This kind of interpretation opens topics and discussion of how intangible elements of heritage can be remembered. Material heritage is not the only aspect that is important to preserve, this paper points to its emotional profundity and the importance of experience and memory that accompanies it. During and after the Great War, the national library continued to change spaces for use until 1973, when it was moved to a building on the Vračar Plateau, where it is still located today, ensuring the continuity of knowledge and cultural memory, while also being a symbol of rebirth and persistence. Digital interpretations of such transformations open space for a deeper engagement with heritage, transcending space and time.

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