The Witcher's Natural Heritage Representation
A qualitative research exploring natural heritage in the game The Witcher through Polish
Players' Eyes

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ABSTRACT

This thesis focuses on how Polish players perceive the natural representation in the video game *The Witcher*. The research is based on the question: How do Polish players perceive the representation of Polish natural cultural heritage in the video game "*The Witcher*"?. The study addresses a significant gap in the literature concerning in particular how this natural heritage is represented and perceived by Polish players, recognizing how the digital portrayal of Polish natural elements relates to the concepts of national identity, identity and emotional connection to these natural factors.

Qualitative semi-structured interviews were employed in this research with ten Polish players passionate of *The Witcher*. This approach allowed the in-depth exploration of the players' personal experiences, perceptions and emotions, providing variations of the understanding on how the game's natural elements resonate with their cultural heritage. The ten interviewees were selected first by country of origin that must have been Poland, and then by the knowledge and passion to *The Witcher*. Transcripts of the interviews were analyzed using thematic analysis, from which six key themes were derived, giving a more detailed picture of the experiences and perceptions of the participants. The themes that were found are: 1. Natural elements fostering nostalgia and melancholia; 2. Natural elements fostering childhood memories; 3. Natural elements fostering a sense of familiarity; 4. Natural elements fostering a sense of connection to Polish culture; 5. Nature experience depending on the season or the moment of the day; 6. Herbs and flowers in traditional and modern medicine.

From the first four themes it was revealed that specific natural elements in the game evoke a range of different emotions in the players. These emotions are mostly rooted in players personal experiences and memories, especially the ones connected to their own childhood. The final two themes emphasize the strong connection between cultural background and nature, highlighting the recognition of spiritual, traditional, and biodiversity values in natural environments. Future research should expand the size and diversity along with the exploration more in depth of the differences of the origin part of Poland the interviewees are from.

KEYWORDS: *natural heritage – digital games – perceptions – interviews – The Witcher*

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1. Introduction

Video games have become active participants of many lives for several reasons more than simple entertainment. In recent years, video games with their unique ability to immerse players in a virtual world, have had the potential to depict and preserve cultural heritage of a country in ways that were previously unimaginable. Natural heritage, including ecosystems, biodiversity, and geological formations, holds massive value and importance for the wellbeing of both current and future generations (Keramitsoglou et al., 2023, p.1). Video games, as an interactive and experiential channel, provide a distinct opportunity to engage and educate individuals about the significance of countries' natural heritage (Wolf, 2017, p.194). By integrating natural elements into game narratives, environments, and gameplay mechanics, video games offer a novel platform to raise knowledge and understanding about specific settings and landscapes that make games even more entertaining and spectacular. The main goal of the games companies is to evoke a sense of space through their games, since virtual environments are often criticized by evoking "cyberspace" (Champion, 2011, p.53). Through thoughtful integration of natural heritage, video games can transcend mere entertainment, serving as powerful tools for cultural preservation and environmental education, fostering deeper connection between players and the natural world (Camuñas-García et al., 2023, p.8).

This master thesis aims to explore the significance natural heritage representation in video games, in concrete how Polish players perceive this natural representation in the video game "*The Witcher*", and to answer the following research question:

How do Polish players perceive the representation of Polish natural cultural heritage in the video game "The Witcher"?

As an interactive medium, videogames bring cultures and sceneries to life, offering an opportunity for engaging individuals in the appreciation of natural heritage (Muriel & Crawford, 2018, p.20; Wolf, 2017, 195). This thesis focuses on the perception of the representation of natural heritage in the Polish game *The Witcher*, which has gained a global fan base over the past years. *The Witcher* series, with its roots in the fantasy world created by Polish author Andrzej Sapkowski, is inspired by diverse aspects of Polish history and folklore (Clark, 2019). Nature and its representation play a significant role in the immersive worlds of *The Witcher* video games series, serving not only as a scenery but also as a character, shaping narratives and interactions. The landscapes, forests, mountains, and rivers of this world provide the stage upon which the game's events unfold (Asbell, 2023).

Therefore, it is important to understand how this representation is perceived by players to ensure that the gaming experience is both engaging and immersive.

The world of *The Witcher* has been built by personally visiting the locations and it can be seen from the attention to details in depicting flora and fauna which reflect a commitment to realism, increasing players' sense of immersion in the virtual world. As the senior environment artist from CD Projekt RED Michał Janiszewski (2016) stated, in Poland there are outdoor museums that resembles medieval villages. The crew of environment artists ended up there with cameras and when the capture of reference material was done – mountains, rivers, locations, they started to separate it into folders divided by location, in order to figure out what would have worked out and what would not have.

It is not strange to notice in the game traditional Polish locations and natural elements. For examples, unlike traditional church or chapel scenes, some main quests in the game like the *Forefather's Eve*" quest's (Figure 1.1) take place in stone circles nearby burial sites, similar to gothic cemeteries found in Pomerania, Poland (Figure 1.2).

Figure 1.1: Forefather's Eve, The Witcher 3

Figure 1.1: Lapidarium in Bartin, Kolberga- Körlin (Kłopotowo, Poland)

Materials and textures play also a very important role in the game because they need to flawlessly fit within the memory limits of each location (Janiszewski, 2016). It was important for the team, as Janiszewski says, to create a world beautiful, accurate and fun to explore. For mountainous regions or islands, they had to provide players with spectacular and varied sights and unique elements in the background since the players are actual explorers, fully immersing them in the narrative of the built environment.

The research draws inspiration from Olwig (2016, p.39) perspective on the connection between natural landscapes and the construction of national identities. Within the game, natural landscapes are not only backgrounds, but they are playing roles in establishing a sense of identity, especially in players immersed in digital environments (Trabelsi-Zoghlami et al., 2022, p.122). In the case of *The Witcher*, the game's portrayal of natural heritage becomes a symbolic archive of cultural and national identity. As Smith (1992, p.56) stated, the notion of a collective national identity often goes beyond familial and ethnic ties, finding its roots in abstract concepts such as 'nature.'

1.1 Academic relevance

From an academic perspective, analyzing and understanding the perception of natural heritage in video games opens new avenues of research and exploration. The cultural heritage surrounding traditions, folklore, music, and architecture in *The Witcher* has been extensively studied by researchers over the years (Stevens, 2020; Hong, 2014; Aroni, 2019).

Existing literature has investigated heritage in games for educational purposes for young students (Malegiannaki & Daradoumis, 2017b). Others have used video games to raise awareness on climate change and ecological learning (Coroller & Flinois, 2023b; Chang, 2019; Galeote & Hamari, 2021). Finally, there are several studies based on how players relate to nature or real elements in the world's number-one online game, the World of Warcraft (WoW) (Truong et al., 2018; Poels et al., 2014).

This research seeks to address this gap in the research on natural cultural heritage by focusing specifically on the representation of natural heritage in *The Witcher* video game and its significance for Polish players. By unravelling the relationship between the representation of natural heritage and Polish players' perceptions, this study aims to recognize how digital portrayal of Polish natural elements relates to their conceptualization of cultural and national identity and the dialogue surrounding the relationship between nature, identity, and the virtual spaces of contemporary gaming.

Furthermore, this research adds to the literature on the cultural and societal impacts of video games, particularly in relation to heritage and identity formation. By examining how players engage with and interpret representations of natural heritage in video games, scholars can gain valuable insights into the role of gaming in shaping cultural narrative and promoting a sense of belonging within virtual worlds. The dissemination of digital visual nature content is crucial for engaging diverse audiences. Cultural differences significantly influence the relevance and appeal of such content, as shown by Fisher et al. (2021, p.1221), who studied the Japanese-based video game *Animal Crossing: New Horizons*. This academic investigation aligns with broader discussions surrounding the preservation and promotion of cultural heritage in the digital age, highlighting the potential of video games as platforms for cultural expression and exploration. In fact, Stewart (2015) and Champion (2011, p.27) have discussed in their papers how videogames often explore themes of lost civilization evoking a sense of melancholy for these lost worlds and how people react to games that explore these environments.

1.2 Societal relevance

Understanding the representation of natural heritage in video games is relevant not only from a cultural and entertainment perspective but also holds significance in shaping societal perceptions and environmental consciousness (Balela & Mundy, 2016, p.101). The portrayal of landscapes, ecosystems, and wildlife in games like *The Witcher* contributes to a shared cultural experience, influencing the way players perceive and connect with the natural world.

Moreover, a video game that should be mentioned in this field is *Kingdom Come: Deliverance* (Figure 1.3). This game, just like The Witcher, is an open-world RPG set in the Medieval Age in Bohemia, Czech Republic (Nintendo, 2024). The attention to natural details such as forests, mud in the villages and the fauna that surrounds the player increases the level of immersion and engagement during the game (Todd, 2018).

Figure 1.3: Nature in Kingdom Come: Deliverance

As global populations become more urbanized and detached from nature, video games provide a mean to bridge this gap, offering an opportunity to reconnect individuals with the natural world (Chang, 2013, p.2). Furthermore, studying the impact of natural heritage representation in video games can contribute to the growing field of eco-criticism, examining how media influences societal views on environmental conservation and sustainability (Coroller & Flinois, 2023, p.3).

By integrating themes of conservation, sustainability, and ecological balance into gameplay, narratives and, the interactive engagement with virtual environments, games like *The Witcher* can challenge players to develop a deeper appreciation of nature's beauty and significance, fostering a sense of environmental awareness and advocate for more sustainable practices in society and open a broader discussion within researchers (Santos et al., 2013, p. 382). The video game *Red Dead Redemption 2* managed to gain great reputation in helping players feel like the game they are playing in, is actually alive and sometimes

even more realistic than reality itself (Figure 1.4) (Darling, 2023).

Figure 1.4: Lake Isabella – Red Dead Redemption

In addition, studying the impact of natural heritage representation in video games can contribute to interdisciplinary research in fields such as psychology, sociology, and environmental studies. By examining how video games influence attitudes, beliefs, and behaviors related to nature, researchers can gain insights into human-nature interactions and inform strategies for promoting environmental conservation and sustainability, thus enriching people's understanding of the complex relationship between virtual worlds and real-world ecological concerns (Boncu et al., 2022, p.16)

1.3 Chapter overview

The remainder of this thesis is organized into four more chapters. Chapter two elaborates on previous literature relevant to the topic. Furthermore, the chapter will critically examine previous research theories in relation to the representation of natural heritage to create a suitable framework that will assist in answering the research question of this study. Chapter three covers information about the methods used to gather and analyze the data. More specifically, chapter three will discuss why certain research approaches are chosen and how they are completed. Chapter four will provide the most important results of the semi-structured interviews. These results are categorically presented in the main themes that emerged from the data analysis. In addition, these findings are discussed by connecting them to the existing research and theories addressed in chapter two. Finally, chapter five provides a discussion and conclusion of the research and an answer to the research question. It will

also present the limitations of the research and potential recommendations for future research.

2. Theoretical framework

This chapter consists of three different sections that each contribute to the theoretical foundation of this study. To understand the representation of natural heritage in video games it is necessary to explore different scenarios, each contributing unique insights to the research narrative. This study aims to investigate the depiction of Polish natural heritage in *The Witcher* video game and its impact on Polish players' perceptions. To establish a comprehensive foundation, three connected sections will be explored: the conceptualization of nature as cultural heritage, the academic study of natural heritage representation in video games, and the subtle balance between accuracy and authenticity in these portrayals.

2.1 Nature as cultural heritage

To explore players perception of natural heritage representation it is crucial to conceptualize the concept of natural cultural heritage. Nature holds a profound significance in human cultures across the globe. From sacred mountains to revered forests, natural landscapes often serve as elements of cultural heritage, embodying deep-rooted connections between communities and their environments (Roux et al., 2022, p.2). For example, renowned painters like Claude Monet found inspiration in the natural landscapes of Giverny, France, creating iconic masterpieces that capture the essence of the natural world (Schiffman, 2023). Similarly, authors such as Henry David Thoreau and John Muir have celebrated the spiritual and transformative power of nature through their writings, inspiring generations to cherish and protect the natural environment. One of Thoreau's most famous essays *Walking* is about the relationship between men and wild nature and indeed a celebration of it (Hage, 2016).

Cultural heritage includes both tangible and intangible aspects that shape human civilization. Within this framework, natural cultural heritage extends to include ecosystems, biodiversity, and landscapes that hold cultural and historical significance (Pelegrini, 2008, p.2516). This recognition emphasizes the intrinsic connection between human and their natural environment, and acknowledges the spiritual and traditional values associated with it (De Groot, 2010, p.110). By understanding this recognition, it is possible to gain insight into how players connect to this natural elements and how it influences the appreciation of their own culture and natural history.

Ducarme and Couvet (2020, p.1) advocate for defining natural heritage representation based on scientific concepts such as "biodiversity", "ecosystem", "landscape" and "community". These sites are chosen by their universal values and are protected to preserve their cultural, historical, and natural significance and see if players believe they are aligned with real-world

natural environments of if they have distinctive fantasy elements.

In many cultures natural sites, such as mountains, forests, rivers, and sacred site are considered as important elements of cultural heritage, often holding a strong religious or symbolic meaning (Agrawal & Gibson, 1999, p.631). When examining the representation of natural heritage in video game it is therefore important evaluate the portrayal of flora and fauna. Assessing players' ability to recognize specific species and examining their portrayal within the game world, can lead to a more authentic immersion offered by these representations. This is crucial when exploring the perception of natural heritage in games, particularly in title like *The Witcher*, which is a game based on world exploration and it is deeply connected to typical Polish landscapes connected to Polish culture and often folklore. It is for this reason that when exploring the perception of the representation of natural heritage in games, it is important to portray traditional places that hold a cultural background (Alcindor et al., 2022, p.866). These sites are often represented through practices and indigenous knowledge systems that have shaped landscapes over generations. These practices reflect cultural values, beliefs, and management of natural resources by communities (Alcindor et al., 2022, p.879).

Natural landscapes can also play an important role in contributing to a sense of belonging within a community (Brockerhoff et al., 2017, p.3023). These landscapes often serve as ancestral territories, source of cultural memory and places od spiritual significance. These landscapes embody cultural values, beliefs, and stewardship of natural resources, offering players a deeper understanding of the intricate relationship between culture and environment.

Moreover, natural landscapes often hold spiritual significance, serving as sacred sites and places of worship for many cultures around the world (Berkes, 2012, p.11). For example, the Maasai people of East Africa have developed intricate land management practices that sustainably utilize natural resources while preserving biodiversity and ecosystem integrity (McCabe, 2003, p.100). These sacred landscapes are revered for their intrinsic spiritual energy, and rituals performed within them are deeply intertwined with cultural practices and beliefs. For example, mountains, forests, rivers, and caves are often regarded as portals to the divine, where humans can connect with higher powers and seek guidance (Lee & Unesco, 2005, p.326). The spiritual significance of these landscapes transcends individual beliefs, uniting communities in reverence and awe. By accurately representing Polish natural heritage and integrating culturally significant landscapes and elements in general in *The*

Witcher, the game not only intensify the impact on the players but also strengthen the connection to their cultural roots, increasing also a deeper appreciation and pride in their own heritage.

Furthermore, natural landscapes embody cultural values and beliefs related to the stewardship of natural resources and environmental sustainability. One aspect of natural landscapes that contributes to their cultural heritage is their role as repositories of *traditional ecological knowledge* (TEK). TEK includes the increasing body of knowledge, practices, and beliefs developed by indigenous and local communities over generations (Berkes, 2001, p.109). Traditional ecological knowledge, passed down orally through generations, informs sustainable practices for managing ecosystems and conserving biodiversity (Gómez-Baggethun et al., 2010, p.722). For example, indigenous communities in the Amazon rainforest have developed sophisticated agricultural techniques, such as agroforestry and soil enrichment methods, that sustainably utilize forest resources while maintaining ecosystem integrity (Porro et al., 2012, p.417). Similarly, traditional fishing practices in coastal communities incorporate seasonal migration patterns of fish species, ensuring long-term sustainability while managing the environmental changes (Cinner et al., 2012, p.5221).

Beyond individual cultural perspectives, nature as cultural heritage holds significant importance at the national level. Natural landscapes often symbolize national identity, embodying the unique geographical features, biodiversity, and ecological heritage of a country (Mitchell & Buggey, 2000 p.45). Countries rich in natural heritage leverage these resources to promote tourism, foster national pride, and strengthen diplomatic ties (Arumugam et al., 2023, p.5). To effectively brand cultural heritage sites, it is important to understand their unique cultural significance. Then, develop original and creative products that capture this essence (Arumugam et al., 2023, p.5). For instance, iconic landmarks such as Yellowstone National Park in the United States is not only celebrated for its ecological significance but also revered as symbols of national heritage (Osipova et al., 2014, p.43). Similarly in Poland, located in northeastern of the country, the Białowieża National Park is a UNESCO World Heritage site and one of the last remaining primitive forests in Europe, being one of the most popular destinations for wildlife fans (Olgroup, 2023).

Moreover, the conservation of natural heritage sites contributes to sustainable development, environmental advocacy, and cultural preservation. By safeguarding biodiversity hotspots, untouched landscapes, and culturally significant areas, nations uphold their commitment to

future generations and global biodiversity conservation efforts (Dudley, 2015, p.16). Similarly, Sandbrook et al. (2014, p.118) stated in their paper how in the gaming industry there has been an increasing of "serious games" which could address real-world problems, designed in a way they could train, educate, and change players behavior in different areas. Many games such as *Civilization*, as the authors continued, can offer the natural element as a background scenery but also, they can connect game dynamics to biodiversity conservation, often creating nonetheless awareness about relevant environmental issues (Sandbrook et al. p.119).

In conclusion, the deep connection between human beings and natural environment is extremely imbedded in cultural values, beliefs and spirituality of a group. Authentic representation of these landscapes often improves the level of engagement and immersion, allowing individual to experience and appreciate the bond between nature and cultural identity. This highlights how important it is of exploring Polish players perception of *The Witcher* game environment, as it can help shed the light on how well the game captures and communicate these deep connections. Natural landscapes not only hold the essence of national identity of a country but also serve as a tool in terms of preservation and expression of the unique heritage of said community.

2.2 Natural representation in video games

Before dealing with the representation of nature in video games it is important to understand why nature is represented in visual media in the first place. The portrayal of nature through digital visual media includes a broad spectrum of content and platforms, each with its own implications for audience engagement and accessibility. Mitchell (2005, p.257) notes the dominance of screens and the power of imagery in today's increasingly digital world, making visual media a central component of entertainment and communication. In particular, Silk et al. (2021, p.1130) focus on the concept of "nature on screen," which includes representations of nature through various digital visual media such as television programs, movies, video games, and image-oriented social media platforms like YouTube and Instagram.

Traditionally, wildlife films have maintained a separated approach to nature, often reinforcing a human-nature division (Aitchison et al., 2021, p.1139). However, the dissemination of digital visual nature content plays a major role in reaching diverse audiences and shaping their engagement. Additionally, cultural differences can influence the relevance and appeal of content to specific audiences, as exemplified by Fisher et al. (2021,

p.1221) while studying the Japanese-based video game *Animal Crossing: New Horizons*. Crowley et al. (2021, p.1231) identify that the immersive and interactive visual media, such as the video game *Red Dead Redemption 2*, have demonstrated potential for ecological education by teaching players to identify wildlife. These authors' researches are particularly relevant for this study as it underscores the evolving role of video games in bridging the gap between humans and nature. This study's focus on how Polish players perceive the representation of Polish natural cultural heritage in *The Witcher* aligns with the broader trend of using digital media to create and improve a deeper connecting with the natural world, that is in today's society. By highlighting the abovementioned games, this paragraph illustrated the significant impact that culturally relevant and immersive digital content can have on audiences.

Video games have become a significant element of the entertainment industry, attracting a diverse audience across various gaming platforms. Among the abundance of game types available, massively multiplayer online role-playing games (MMORPGs) have emerged as a popular genre (Truong et al., 2018, p.2). As the authors explain, MMORPGs offer players the opportunity to immerse themselves in persistent virtual worlds that continue to evolve even in the absence of another direct player interaction. In these online universes, players can create and customize avatars who are going to start adventures, quests, and interact with thousands of other players' avatars. MMORPGs also provide players with a platform to craft their own virtual experiences and journeys, where they can pursue various goals and objectives (Truong et al., 2018, p.2).

Yee (2006, p.773) identified ten main categories of motivations that drive individuals to engage with MMORPGs, which can be grouped into three main dimensions: achievement, sociality, and immersion. Achievement-oriented players are driven by a desire to compete striving to attain goals and overcome challenges. Socially motivated players seek opportunities to interact with others, forming bonds, collaborating on tasks, and engaging in group activities such as quests or dungeons. Additionally, the immersive nature of MMORPGs captivates players by offering rich, extensive worlds ready for explorations and discovery.

Nature representation in video games is a complex and multifaceted endeavor, intertwining player agency, media transmission, and emotional responses. Researchers have delved into various aspects of this relationship, examining how virtual landscapes evoke feelings of place, nostalgia, and cultural significance. Effective emotional engagement and storytelling

play a crucial role in the immediate impact of vicarious nature experiences, as demonstrated by efforts to enhance the narrative persuasion of environmental films (McCormack et al., 2021, p.1198). This particular notion explain by the authors is significant for this study because it focuses on the importance of the emotional narrative, which can help players' experiences and connections to the virtual world. For the present study, the emotional narrative is a key element that deepens the gaming experience. This emotional connection can lead to a deeper appreciation and understanding of one's own cultural and natural heritage, as players recognize and connect with elements from their own environment and cultural history.

In terms of representing nature, researchers have examined the relationship between player agency and media transmission in the construction of virtual nature. Others revolved their study around locations such as "pastoral idyll", "wilderness", "plant and animal vendors" understanding their attempts to fulfill the goal of a more realistic visual representation, attempting to "recreate the myth of photorealism". This aspect of nature representation has been extensively explored by Clark (2014, p.49), who conducted a comprehensive study on the relationship between player agency and media transmission.

Game developers utilize various technologies, design principles, and artistic techniques to render realistic or constructed portrayals of natural landscapes (Stewart, 2015). From advanced graphics rendering to procedural generation algorithms, media transmission channels shape players' visual and auditory experiences of virtual nature. Stewart (2015) explains that it is not uncommon to find post-apocalyptic or long-lost cultures video games about the so called "melancholy of lost civilizations". In these games there is a heavy sense of emptiness and desolation, with most of the population long gone. As a result, the stories are not delivered by the characters themselves but are instead told though the environments or remnants around them (Stewart, 2015).

Champion (2011, p.27) contributes insights into the significance of creating a feeling of place within virtual landscapes. By studying the representation of natural elements, players may have an emotional response evoked by the game and explore these specific feelings. The representation of nature in video games can evoke a wide range of emotional responses from players. From breathtaking views to more peaceful ones, virtual landscapes have the power to elicit feelings of wonder, tranquility, and excitement.

According to Champion (2011, p.29) places should have a distinct theme and atmosphere,

they must have the power to evoke memories and associations, they need to cape capable of act as stage and framework of the scene that is taking place and, they need to have the ability to transmit cultural elements. Places within games should possess distinct themes, atmospheres, and cultural elements that evoke memories and associations for players. Whether through meticulously crafted level design, environmental storytelling, or ambient soundscapes, game developers strive to imbue virtual nature with a sense of authenticity and emotional resonance.

Furthermore, the concept of "*storyworlds*" introduced by Schrier, Torner, and Hammer (2018, p.352) expands upon traditional notions of setting by acknowledging the fluid and dynamic nature of virtual environments. *Storyworlds,* as the authors explain, may incorporate elements of both fiction and non-fiction, blurring the boundaries between reality and imagination. Within these narrative frameworks, players navigate complex layers of relationships, conflicts, and themes, all against the backdrop of immersive natural landscapes.

The use of nature in video games often transcends mere background scenery, becoming a pivotal narrative device that enriches storytelling. Games like *The Legend of Zelda: Breath of the Wild* by Nintendo and *Firewatch* made by Campo Santo are perfect examples in how they use natural landscapes to guide player exploration, explain narratives, and evoke deep emotional responses. In *Breath of the Wild*, the wilderness serves not only as a vast playground for exploration but also as a narrative element that tells the history of a fallen kingdom, guiding players through its lore with the ruins and natural landmarks scattered across the landscape (Hemmann, 2019, p.4). Similarly, *Firewatch* uses its setting in the Shoshone National Forest in Wyoming, to craft a narrative deeply tangled with isolation, personal growth, and the beauty of nature, effectively utilizing the environment to drive the story forward (Banuelos, 2023).

The interactivity of video games offers unique opportunities for players to engage with virtual nature. Technical generation techniques, as seen in games like *No Man's Sky* by Hello Games, create unlimited natural environments, allowing players to experience the thrill of discovery and exploration on an unprecedented scale (Tait & Nelson, 2021, p.695). These technologies not only enhance the visual realism of landscapes but also enable dynamic ecosystems where players' actions can have visible effects on the environment, further immersing them in the virtual world (Newman et al., 2022, p.1).

The representation of nature in video games has a profound psychological impact on players, often evoking feelings of awe, tranquility, and nostalgia. *Journey* by Thatgamecompany, and *Ori and the Blind Forest* created by Moon Studios, utilize stunning natural landscapes and atmospheric conditions to evoke a sense of wonder and emotional depth. Research by Mostajeran et al. (2023, p.1) suggest that exposure to natural environments in video games can have restorative effects similar to those experienced in real natural settings, reducing stress, and enhancing mood. This finding is relevant for this study because it offers quite a few insights on the benefits engaging with virtual natural environments can have on players. This understanding can inform how effectively the game increases sense of well-being and cultural connection, further emphasizing the importance of accurate representation in video games.

Video games also have the potential to raise environmental awareness and promote conservation efforts through the representation of nature. Games like *Endling: Extinction is Forever* by Herobeat Studios and *Beyond Blue* created by E-Line Media, are designed with educational intentions, offering players insights into the challenges facing natural environments and the importance of conservation. By simulating real-world ecological dilemmas and encouraging players to engage with environmental themes, these games can foster a deeper understanding and appreciation of nature, potentially influencing real-world attitudes and behaviors towards environmental preservation (Boncu et al., 2022, p.1).

The Witcher stands out for its remarkable recreation and representation of various Northern European natural landscapes. Dwiar (2017) highlights the game's achievement in designing landscapes that exhibit geological accuracy and natural coherence. The mountains, forests, and fields depicted in the game are not only visually convincing but also possess a natural credibility, down to the tiniest details. Despite being a fictional world, *The Witcher* manages to evoke a sense of familiarity by incorporating elements of landscape design found in the real world. This precision fosters a strong connection between the game's fictional setting and the player's own experiences of natural environments.

Dwiar (2017) notes that players instantly recognize the authenticity of the landscapes depicted in the game, as they mirror the characteristics of real-world landscapes. This recognition enhances the immersive experience, as players can relate to the environments they encounter. The use of familiar plants and terrain features further strengthens this connection, blurring the boundaries between fantasy and reality. Despite knowing that the game is set in a fictional world, players find themselves drawn into the virtual landscapes,

experiencing a profound sense of immersion and engagement.

The representation of nature in *The Witcher* is strictly tied to the game's interactive three-dimensional environment. As described by Dwiar (2017), the game offers players the ability to explore spaces and objects from multiple angles, creating a spatial consistency that allows for seamless navigation. The virtual landscapes given by *The Witcher* are digital representations of settings inferred from Sapkowski's writing, although it's important to note that the spatiality of these locations is primarily the result of the developers' efforts. CD Projekt, the game's developer house, emphasized that no part of the virtual environment was generated automatically, underscoring the meticulous craftsmanship involved in creating the game world (Klepek, 2015).

The vast world *of The Witcher* is composed of several regions accessible through fast travel, each characterized by unique natural environments. From swamps and forests to steppes and mountains, the game offers a diverse array of landscapes for players to explore. *Velen*, also known as *No Man's Land* (Figure 2.1), is portrayed as a predominantly muddy and forested area inhabited by stricken villagers (Jański, 2019, p.126). The harsh realities of the setting, including the impending clash between political forces, are reflected in the landscape's desolate and impoverished appearance. The representation of nature in these regions serves to immerse players in a rich and diverse world. This land is based on the landscape of Mazury (Figure 2.2), a lakeside located in the northern part of Poland.

Figure 2.1: No Man's Land, The Witcher 3

Figure 2.2: Teutonic Castle in Szymbark, Pomerania

Moreover, the game's depiction of nature extends beyond mere aesthetics to include thematic elements inspired by real-world geography and culture. *Novigrad* (Figure 2.3), a busy port city, is divided into districts reflecting socioeconomic disparities and religious tensions (Jański, 2019, p.126). The comparison of wealth and poverty within the cityscape mirrors real-world urban environments, enhancing the game's immersive qualities and accuracy. The city was inspired by the Polish main port on the Baltic Sea, Gdańsk (Figure 2.4), which through the centuries has been inhabited my multinational citizens and it was the only Polish city that was a member of the medieval Hanseatic League – a medieval commercial and defensive network of merchant and market town in Northern Europe (Dzik, 2022).

Figure 2.3: concept art CD Projekt RED "Witcher 3" Novigrad's docks from Andrzej Dybowski portfolio

Figure 2.4: photo of Gdańsk's docks

Finally, the representation of nature across multiple digital platforms, such as social media, television, movies, and video games, demonstrates the powerful influence of cultural differences on the relevance and appeal of natural content to diverse audiences. In particular, video games evoke emotional responses through the portrayal of natural elements, which often blend fictional and non-fictional features, blurring the lines between reality and fantasy. By incorporating natural elements in games like *The Witcher*, the digital experiences make the connection between players and the digital world stronger, improving at the same time the emotional spectrum.

2.3 Accuracy vs. Authenticity in the representation of natural heritage in games

The representation of natural heritage in new media forms has gained significant attention due to its potential impact on environmental awareness and conservation efforts (Meng et al., 2023). New media, including video games, offer unique opportunities to engage audiences in interactive and immersive experiences that can convey complex concepts and foster emotional connections. As such, the importance of accuracy in portraying natural heritage in these digital platforms cannot be overstated.

Natural ecosystems are dynamic and constantly changing over time due to various factors such as climate, biodiversity, and human activities. Video games that simulate dynamic and evolving environments, with day-night cycles, weather patterns, and seasonal changes, provide a more realistic "sense of presence" (Grassini & Ratcliffe, 2023, p.329). By

experiencing the dynamic nature of virtual ecosystems, players gain a deeper understanding of the interconnectedness and resilience of natural systems.

In addition to visual fidelity, incorporating multisensory elements such as soundscapes and ambient lighting enhance immersion and realism in video games (Chandrasekera et al., 2015, p.1004). Realistic sound effects, for example, can evoke auditory cues that mimic the sounds of nature, further immersing players in the virtual environment. By engaging multiple senses, video games create a more complete and immersive experience that supports personal players' perceptions of natural heritage.

In general, developers aim to create games that feel accurate without being entirely accurate (Majeski, 2018, p.). In this study, the focus is on exploring players' perceptions of the accuracy and authenticity of the natural heritage represented in video games. This exploration is essential because it offers insights into how players interpret and connect with virtual ecosystems.

Understanding these perceptions becomes particularly crucial as it influences not only the gaming experience but also has the potential to shape broader societal attitudes towards nature and environmental conservation (Yoo et al., 2022, p.2). Accurate representation of natural heritage in video games serves educational purposes by providing players with insights into real-world ecosystems (Coroller & Flinois, 2023, p.2). It fosters a deeper understanding and appreciation for nature, contributing to environmental knowledge. Players can learn about different ecosystems, flora, and fauna, enhancing their knowledge and connection with the natural world. Moreover, accuracy increases immersion and realism within the gaming experience, leading to greater player engagement (Dwivedi et al., 2022, p.4). Detailed representations of natural elements such as forests, mountains, or bodies of water evoke emotional responses, enriching the gaming experience and fostering a sense of wonder and nostalgia.

Furthermore, accurate representation of natural heritage in video games contributes to the preservation and conservation of ecosystems in the real world (Raymond, 2023, p. 28). By experiencing the beauty and complexity of virtual environments, players may develop a greater sense of responsibility towards environmental protection, inspiring them to take action to protect real-world ecosystems.

Accuracy is about representing historical facts correctly, on the other hand authenticity is about giving to players the right experience and expectation of the past (Kapell & Elliot,

2013a). Wang (1999, p.350) recognize three types of authenticity: objective (the ability of preserving through time), symbolic or constructive (constructed in terms of point of view and perspectives) and existential with three subtypes (self – self-creation through challenges, bodily feelings – liberation from the routine, and interpersonal – celebration of authentic relationships with people). Additionally, accuracy in representing natural heritage demonstrates respect for cultural and historical significance (Zeiler & Thomas, 2020, p.265). Many natural settings hold cultural importance for indigenous communities, and accurately portraying these elements in video games acknowledges and celebrates their cultural heritage. Cultural sensitivity and authenticity are crucial considerations when representing natural heritage in video games (Illuminative, 2022). Developers must carefully research and consult with experts to ensure that their representations are respectful and precise, particularly when depicting indigenous cultures and traditions.

Finally, by portraying natural heritage authentically, video games, including *The Witcher*, have the potential to contribute to a deeper appreciation and understanding of nature, bridging the gap between virtual and real-world ecosystems. These immersive environments can help players to explore and respect real-life natural landscapes, fostering a sense of environmental advocacy. As players navigate richly detailed forests, mountains, and watercourses, they may gain a greater awareness of the complexity and beauty of nature. This virtual exposure can inspire real-world celebration and conservation efforts, making video games powerful tools for environmental education and care.

3. Method

This master thesis focuses on unraveling how Polish players perceive Polish natural cultural heritage representation in the video game *The Witcher*. In this chapter the methodology of this research will be specified. Firstly, the research design of the paper is presented. This includes the explanation of choices made for the research regarding the approach. Since the purpose of this study is to gain detail insights into Polish players perspectives with respect to nature in *The Witcher* videogame, a qualitative rather than a quantitative approach is used. More specifically, semi-structured interviews are conducted in order to obtain more flexibility in the interview structure. Second, the sampling method, which refers to the decision made in the research of the participants. Subsequently, the section of operationalization, which refers to the elaboration of the aspects that are considered to answer the research question and how these are linked to the theoretical overview. Then, the data collection and analysis section are illustrated to present the evaluation of the collected data and the qualitative method for the analysis. Finally, a critical consideration on the validity and reliability of the research is discussed.

3.1 Research design

The current study explores a phenomenon that cannot be quantified in numbers and relies deeply on interactions with the participants. Due to the emphasis of personal perspectives, a qualitative method was found more appropriate for this research (Pathak et al., 2013, p.1). Myers (2013, p. 36) emphasizes the importance for researchers to comprehend the foundations of their knowledge and acknowledge its limitations. The research question addresses interconnected topics, with meaningful work that is still largely unexplored. Given the self-exploratory nature of this study and the limited existing literature, it is positioned as exploratory research, aiming to lay the groundwork for further investigation rather than providing ultimate answers. Considering the exploratory aspect and the scant literature base, the reasoning of this study is predominantly inductive. Consequently, the study aims to contribute to the existing literature by formulating theory based on collected data.

Semi-structured interviews were chosen due to their flexible nature and the ability to pose open-ended questions, aligning with the interpretive theory guiding this research (Bryman, 2008, p.164). These interviews facilitate understanding participants' perspectives and experiences (Silverman, 2006, p.458), which is particularly beneficial in an exploratory study like this. The use of an interview guideline (see Appendix A) provides structure while allowing further flexibility, ensuring that key topics discussed in the theoretical framework

are covered while permitting to investigate deeper into important areas through examining or supplement questions (Pole & Lampard, 2002, p. 35).

3.2 Sampling method

In terms of sampling method, a purposive method was applied. This method is suitable because for this research participants should have specific attributes and characteristics (Flick, 2009, p.115). Bernard (2006, p. 196) explains that in addition to knowledge and experience in the research field, it is important to highlight also the availability and will to contribute to the study of the participants, as well as the ability to communicate and articulate opinions and experiences. Palinkas et. al (2013, p.534) explain how some sampling strategies are used to identify and expand range of difference. On the other hand, they notice that there are some other strategies, including the snowball sampling, that are used to narrow the range of dissimilarities and focus on the similarities. The research question imposes several criteria that participants had to meet before they could be included in the sample. They were included in the sample based on their nationality, age, and gaming experience with the game *The Witcher*.

The snowball technique was used to find more suitable participants, especially in case of lacks. In this study the snowball technique was fundamental since the range of reachability was very limited due to the very specific needed demographic for the research (Biernacki & Waldorf, 1981, p.141). The snowball technique or chain referral is a method used when the participants share among the people they know or share the same characteristics that are of research interest. It is even more suited if the focus of the study is on sensitive or private matter, and thus requires experienced of insiders to recruit people for the study (Biernacki & Waldorf, 1981, p.141). Even though the snowball sampling technique successfully resulted in enough respondents, it also led to narrow demographic differences in terms of gender because the participants being mostly males, generally only shared the interview details only between male peers. Even though the female participants were in an evident lower number, the outcome was not affected by this aspect. All names in this research will be pseudonymous to assure the participant's anonymity.

A total number of 10 interviews were conducted. The small number of interviewees was due to the difficulties faced during the recruiting period, since the demographic was very specific and difficult to reach. The final sample included 7 male participants and 3 female ones. All the participants' age went from 21 to 34 years old and all of them came from different parts of Poland, especially the South and Southeast as it can be seen by the Table 3.2 below.

Video games players who actively play to *The Witcher* were recruited via personal contacts, Instagram, Facebook and gamers forums. The selection criteria firstly included country of origin that must be Poland, thus the videogame is set in its Medieval Age, and it was explored their personal and emotional perspective of the natural environment in the game as Polish people themselves. Diverse age and genders and different levels of games consumption were further taken into consideration in order to capture a wider range of prospective.

TABLE 3.2: SAMPLE OVERVIEW

NAME (pseudonym)	AGE	GENDER	WHICH PART OF POLAND ARE THEY FROM
Mark	25	Male	Southeast
Lea	34	Female	East
Axel	23	Male	Kraków
Dylan	22	Male	South
Sarah	25	Female	Lublin (South)
Samuel	21	Male	South
Lionel	23	Male	East
Pola	24	Female	South
Ross	22	Male	East
Andrew	24	Male	Southeast

3.3 Operationalization

To answer the research question, the four main topics discussed in the theoretical framework served as a base of thoughts for the interview guide: connection to the natural elements of the game, level of engagement with the video game *The Witcher*, the perception of the level of authenticity and accuracy of the portrayal of natural elements. The interviews have commenced with a series of introductory questions to establish a bond and creating context. Subsequently, participants have been prompted to discuss their individual viewing behaviors, focusing the connection and how they engage with the natural cultural elements portrayed in video games, and more specifically later on in the video game *The Witcher*. The

interview process has then concluded with a set of questions delving into participants' gaming experiences and reflections on the authenticity of the portrayed natural heritage (Appendix A). The aim of this study was to explore how these elements were recognized by the participants while playing and what kind of feelings they provoke. Although the main topics discussed during the interviews, it has been explored in a deeper level the individual natural element and what kind of emotion or response had in the participant.

3.4 Data collection

In terms of data collection, online interviews were conducted to capture a wider range of prospective. primarily utilizing semi-structured interviews to explore players' perceptions in the representation of natural heritage in video games. All interviews are conducted in the time frame of four weeks, from the 6th of April 2024 to the 8th of May 2024. Each interview cover on average 30 and 40 minutes on the platform Jitsi Meet, because in person interviews were not possible due to the different location between the participants and the researcher. The duration of time of some interviews was slightly below the average because certain participants demonstrated limited knowledge and interest in the topic, despite trying to dive deeper with different questions and inputs. This was attributed to their different focus during the gameplay; for instance, some players were more interested in the storytelling or combats scenes rather than the representation of nature. Each participant went through the same procedure of interviewing. Before the interviews, the participants received the interview consent form via email (see Appendix C), enabling them to familiarize with the purpose and scope of the interview. Before the interviews were conducted, interviewees were informed of the following: the purpose of this study, what kind of questions would be asked, that the interview would be recorded for research purposes, and that participation was deliberate and anonymous. The interviewees read and signed the consent form before the interview started. All interviews were conducted in English in order to enable the comprehension of both the researcher and participants, since none of them were native English speakers. Each interview was recorded with a recording device to document all questions and answers. These recordings were the basis of the written transcription that followed each interview used as a base of the data analysis method.

After conducting and recording the interviews on the platform Jitsi Meet in order to facilitate the access to the participants without subscription or log in. The interviews audios were transcribed into a written document so as to facilitate the following thematic analysis. Rubin and Rubin (2005c, p.5) describe how important the transcription part is as the first step of data analysis, since it can subsequently influence the examination of the data. The full verbal

transcription (Dresing & Pehl, 2018, p.18) allowed the interpretation in context or in the tone which is used to say something because it includes breaks in the speech, filler sounds, and corresponding description of its emphasis. After the transcription of each interview, a thematic analysis was applied in order to find the main themes emerged during the interviews and systemically divided them into clusters.

3.5 Data analysis

The transcripts are analyzed with qualitative thematic analysis. The goal of this research is to answer the research question "*How do Polish players perceive the representation of Polish natural cultural heritage in the video game "The Witcher"?*" which indicates the need to find motives and patterns in relation to the consumption and behavior while playing *The Witcher*. Therefore, to properly answer this question, thematic analysis is the most appropriate data analysis method as it is a well-known strategy in qualitative studies to identify and analyze patterns in data (Clarke & Braun, 2013, p.120). The two authors purpose the application of six phases of reflexive thematic analysis: 1. Familiarizing with the data, starting from the transcription of all the interviews and highlighting the important notions every single interviewee mentioned; 2. Generating codes, by writing down each natural element mentioned in the interviews and starting to noting them down; 3. Constructing themes by the codes, by dividing and grouping in each emotional response the natural elements that belonged to that group; 4. Reviewing themes, by redefying the best matches and adjust some elements into the correct clusters 5. Defining and naming themes, by giving the correct and most suitable name to help understand directly the topic of the group, and 6. Reporting the findings in the Results section 4 of this paper (Clarke & Braun, 2013, p.121-122). Additionally, this way of analyzing fits this research the most as it also allows to interpret the data meaningfully by focusing primarily on the data and the previously discussed theoretical concepts (Riessman, 2007, p.53).

Ultimately, the final themes started to develop in the selective coding phase with the help of ATLAS.ti, which gave just a starting point from which was possible to develop the final coding tree (Appendix B). The last step includes the refinement of the codes and reduce the list of findings by combining them into final groups that each form an overarching theme (Boeije, 2010, p.96). Vaismoradi et al. (2016, p.100) characterize thematic analysis as a systematic approach involving coding, interpreting meaning, and constructing a description of social reality through the identification of common themes. This process follows a multistep procedure, encompassing open, axial, and selective coding stages, which offers

support in managing large datasets (Boeije, 2010, p.108). Before commencing the coding process, it is recommended to engage in an initial phase of data immersion by thoroughly reading and analyzing the interview transcripts and making reflective notes. This step allows the researcher to develop a comprehensive understanding of the data and key concerns within the phenomenon under investigation (Vaismoradi et al., 2016, p.106). The relevant theoretical concepts and expectations are also considered during coding, guiding the analysis.

During the open coding phase, each interview is independently coded, leading to a collection of codes presenting recurring patterns. This phase focuses on initial data reduction and organization, where basic codes are generated and briefly described (Boeije, 2010, p.97). These initial codes represent fundamental elements of the data that are meaningful in relation to the phenomenon (Braun & Clarke, 2006, p.88).

Subsequently, in the axial coding phase, the initial codes are grouped into fewer, more meaningful categories. Finally, in the selective coding phase, the axial codes are refined, and the findings are synthesized into predominant themes. These final themes are derived from the data analysis and include natural elements fostering nostalgia and melancholia, familiarity, connection to Polish culture, nature experienced differently depending on the season and the moment of the day and the application of herbs and flowers in traditional and modern medicine.

Once the final themes are identified, the researcher can formulate a new theoretical model, which will be elaborated upon later in the study to draw conclusions.

3.6 Credibility and Ethics

Given the sample used to examine these perceptions, and the different interpretations of the data that may differ from researchers, it is crucial for this research to mention the notions of validity and reliability. According to Silverman (2011, p.360) reliability refers to the extent to which the results of a study are unaffected by incidental factors in their creation that are themselves part of the qualitative reality. In order to meet this concern, this research describes how is has been conducted and how the interpretations have been done in detail and transparency. This is also achieved by explaining in detail the outlining sample selection criteria. Information about the data and similar studies also provide to improve the transparency of the thesis. Moreover, the steps in the data analysis process are greatly explained, giving a clearer and more reliable overview of the whole research process.

In terms of validity, Silverman (2011, p.367) defines it as the degree to which a description

faithfully reflects the social phenomena it relates to. However, given that individuals have their own perspectives, the interpretation of information may not be universally shared. Consequently, the resulting analysis relies on the individual interpretation and aims to be as respectful as possible, as approached by the researcher. During this research, my role as a researcher has been to meticulously analyze and interpret the interviews conducted within the 10 diverse participants. Employing a thematic analysis, I explored the similar themes, and representations inside each interview to decipher their impact on Polish gamers' perceptions of natural elements in *The Witcher* videogame. This research aimed at providing insights into the intricate ways visuals in videogames contribute to represent and shape natural preservation and representation in a new and unconventional way compared with the traditional educational tools (e.g. books, encyclopedias...).

The project ensured ethical conduct throughout the research process and several consideration has been addressed to uphold this obligation. First there was no potential harm of any kind – physical, psychological, or reputational– anticipated for the researcher, participants, or the population they are from. Participants in this study were all adults who are not in a vulnerable position, guaranteeing that participation was voluntarily and free from any coercion, thereby maintaining the integrity and autonomy of the participants. Informed consent was provided to the participants to offer clear and comprehensive information about the research goals before they agree to participate. Participants had also the freedom to withdraw from the study anytime without facing negative consequences. Lastly, the confidentiality of personal and sensitive data was rigorously maintained. All data collected will be stored ensuring the privacy and protection of all participants' information.

4. Results

This chapter presents the results, findings of the presented research and the main themes emerged from the data. Each theme is presented and explained by using examples from the transcriptions of the interviews. Those emerged from the coding process, supported by the code tree representing the product of coding (Appendix B).

After finishing the coding process of the interviews, the six final themes that occurred are 1. Natural elements fostering nostalgia and melancholia, 2. Natural elements fostering childhood memories, 3. Natural elements fostering a sense of familiarity, 4. Natural elements fostering a sense of connection with Polish culture, 5. Nature is experienced differently depending on the season or the moment of the day, 6. Herbs and flowers are used both in traditional and modern medicine

4.1 Natural elements fostering nostalgia and melancholia

The first theme is about how participants view the natural elements in the game as nostalgic and melancholic. This is considered the emotion that most came out during the interview. The majority of the participants felt a deep sense of nostalgia while playing The Witcher game towards an aspect of nature or an environment that does not exist anymore; an element that connects them deeply with specific memories from their past.

In terms of natural elements, the participants described how encounters with fields, shores and rivers untouched by humans transported them back to their past. This sentiment is echoed by many, highlighting the universal appeal of nature's ability to evoke nostalgic memories, serving as a powerful reminder of their roots and the beauty of unspoiled world.

The first element analyzed in this section are the *fields* (Figure 4.1). Among the diverse collection of natural elements explored in this study, fields emerged as a particularly emotional setting, capable of provoking deep feelings of nostalgia and melancholia. Participants recounted moments spent amidst rolling fields of grass and wheat, where this vast area of land served as canvas for memories and emotions.

For instance, to provide a more introspective glimpse into emotional meaning of fields Mark 25-years-old notes that especially at the beginning of the game he felt besides wonder, feelings of nostalgia and melancholia thanks also to the combination with other instruments, such as music, that emphasized even more those feelings: *"And I started just walking out some fields, and they looked so real, that I started like, crying also because of the music, you know?".*

Something similar is said by Ross, 22-years-old, who recalls during the interview some

memories with his family in places very much alike to the ones depicted in the game: *"I used to spend most of summers with my family and then my friends between the fields here close to my house and it felt very nostalgic"*.

Moreover, Dylan 22-years-old adds that the whole small elements in the frame, like the villages and the cities in general combined with the fields, contributed to the nostalgic atmosphere of the game: *"Yeah, this place, yeah, it feels nostalgic. I guess that that's because, you know, it's a village, there are fields"*.

Figure 4.1: Wheat fields – TW3

The second elements of this theme are the *shores* and the *lakes* (Figure 4.2). Participants talked about moments spent by the tranquil shores of lakes, where the meeting of land and water became a metaphor of the intersection of past and present. Whether gazing out across still waters reflecting the colors of a sunset or feeling the cool embrace of the breeze off the lake, these spaces stirred deep emotions tied to reminiscence and longing. Axel, 23-years-old, describes these elements as something that instantly drew his attention while playing: *"I think the most memorable were all elements including water because these shores and lakes are places where you instantly can draw attention"*.

Andrew, 24-years-old, adds that these water elements helped deepen the storyline of the game while still causing this sense of longing into him: *"Like the fields, there's also this small village right next to the lake. And I think there was also this... Like there's a storyline [...] on the wedding that was taking place in that village. And I felt like this place is probably the most nostalgic part for me"*.

Figure 4.2: Miller's Lake (Redania) – TW3 screenshot

Lastly, the third elements of the theme are the *watercourses* (Figure 4.3) who were once untouched by human beings. In this exploration of natural elements, the once-untouched rivers emerged as touching symbols of wilderness and loss, evoking a sense of nostalgia tinged with melancholia. Participants recounted encounters with rivers untouched by human hands, since the game The Witcher is set in a sort of Medieval Age, where the original flow of water suggested the viewers the beauty of wild nature. These rivers, once rich with life and unaffected by human intervention, now serve as a reminder of the fragility of nature and the unstoppable march of time. Lea, 34-yars-old recalls those rivers that she once knew in the past, are not the same any longer, they don't even look like those anymore: "*And currently in Poland I do remember places like that from my childhood, but now the rivers are mostly regulated, so they don't look like that anymore".* On the same note, Ross remembers some of those happy moments when he used to swim in those rivers, very similar to the ones depicted in the game, and the sadness of the fact that they are not like that anymore: "*There were rivers were we used to swim that really looked very similar to the ones in the games so it felt nice, almost sad that most of them don't exist anymore*". Moreover, Lionel 23-years-old just point out how those rivers and the environment in the general portrayed in the game *The Witcher* is an evidence of what Poland looked like may years ago, when nature used to be wild and free from the hands of humanity: "[...] *an entire environment of all games is very, very familiar to me when I... because it resembles somehow what we had here in Poland some time ago".*

Figure 4.3: River - TW3 screenshot

To conclude, all the respondents expressed their connection to these natural elements to a very deep and emotional level. Through their insights it was possible to dive into the meaning of these landscapes, offering a window into the complex interplay between human experience and the natural world. It became clear that nature holds transformative power, capable of stirring the depth of souls and inviting people to reflect on the beauty of transience of the environment and how unhappy this change can be for an individual. Such changes highlight the urgency preserving natural spaces, not just for their ecological value but for the emotional and psychological well-being they may provide.

4.2 Natural elements fostering childhood memories

This section will discuss how these natural elements can foster childhood memories in the participants while playing the game The Witcher. Nature serves as a powerful conduit for connecting with childhood memories, stirring feelings of homesickness. In terms of natural elements, the participants described fields, herbs, mountains and rivers as those small symbols that evoked vivid recollections of carefree days spent exploring their land with a sense of awe and curiosity.

The first elements analyzed are the *herbs* (Figure 4.4). Participants remembered fond recollection of helping mostly their grandparents collecting herbs in their gardens or in the open fields, their fingers and the ones of their loved ones brushing against the leaves as they were learning about their properties and culinary uses. These plants not only stimulated the senses but also served as a gateway to cherish the moments spent bonding with their family.

Samuel, 21-years-old recalls when his family used to apply those herbs on the mosquito bites: "*My family when I was little taught me that this helps if a mosquito bites you*". Sarah 25-years-old remembers her grandmother who used to make syrups out of herbs or when she used to cook different foods while using those plants they had previously collected together: "*It, I don't know, just very, very, very much childhood imagery. If you think about going to your grandma's house, this is something you are going to see. So that's just lovely. And my grandma always made me, in the little jars that were left over from different foods, syrup from herbs*". In the same way, Ross recalls again his grandmother who used to make teas out of them, creating a sense of comfort and longing while he was playing: "*Mostly the fields but now that I think about it I remember to see some herbs while collecting the that I knew from my childhood. My grandma in the mountains used to collect them and make some sort of teas out of them. It's like seeing a familiar sight in a new context, which can be comforting*".

Figure 4.4: photo of Fool's Parsley – TW3

The second element mentioned in the interviews are the *mountains* (Figure 4.5) which emerged as symbols of childhood adventure and exploration but also as symbol of family. Participants affectionately recalled family and friends vacations spent hiking through rails, or family moments of bonding in those environments. Pola 21-years-old remembers how every time she used to see those mountains in the game that very much looked like the ones her grandmother used to live in, her grandmother's tales on mythological creatures came to her mind: "*whenever I was in the mountains, it takes me right back to my childhood, listening to my grandmother's tales of dragons and monsters during our vacations there at*

the family house".

Dylan still remains impressed by the colors and shapes of the mountains while he was playing, evoking those childhood memories he does not think about that often: "*this part of game which is located in a fable world where everything was very colorful, joyful. It affects me in such a way that reminds me of childhood memories in the mountains, the times when one person didn't think about".* Likewise, Lionel feels a connection to those mountains in the game with the real ones because he could remember the family trips in the mountain regions when he was younger: "*[...] because when I'm on a family trip or with my friends and we're... especially in the mountain regions, I can feel like...I basically do the same. I like to stop on my track and just stare into the distance and also feel this connection to this time real nature".*

Samuel, on the other hand, feels that sense of "*slavicness"* as he describes that associated deeply with the village in the mountains he grew up into: "*it's not maybe the slavicness but they looked like the landscapes from the village I'm from. Because I'm from mountains and yeah I like that".*

Figure 4.5: Mountains– TW3

The third element are the *meadows*. Among the various natural landscapes explored in this study, fields emerged as particularly evocative setting for recalling childhood memories. Participants spoke fondly of the wide fields where they spent countless hours running and playing freely as kids, exploring every hidden corner of them. For instance, Lionel shares some childhood memories where he used to play in those fields with his friends: "*Open fields with wheat and all those rural areas, they are very familiar because I still can see somehow in some way that these landscapes, maybe not so ancient right now, but vast fields.*

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When I was younger I definitely did like to play around in the fields. My family had those, I don't know, I think potatoes. [...] I mean, it's always good to see something that you can connect with when you're playing".

This sentiment was echoed by many, highlighting the universal appeal of nature in eliciting memories of joy. Mark simply specifies that he could recall those fields as something he used to see when he was little: "*To me it's definitely the fields, because I come from a very small town, so when I see what I used to see when I was little*". Similarly, Andrew states that the fields in the game looked very similar to the ones from his hometown: "*There's this large field that you visit in the chapter. And the image of that field is very much like the Polish fields that I've seen in my childhood. And I still see them because I'm actually from a small town in Subcarpathia*".

The fourth and last element of this theme are the *rivers*. Participants reminisced about summers spent splashing in cool river waters, and skipping stones across the surface with their friend. Lea remembers that in the game you can encounter a lot of these water elements and that those elements are directly connected to her childhood since she used to swim the river next to her household: "*In the Witcher you can see a lot of rivers, streams, etc. like water. And currently in Poland I do remember places like that from my childhood. [...] My grandmother also lived in a village. I grew up in a village. And my grandmother lived in the really beautiful part of Poland. There's this little town, Kazimierz Dolny, it's very historical, very famous, really pretty, very touristy and my grandma lives right next to it. And there was a tiny stream right next to her house, tiny, just a small, small, small stream, small river, shaded by the trees, ducks swam in it. It was quite dirty, I have to say, because it ran through the village. But it was super pretty*".

It is also interesting for this research to point out that participants, especially Alex when asked if certain natural elements in the game evoked some childhood or past memories, answered that since he is from the city of Krakow, the capital of Poland, he could for sure feel the connection to these elements being mostly Polish but not through direct memories of his past: "*I feel this connection not exactly from my actual memories because most of my life I spent in big city*".

In short, each elements helps evoking cherished moments in the participants life, shaping their game experience and adding a deeper sense of connection between the fantasy and real world. The abovementioned natural elects serve as powerful touchstones, bridging memories and emotions from the past with the immersive environments of the game. This

collaboration not only improves the gaming experience but also create a strong emotional bond with the players.

4.3 Natural elements fostering a sense of familiarity

The following sub-section will discuss how the natural elements in the videogame *The Witcher* often foster a sense of familiarity among the participants. Nature in this case serve as a familiar embrace offering solace and reassurance with also offering a sense of peace and comfort. As the participants moved forward in the game, they could not avoid to notice the way in which nature intertwines with the sense of belonging and rootedness in their country. With regard to natural elements, the participants described woods, landscapes, mud, fields, swamps, and flowers as those elements that suggested a sense of home and belonging that only Polish people could relate to.

The first element are the *woods* (Figure 4.6). Participants discussed about the comforting embrace and familiarity of the forests, mostly because they could recognize how close to their life and experiences, they are or have been. Mark shares that those specific woods encountered in *The Witcher 3: Wild Hunt* are very characteristic of Poland, with the consequence that Polish players could actually feel more comfortable among them: "*The woods in Witcher 3 are especially dense with trees endemic to Poland and as such they also help Polish players to feel more at home in the world of the Witcher*". Likewise, Andrew adds that while playing, the forests from the game resembled a lot the ones from his past feeling very familiar: "*And I thought, like when I was playing it, I thought that the woods in that game, they look so similar to those that I would walk in in my past. And I've kind of had this similar feelings in The Witcher*". Alex states also that the portrayal of forests contributes greatly to the immersion of the game, recalling that it is exactly what you can find in Central Europe in real life: "*I could recognize them as something very close to me. I think it's one of the crucial factors because it's of course on purpose the first few hours you spend in little villages and forests which looks exactly like little villages and forests that you can meet in Central Europe*".

Figure 4.6: forest – TW3

The second element found were the *landscapes*. These landscapes emerged as evocative settings for fostering a sense of familiarity especially thanks to their constant presence, providing a sense of continuity and connection to the participants' country. For instance, Samuel notes how it is not only the *slavicness* of these landscapes that make them look like the one he grew up in, but those elements that he could recognize and connect with while playing:" it's *not maybe the slavicness but they looked like the landscapes from the village I'm from"*. Similarly, Pola recalls how the vineyards and the hills helped her feel more immersed due to the familiarity she felt while playing: "*if I had to really pick one landscape that stands out as the most memorable, it would have to be the vineyards and the hills of... what's the name in English? Toussaint, that's it, in Blood and Wine. There's just something magical and familiar about riding through those landscapes, you know?"*. Dylan adds to the previous notions that he does not have a specific landscape that stood out the most but he could clearly see the resemblance with real world ones: "*I don't think that I have a favorite landscape. But you can also see the resemblance of the real-life ones*".

Then, the element discussed in this section is *mud* (Figure 4.7). Despite the nature of this element, mud became a recognizable touchstone, especially for Lea. She recalls noticing it and points out with a smile how this is a very characteristic aspect of Poland: the presence of a lot of mud:

"*[...] there's a lot of mud. And it's very characteristic of Poland, a lot of mud"*.

The fourth elements are the *swamps*. The swamps held a special significance and are recognized amongst the participants as an important part of the game environment especially in the province of Velen, situated in northern Temeria in the video game. Alex points out how the unique atmosphere of swamps created a spectacular ambience of home despite their eerie reputation: "*walking through the swamps of Velen, like it's a place that has to be unfriendly, dangerous, but yet in this dangerous form, it feels like home*". Similarly, Ross explains how these swamps really felt like an environment he already explored in his past; an environment that despite its eerie and unease air of danger, still provoke in him a very familiar feeling: "*I would say the landscapes that stood out to me as most memorable are the swamps of Velen. There's a sense of unease and danger that permeates the air, making exploration feel tense and atmospheric but also a sense of familiarity you know? Like as If I've been there before. And I would say there are a lot of them as well here in Poland so again it felt familiar*".

Figure 4.7: mud and a swamp – TW3

Next, from the interviews participants pointed out how *flowers* (Figure 4.8) contributed to this sense of familiarity while playing. Even though the majority of the participants did not have a vast botanical knowledge, some of them could recognize specific flowers mostly, as Lea says, by the Polish name the game designers chose to keep in the game: "*Maybe a few. There were a few like flowers or something, but I was like, okay, that might be familiar. I might have seen it, moreover by name*".

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Figure 4.8: Alceas flowers – TW3

Lastly, the *patches*. These elements were already discussed in paragraph 4.1 and 4.2, nevertheless here they are recalled as familiar. For many, the fields evoked familiarity just for the fact that they know their place, their country, they grew up in those fields and so it is very easy to recognize them. For example, Andrew clarifies that watching those fields felt like experiencing his past all over again: "*There's this kind of familiarity while watching those fields, I'm not sure if it's the right word. Like, you know, when you play a game, and it just feels like some parts of your past*". Lionel also refers to those fields with wheat in the game, even though set in an ancient period, as elements that can still be seen nowadays in the Polish countryside: "*But for example fields, open fields with wheat and all those rural areas, they are very familiar because I still can see them now in some way that these landscapes, maybe are not so ancient right now, but still resembled those vast fields in the game*".

In conclusion, through the participants reflection it was possible to gain insights into the ways in which these elements evoke feelings of comfort, belonging, and cultural identity shaping the players perceptions of the world around them. These natural elements serve as anchors, connecting the players to familiar sensations and memories that go beyond the game. The interplay of these elements not only enriches the narrative depth of the game but also highlights the deep impact that natural elements can have on individual identity. This connection underlines the importance of integrating meaningful environmental cues in game design to cultivate a more immersive and rich experience for players, eventually reflecting

the undeniable bond between nature and human beings.

4.4 Natural elements fostering a sense of connection with Polish culture

This sub-section will discuss how natural elements are also able to create a sense of connection with Polish culture in the participants. Participants described how certain natural elements in the game are not only integral party of Poland's natural beauty but also deeply embedded its cultural narratives, folklore and traditions. The participants identified landscapes, birches, circles of stones, grass and bushes, plants, Skellige Isles, the mythological figure of *Leshy*, dirt, rats, the altars by the countryside roads, flower crowns, rowan berries, and lakes as elements that serve as living symbols of the country's heritage, providing concrete connection to the past and a source of national cultural pride.

The first elements some of the participants identified the *birches* (Figure 4.9) as an important element of Polish nature. Birches frequently featured in Polish art, poetry, and folklore symbolizing the persistent spirit of the nation. Participants reflected on the sense of connection to the natural landscapes of Poland. For this reason, during the interview Mark refers to these trees as plants very characteristics in certain area of Poland: "*So birches, very characteristic trees to certain areas of Poland*".
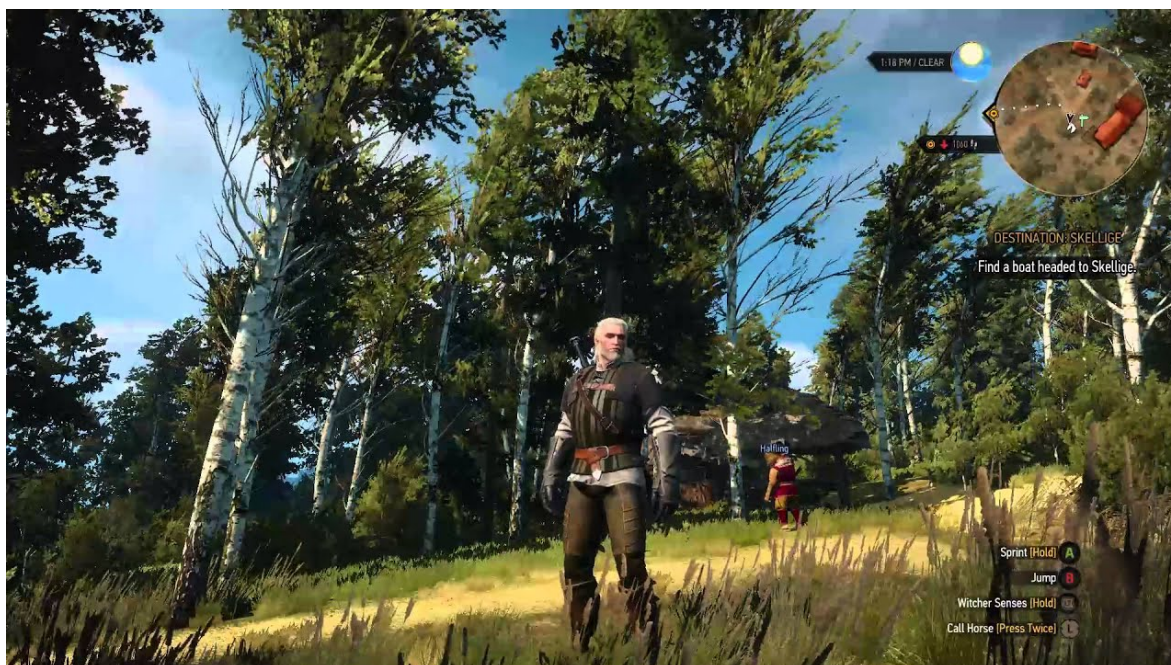

Figure 4.9: Birches – TW3

Subsequently, participants pointed out how in the game the *circles of stones* (Figure 4.10) are featured. These ancient formations are more than just physical structures; they hold deep historical and spiritual symbolism. In Polish culture these circles were associated with rituals and communal gatherings. During one of the quests in TW3, Mark noticed how these stones

formations are still present in Poland, often used for offerings and he recalls how once they were used for offerings: "*In Witcher 3 there are unmarked locations where there are circles of stone, there is nothing there besides stones placed in random formations. However, sometimes there are offerings on such stones - many areas in Poland have such places*".

Figure 4.10: Henge – Circle of stones – TW3 screenshot

The fourth element identified were *grass and bushes*. These aspects of natural landscape are intertwined with the everyday life in Poland, especially during summer in the countryside. Lea pointed out how Poland is mostly a green country during spring and summer, highlighting the connection and the accuracy of the representation of nature in the game: "*A lot of trees, a lot of grass, a lot of bushes. Everything is very green for half of the year, and it's grey for the other half of the year*".

Related to the plant kingdom, Lea also shares how she found out that in Poland there is a particular ancient tree called *Wiedźmin* (Figure 4.11), translated in English into "the Witcher": "*I found the information that in Poland, I can send it to you, there was a very, very old tree, like over 500 years, I guess, called The Witcher, Wiedźmin*". She also adds that she could recognize some of the plants depicted into the game that are in fact real, by their Polish names: "*Most of those plants are real plants you can find in Poland. So, it was nice with Polish names. I of course recognize and know some of them. Yeah. I'm not really even sure how much of them were made up for a game. But at least some were real*".

Figure 4.11: Wiedźmin tree, Gubin (South-West Poland)

Next, *Skellige Isles*. The Skellige Isles, even though they are fictional, were highlighted by the participants as evoking a sense of connection due to their resemblance to real-world Northern European landscapes, including Poland. Participants noted that Skellige Isles remind them of the rich collection of Polish legends and the nation's historical ties to naval and warrior cultures. Samuel refers to how the setting on Skellige was very calm and familiar, so that he could enjoy more the riding while playing: "*But especially when I went to Skellige and I was just riding around this main island. It was just so calm but also it was partially because of the music because I just love them there*".

Another mythological and fictional figure that can be considered as part of nature is *Leshy* (Figure 4.12). Leshy is a mythological figure rooted in Slavic folklore that also emerges as a significant element enhancing the connection between participants and their cultural heritage. This forest spirts, often depicted as the guardian of the woods, evokes a bond between antient beliefs and stories passed down through generations. Leshy was mentioned by quite elevated number of participants, for examples Dylan: "*Well I just mentioned Leshy for example guess that he is part of a nature. He is part of our folklore you know*". Also, Ross recalls, during the interview, when his grandfather used to tell him those stories about this creature, and this immediately reinforced that connection with his own culture: "*the monsters that stand out to me as memorable. They kinda look like real animals but with bits of traditional stories. Most of them are fantasy I know, but for example Leshy is very connected to our culture. It was a story that my grandpa used to tell me all the time when I*

was a kid". For others, like Lionel, it was pleasing to see that finally there where Slavic mythological creatures depicted in a videogame, and that strengthened his pride in the game and his own country: "*I very like that there are so many mythical creatures that are more Slavic based, because it's not something that we see in common in video games, like Leshy*".
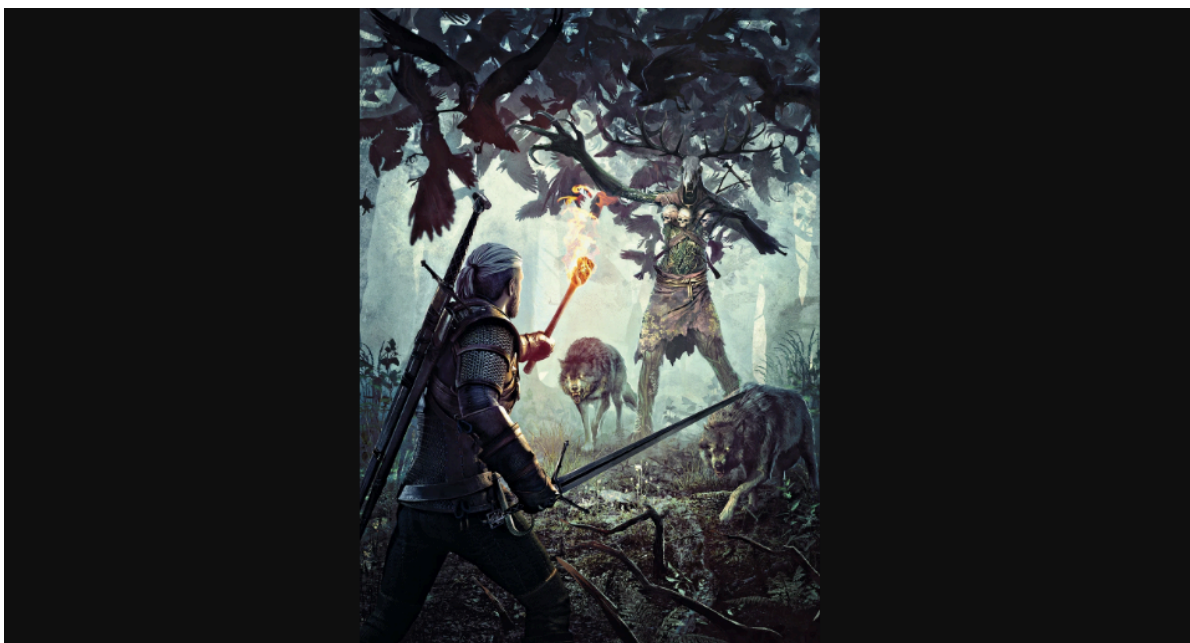

Figure 4.12: Leshy and Geralt of Rivia

Traditions and customs were highlighted by some of the participants. For instance, *altars by the sides of the roads* and *flower crowns* (Figure 4.13) were elements that stood out the most while playing. Roadside altars are often adorned with flowers and religious symbols and are very common in Poland, particularly along roads that lead to small villages, making them a very characteristic component of Polish tradition. Sarah explains how these altars are indeed very popular and are one of those elements that she really likes of her culture: " *[...] There's something I always liked and it's a small thing but you have these little altars by the road while you ride around and it's something that's popular in Poland to this day"*. Regarding the flower crowns they are traditionally crafted for festivals and celebrations. Samuel brings to attention the Polish celebration of *Wianki* in May where it is tradition to let the flower crowns flow on the rivers: "*There's a celebration in May that we call Wianki, which is plural for the flower crowns. Yeah. And it's just about letting them flow on the river"*. Similarly, Lionel recognizes the flowers used for those flowers crowns while playing: "*Maybe a few. There were a few like flowers or something, but I was like, okay, that might be familiar. I might have seen it, moreover by name"*.

Figure 4.13: Aldona Lamch's flower crown at her wedding (Dead's Man Quest)

An element quite important in Poland are also *rowan berries* (Figure 4.14)*,* symbolizing protection a traditional belief. These bright red berries are steeped in folklore and are believed to scare off evil spirits. Samuel noted how these berries are very common in the countryside, where he is from: "*This plant is important in Poland. Because it's a thing that in countryside, people would make jewelry out of these little red fruits. Rowan Berry"*. Lastly there were the *landscapes*. Landscapes emerged as a very clear emblem of Polish heritage, deeply ingrained in the cultural consciousness of the participants. They are seen as a witness of Poland's history and folklore stories. For example, Mark recalls how near his hometown there is a place where is said that the Devil was seen years ago, and that places in TW3 remined of him of that: "*Near my hometown there is a place known as "Piekiełko", diminutive of "Hell" where supposedly a Devil was seen many years ago. It is not a place known outside of the area however all people living nearby know it and visit it. Such places in the Witcher 3 reminded me of Piekiełko"*.

In brief, the various natural elements and mythological figures intertwine with traditions, customs, and cultural practices creating a deep sense of connection with Polish heritage among the participants. Each element serves as thread linking individuals to their cultural roots and the natural world, shaping their sense of identity, pride, and belonging. The deep integration of natural heritage elements helps participants feel a part of something larger, reinforcing their cultural identity and providing a source of pride and continuity in a dynamic and transitional world.

Figure 4.14: Rowan Berries (A Midnight Clear quest)

4.5 Nature experience depending on the season or the moment of the day

This section will examine how the experience of nature varies depending on the season or the time of the day depicted in the game. Stewart (2015) explains in his reflection on the topic how game developers are every year more able to use multiple technologies, designs, and artistic techniques in order to create video games that are increasingly more realistic, providing visual and virtual experiences through nature. Participants highlighted how the changing season bring distinct experiences and emotional responses; for example, spring with its blooming flowers and the nature that comes back to like, or summer associated with warmth, familiarity and childhood memories of summer vacations. Each season has the power of offering a unique sensory and emotional stimulus, shaping the way participants engaged with nature. The moment of the day is also a component of the full immersive experience. As revealed by the interviews, participants as Pola remembers how magical riding through the countryside during sunset (Figure 4.15) made her fall in love even more of her country and *The Witcher* all over again, she could feel that sense of familiarity that only comes by knowing how a specific environment is during a specific time of the day: "*There's just something magical about riding through the countryside, you know? Sometimes during sunset. It's moments like these that make me fall in love with The Witcher all over again*". Sarah continues that the events were located mostly during summer and that gave her a very comforting and familiar feeling: "*[...] So it feels very, very familiar and comforting. The landscape themselves...It feels like a Polish summer at some times,*

especially if you're going around Velen".

Figure 4.15: Sunset – TW3

In conclusion, the dynamic relationship of these temporal factors enriches their connection to the natural world, providing a diverse range of sensory and emotional experiences. This interaction allows individuals to engage with nature on different levels, from the immediate sensation of sight and sound, to the deeper level of reflective emotions that ties to personal and cultural experiences.

4.6 Herbs and flowers in traditional and modern medicine

In this last sub-section will be discussed the dual role of herbs and flowers both in traditional and modern medicines recognized by the participants while playing the game. Herbs and flowers have long been integral to traditional medicine, with many of the participants recalling the so called "grandma's remedies" passed through generations. As Gómez-Baggethun et al. (2010, p.722) and Berkes (2001, p.109) stated, the traditional ecological knowledge and its transmission through generations and local communities, helps in the put into practice of more sustainable practices in order to manage ecosystems and conserving biodiversity at best. The traditional uses often involved home-made teas, infusions, and syrups. The recollection not only highlight the practical applications of these herbs but also emphasize their cultural significance in the players. Pola affirms that while playing she could point at those plants as the ones her mother used to collect for the herbal remedies when she was sick as a kid: "*Some of the plants reminded me of the herbal remedies my mother used*

to make when I was sick". In addition to their traditional uses, herbs and flowers are still employed in modern medicine. Lea explains that there are still people in Poland who use herbs before fully opt for modern medicine, suggesting how nowadays those customs and traditions can still be present and applied to the daily life in the most mundane occasions: "*We have, I mean, we still there are a lot of people who use herbs before they go for modern medicine*".

Finally, this sub-section explored how multifaced the roles of herbs and flowers can be in both modern and traditional medicine and how easier is for the participants to spot them while playing the game. The experience that they have with these specific herbs is a fundamental element that contribute to the connection between them and their natural cultural heritage.

5. Discussion and conclusion

This section will discuss how the research question of the present study has been answered. This study sheds further light on how Polish players perceive certain natural elements in th video game The Witcher. Six comprehensive themes are concluded to answer this study's research question: "*How do Polish players perceive the representation of Polish natural cultural heritage in the video game "The Witcher"?*". Four themes out of the six found during the analysis shown how specific natural elements could provoke different emotions in the players, emotions that went from nostalgia and longing to familiarity and happy juvenile memories. Participants based on their experiences recognized natural elements from memories and experiences connected also with their own culture. As discussed in the theoretical framework, natural landscapes can also play a crucial role contributing to a sense of belonging within a community (Brockerhoff et. al 2022, p.2), symbolizing at the same time national identity, embodying the unique geographical features, biodiversity and natural heritage of a country (Mitchell & Buggey, 2000 p.45). The abundance of responses in particular in the second theme connected to childhood memories, indicating that Champion (2011, p.27) suggestion of creating a feeling of place within the virtual landscape and consequently the rage of emotional responses from players, was particularly relevant for this study confirming the connection of a correct and truthful representation is key of players' engagement. The representation of nature according to Champion (2011, p.29) has the power to evoke memories and associations, hence the landscapes need to have the ability to transmit cultural elements. Through the detailed design of virtual environments, games can evoke feelings of awe, tranquility, nostalgia and familiarity. Participants consistently reported feelings of strong connections to these natural elements within the games. They described how the attention to details sometimes while playing contributed to their level of engagement and the emotional impact of the game.

The last two theme indicated how strong is the connection between cultural background the nature. Theme number five confirmed what De Groot (2010, p.110) noted in his study: the recognition of connection between human beings and their natural environment, identifying the spiritual and traditional values associated with it. The experience of different emotions during specific periods of the year, such as the different seasons, or the time of the day emphasizes how strictly personal the outcomes while playing are. The recognition of plants and herbs from personal experience in the last theme enhances the connection between the real and fantasy world. Newman et al. (2022, p.1) suggest how video games developed with new technology can help players immerse more in the virtual worlds thanks to the dynamic

and realistic ecosystems. Therefore, participants in the interviews expressed a deep sense of familiarity when they encountered virtual flora that mirrored real-world one, evoking also memories from their past. The participants while recognizing specific plants and herbs in the game, confirmed the theory that Ducarme and Couvet (2020, p.1) advocate in their study on the concepts of "biodiversity", "ecosystem", "landscape" and "community". The universal values of these notions are connected to the preservation of their cultural, historical ad natural significance and the confirmation of the fact that players believe they are aligned with real-world natural environments and the distinctive natural elements added in the games. This recognition not only enriched their game experience but also bridged the gap between their everyday lives and the virtual one. By incorporating realistic and identifiable natural elements from a specific demographic, game developers can foster a more immersive and emotionally resonant experience, making the fantasy worlds feel more real and relatable to players.

In conclusion, this study has addressed the research question by revealing the intricate ways in which Polish players perceive the representation of Polish natural cultural heritage in *The Witcher*. The six comprehensive themes derived from the analysis of the emotional resonance and cultural significance of natural elements within the game. The first four themes demonstrate how these natural elements evoke a range of emotions, mostly grounded in personal and cultural experiences. This aligns with the theoretical perspectives discussed in chapter 2, specifically sub-chapter 2.1, on the importance of natural landscapes in fostering a sense of belonging and national identity. The detailed virtual designs of these sceneries effectively transits cultural elements, improving players engagement when these elements are recognized.

Moreover, the final two themes shed light on the deep connection between cultural background and nature. Participants' experiences resonate with how the recognition of familiar plants and herbs bridges the gap between real and virtual worlds, enriching the gaming experience and validating the concepts present by Ducarme and Duvet (2020, p.1) above mentioned. This study confirms that incorporating realistic and culturally significant natural elements in video games can create a more immersive and emotionally rich experiences, making fantasy worlds more relatable and impactful for players. Thus, the research not only highlights the cultural and emotional dimension of the gaming experience but also suggests potential pathways for game creators to focus on players engagement through culture and nature design.

5.1 Theoretical implications

Considering the lack of previous literature about the studies subject of this research, the results of this study have some theoretical implications. This study was able to contribute to existing scholarship by making original findings. Stevens (2020) and other works have investigated the cultural aspect around the game *The Witcher*, such as traditions, music, folklore and architecture. The finding of this study has significant theoretical implication for understanding the relationship between realism and emotional engagement in video games. They suggest how important incorporating recognizable natural elements, such as plant, herbs, rivers, mountains, fields etc. to the immersion and emotional connection of the game. This reinforces the concepts Crowley et al. (2021, p.1231) explained, emphasizing the restorative and evocative power of nature, even in digital forms and the connection this nature has with the players. Furthermore, the study contributed to the broader discourse on the importance of authenticity in virtual environments, indicating that realistic depictions of nature can bridge the gap between real and fantasy worlds, thereby enriching the overall gaming experience.

Lastly, participants' perceptions of dynamic evolving environments in video games that can change with day-night cycles and seasons expand meaningfully on Grassini and Ratcliffe (2023, p.329) evidence of a more realistic "sense of presence" in the games. This aspect is crucial for the present study in terms of highlighting the importance of environmental realism. By incorporating these dynamic elements, game developers can create a more realistic and engaging virtual worlds that resonate deeply with players on a deep and emotional level. The participants' recognition of these features indicate that such realistic portrayals can significantly improve the connection between the player and the game world, making the virtual experience both more impactful and memorable. These changing landscaped not only mimic real-world experiences but also contribute to a sense of continuity and immersion that reinforces the players' sense of presence and belonging within the game.

5.2 Social implications

In terms of social implications, it is fundamental to recognize the potential for video games to promote a deeper connection with nature, even within the current urbanized and technology-driven society. By integrating familiar natural environments and elements in videogames, with a higher attention from the game designers' part, video games can provide players virtual experiences that may enhance their appreciation for the environment and

promote psychological well-being. Additionally, this can be particularly valuable in urban environments where access to nature and natural spaces is limited. Furthermore, this study underlines how video games can be used as a powerful tool for suggesting environmental conservation and inspire real-world efforts among diverse audiences, which can be an essential driver for addressing real environmental challenges. These narratives can raise awareness and motivate players to consider their environmental impact and take action in their daily lives. This approach can help reduce the effects of urbanization by offering a virtual break and a reminder of the importance of nature, ultimately providing a more environmentally conscious and connected society.

Moreover, videogames can serve as educational platforms, providing engaging and interactive tools for players to learn about ecosystems and wildlife. By including accurate and scientific information, developers have the opportunity to create in-game experiences that are entertaining and at the same time also informative.

In conclusion, by offering more immersive nature environments in video games, developers have the opportunity to promote environmental awareness and action to players, who can be as a result more inspired into appreciate and protect the natural world, especially if connected to their own natural cultural background.

5.3 Suggestions for future research and limitations

This section reflects on the limitations of this study and suggestion for future research. In terms of future research, it can be explored a broader range of natural elements and cultural contexts to understand how different demographics perceive and connect with the virtual natural world. This expanded scope would allow future researchers to examine a larger variety of ecosystems, landscapes, and cultural symbols across different Polish video games and genres.

A key limitation of the current study is its reliance of self-reported data, which may be subject to bias. Expanding the sample size and diversity, along with using objective measures, could improve the universality and strength of the findings. A bigger number of participants could bring to the research more insights and perspectives. Most of the participants were also from the countryside, so their contact with nature was on a higher level compared to the participants who are from bigger cities. For this reason, it is recommended for future studies to separate and explore on a deeper level the connection these people have with nature and the impact it has on them while playing. In this research

the majority of respondents were male; it can be interesting for future research to explore on a deeper level the female insights on this topic and compare them in terms of emotionality and sensibility to natural environments.

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Appendix

Appendix A: Interview Guide

Introductory questions and basic demographic details:

   - What motivated you to participate in this study?

   - What is your age?

   - What is your gender (if comfortable in sharing)?

   - Which part of Poland are you from?

   - What is your level of gaming experience?

Introductory questions on The Witcher:

   - Which titles from The Witcher series have you played or have you played the most?

   - Can you describe your level of engagement with The Witcher games?

   - What aspects of The Witcher series do you find most appealing or intriguing?

   - Are there any specific cultural or natural elements in The Witcher that drew your interest while you were playing?

   - What elements of the in-game landscapes stand out to you as memorable?

   - And what about ecosystems and wildlife stand out to you as memorable?

Portrayal of nature in The Witcher:

   - In your opinion, how authentic and accurate are the portrayals of nature in The Witcher games?

   - Have you encountered any in-game references or representations of cultural practices related to nature that resonate with your own cultural background?

   - How do you think the portrayal of landscapes in The Witcher contributes to the overall atmosphere and immersion of the game?

   - Have you ever felt a sense of awe or wonder while exploring the natural environments in The Witcher?

   - Can you discuss any connections you perceive between the natural elements portrayed in The Witcher and your real-world cultural experiences?

   - How do these connections enhance or influence your gameplay experience?

Emotions connected to nature while playing The Witcher:

- Do specific natural elements in The Witcher trigger certain emotions or memories for you?

- If yes, can you elaborate on some examples?

- How do you think the portrayal of natural cultural heritage through natural elements in The

Witcher contributes to the emotional depth of the game?

- Have you ever felt a sense of pride or connection to your cultural heritage while experiencing certain natural elements in The Witcher?

Realism, interaction and accuracy of the representation of nature in The Witcher:
 - Do you think the portrayal of natural cultural elements in The Witcher enriches the understanding of different cultures?

   - Have you engaged with interactive features in The Witcher related to natural heritage, such as collecting herbs or interacting with wildlife? If so, how did you find these features?

   - How do you think the inclusion of interactive features related to natural heritage enhances the gameplay experience in The Witcher?

   - Have you ever been surprised by the level of detail or realism in the interactive features related to natural heritage in The Witcher?

- Do you think there are any responsibilities or ethical considerations game developers should consider when representing cultural and natural heritage in video games? If so, what are they?

   - Have you ever felt a sense of nostalgia while encountering certain natural elements in The Witcher?

   - How do you perceive the balance between real-life accuracy and fantasy in The Witcher's representation of natural heritage?

   - Do you think the inclusion of fantasy elements adds to or detracts from the portrayal of natural heritage in The Witcher?

   - How do you think the balance between realism and fantasy in The Witcher affects your suspension of disbelief while playing the game?

Additional Thoughts:
   - Is there anything else you would like to share regarding your gaming experiences, perceptions of The Witcher, or the portrayal of natural heritage in video games?

   - How do you think the portrayal of natural heritage in video games like The Witcher can influence players' perceptions and attitudes towards real-world environments?

Appendix B: Coding Tree

THEMES	SUB-THEMES	EXAMPLES
1. Natural elements fostering nostalgia and melancholia	Fields	*Mark (25yo) And I started just walking out some fields, and they looked so real, that I started like, crying also because of the music, you know?*
	Shores and Lakes	*Axel (23yo) I think the most memorable were all elements including water because these shores and rivers are places where you instantly can draw attention. They're not like this anymore you know?*
	Untouched nature (watercourses)	*Lea (34yo) And currently in Poland I do remember places like that from my childhood, but now the rivers are mostly regulated, so they don't look like that anymore.*
2. Natural elements fostering childhood memories	Meadow	*Mark (25yo) To me it's definitely the fields, because I come from a very small town, so when I see what I used to see when I was little.*
	Herbs	*Samuel (21yo) My family when I was little taught me that this helps if a mosquito*

		bites you
	Mountains	*Dylan (22yo)this part of game which is located in a fable world where everything was very colorful, joyful. It affects me in such a way that reminds me of childhood memories in the mountains, the times when one person didn't think about.*
	Rivers	*Lea (34yo) In the Witcher you can see a lot of rivers, streams, etc. like water. And currently in Poland I do remember places like that from my childhood.*
3. Natural elements fostering a sense of familiarity	Woods	*Mark (25yo) The woods in Witcher 3 are especially dense with trees endemic to Poland and as such they also help Polish players to feel more at home in the world of the Witcher.*
	Landscapes	*Samuel (21yo) it's not maybe the slavicness but they looked like the landscapes from the village I'm from.*
	Mud	*Lea (34yo) [...] there's a lot of mud. And it's very*

		characteristic of Poland, a lot of mud
	Patches	*Andrew (24yo) There's this kind of familiarity while watching those fields, I'm not sure if it's the right word. Like, you know, when you play a game and it just feels like some parts of your past.*
	Swamps	*Axel (23yo) walking through the swamps of Velen, like it's a place that has to be unfriendly, dangerous, but yet in this dangerous form, it feels like home*
	Flowers	*Lionel (23yo) Maybe a few. There were a few like flowers or something, but I was like, okay, that might be familiar. I might have seen it, moreover by name*
4. Natural elements fostering a sense of connection with Polish culture	Birches	*Mark (25yo) So birches, very characteristic trees to certain areas of Poland.*
	Circles of stones	*Mark (25yo) In Witcher 3 there are unmarked locations where there are circles of stone, there is nothing there besides stones placed in random*

		formations. However, sometimes there are offerings on such stones - many areas in Poland have such places.
	Grass and bushes	*Lea (34yo) A lot of trees, a lot of grass, a lot of bushes. Everything is very green for half of the year, and it's grey for the other half of the year.*
	The Witcher tree	*Lea (34yo) I found the information that in Poland, I can send it to you, there was a very, very old tree, like over 500 years, I guess, called The Witcher, called Wiedźmin*
	Skellige Isles	*Samuel (21yo) But especially when I went to Skellige and I was just riding around this main island. It was just so calm but also it was partially because of the music because I just love them there.*
	Leshy	*Dylan (22yo) Well I just mentioned Leshy for example I guess that he is part of a nature. He is part*

		of our folklore you know
	Dirt	*Dylan (22yo) But it takes in a city which is somehow inspired by the medieval city. There's dirt everywhere, homeless people, rats and so on.*
	Rats	*Dylan (22yo) But it takes in a city which is somehow inspired by the medieval city. There's dirt everywhere, homeless people, rats and so on.*
	Altars by the road	*Sarah (25yo) [...] There's something I always liked and it's a small thing but you have these little altars by the road while you ride around and it's something that's popular in Poland to this day.*
	Flower crowns	*Samuel (21yo) There's a celebration in May that we call Wianki, which is plural for the flower crowns. Yeah. And it's just about letting them flow on the river.*
	Rowan berries	*Samuel (21yo) This plant is important in Poland. Because it's a thing that in*

		countryside, people would make jewelry out of these little red fruits.
		Rowan Berry.
5. Nature is experienced differently depending on the season or the moment of the day	Sunrises and sunsets	*Pola (24yo) There's just something magical about riding through the countryside, you know? Sometimes during sunset. It's moments like these that make me fall in love with The Witcher all over again.*
	Summer season	*Sarah (25yo) [...] So it feels very, very familiar and comforting.*
		The landscape themselves...It feels like a Polish summer at some times, especially if you're going around Wellen
6. Herbs and flowers are used both in traditional and modern medicine	Grandma's remedies	*Pola (23yo) Some of the plants reminded me of the herbal remedies my mother used to make when I was sick.*
	Ancient medicine	*Sarah (25yo) We have, I mean, we still there are a lot of people who use herbs before they go for modern medicine.*

Appendix C: Information and consent form

Investigate Polish players perception of the natural elements in the game The Witcher

Introduction

Dear participant,

I am Aurora Cozzi, and I am doing research for my final Master Thesis at Erasmus University Rotterdam. I am conducting research on the perception of Polish players of the natural heritage in the videogame The Witcher.

I will explain the study below. If you have any questions, please ask me. While reading, you can mark parts of the text that are unclear to you.

If you want to participate in the study, you can indicate this at the end of this form.

What is the research about?

This master thesis aims to explore the significance natural heritage representation in video games, in concrete how players perceive this representation. This thesis focuses on the representation of natural heritage in the Polish game "The Witcher," which has gained a global fan base over the past years. The Witcher series, with its roots in the fantasy world created by Polish author Andrzej Sapkowski, is inspired by diverse aspects of Polish history and folklore. Through this, The Witcher not only delivers a gripping narrative but also serves as a platform for players to immerse themselves in a world intricately laced with the rich natural heritage of Poland. The portrayal of landscapes, ecosystems, and wildlife in games like "The Witcher" contributes to a shared cultural experience, influencing the way players perceive and connect with the natural world. This research seeks to bridge the lack of research on natural cultural heritage by focusing on "The Witcher", by unravelling the relationship between the representation of natural heritage and Polish players' perceptions, aiming to recognize how digital portrayal of Polish natural elements relates to their conceptualization of cultural and national identity and the dialogue surrounding the relationship between nature, identity, and the virtual spaces of contemporary gaming.

Why are we asking you to participate?

I would like to learn more about the personal perspectives and reactions to a very well-known video game. I believe that you can help me by telling me what you think about it.

What can you expect?

If you participate in this study, you will take part in:

<u>An interview</u>:

All interviews are conducted in the time frame of two weeks (6/04-18/04 2024) and each cover approximately between 40 and 60 minutes. Each interview is recorded (only for research purposes) and all your personal information will remain anonymous. The platform Jitsi Meet will be used since there's no need for the participant to register in any case and it offers the possibility to record the interview. In these interviews we will start with a series of introductory questions, then we will discuss your individual viewing behavior, focusing the connection and how you engage with the natural cultural elements portrayed in video games, in particularly The Witcher. The interview process will then conclude with a set of questions delving into your gaming experiences and reflections on the authenticity of the portrayed natural heritage.

At the end of the interview/discussion, you will have the opportunity to comment on your answers.

You decide whether to participate.

Participation in this study is completely voluntary. You can stop at any time and would not need to provide any explanation.

What are the potential risks and discomforts?

I do not anticipate any risks or discomforts while participating in this study.

What do you get for participating? / What are the benefits of participating?

Since the participation is totally voluntary, there are no immediate, or financial benefits for participating in the study. However, sharing your experiences will shed more light on the topic concerning with also heling me conduct this research.

What data will I ask you to provide?

I will store your contact details so that I can be in contact with you. For the study, I will keep the personal information anonymous, using only the answers you are going to give me in the Results section (again, without mentioning your name or any data related to your persona) During the interview, I will ask you about the following personal data: name, age, gender, cultural background, ethnic background, sentiments about / feelings about / opinions about the topic, gaming experiences.

At Erasmus University, we conduct scientific research. We do this to learn, help people, and contribute to society. Since we are an academic institution conducting scientific research, we process your personal data exclusively for research on the basis of public interest.

Who can see your data? / What will happen to my data?

- I store all your data securely.
- Only persons involved in the research can see (some of) the data. [Only the principal investigator has access to your data such as your name and the other personal information].
- Recordings are transcribed. Your name is replaced with a number/made-up name.
- Data such as your name and the direct personal data) will be stored separately from your answers and the transcription.
- We will write an article about the results of the study which will be published (publicly share the results) in (academic) journals and/or books. The results will be accessible by anyone, but your **name will not be shown**.
- We may use your specific answers in the article. If your answer can be traced to you or we would like to mention your name, we will ask your permission first.

How long will your personal data be stored?

Your data will be retained for 10 years after completion of the research. We retain the data so that other researchers have the opportunity to verify that the research was conducted correctly.

Using your data for new research

(Part of) the data we collect may be useful in anonymized form, for example for educational purposes and future research, including in very different research areas. We ensure that the data cannot be traced back to you/we do not disclose anything that identifies you.

In addition, your personal data [, excluding name, mail address, ... recordings] may be used for follow-up or another scientific research. The data shared are (potentially) traceable to you/pseudonymized. You have the right to object to further use by contacting me.

Do you have questions about the study?

If you have any questions about the study or your privacy rights, such as accessing, changing, deleting, or updating your data, please contact me.

Name: Aurora Cozzi

Email: 698009ac@eur.nl

Name supervisor: Teresa De La Hera

Email: delahera@eshcc.eur.nl

Do you have a complaint or concerns about your privacy? Please email the Data Protection Officer (fg@eur.nl) or visit www.autoriteitpersoonsgegevens.nl. (T: 088 - 1805250)

Do you regret your participation?

During or after the study, you may regret your participation. Please indicate this by contacting me. Deleting your data is no longer possible if the data has been anonymized, making it impossible to trace which data came from you. Anonymizing the data is done within a few hours period after the data was collected.

Declaration of Consent

I have read the information letter. I understand what the study is about and what data will be collected from me. I was able to ask questions as well. My questions were adequately answered.

By signing this form, I:

1. consent to participate in this research.
2. confirm that I am at least 18 years old.
3. confirm that I understand that participating in this research is completely voluntary and that I can stop at any time.
4. confirm that I understand that my data will be anonymised for publication, educational purposes and further research; and
5. confirm that I understand that some of the data can be used for further research.

Check the boxes below if you consent to this.

Audio recording
I consent to [the interview] being audio recorded.

Visual recording
I consent to [the interview] being filmed.

New research
I give permission to be contacted again for new research.

My answers in the article
I give permission for my answers to be used in papers, such as an article in a journal or book. My name will not be included, but the answer may be indirectly traceable to me.

My answers in the article with my name
I give permission for my name to be used with my answers in an article.

Name of participant: _____

Participant's signature: _____

Date: _____