

# Ubisoft's Notre-Dame: Digital Gaming for Material Heritage's Sake

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## Abstract

In 2019, the Notre-Dame de Paris was devastated by a fire. The importance of the Notre-Dame as world heritage was underlined by the countless contributions, donations and solidarity all around the world that pledged to help to rebuild the cathedral. Among all contributions Ubisoft's idea to offer its game *Assassin's Creed: Unity* for free to the public was arguably most celebrated as an innovative and creative measure to secure Notre-Dame's heritage in case of its destruction. This case opens up new perspectives and roles of heritage management as it relates to the development and distribution of video games in the 21st century. The case of *Ubisoft's Notre-Dame* is discussed in this paper under a comparative analysis with the game *Never Alone*, along with a critical inquiry towards the benefits, consequences and repercussions of the growing importance of synchronising heritage protection with video game production. The perceptive aspect of connecting to heritage as a player through a game and its spatial aspects will also be explained under Chapman's concept of *narrative gardens*.

## Author Keywords

Notre-Dame; Ubisoft; Assassin's Creed: Unity; Digital Heritage; Game Studies

## Introduction

The horrific news of the fire that destroyed parts of the Notre-Dame in April 2019 shook the world. The fire caused irreparable damages and forced the world heritage cathedral to shut its doors to the public for an undefined period (CBC, 2019). It may be argued that other than outright destruction, there is little worse for material heritage than being forgotten through inaccessibility. While reparations and restorations by specialists are in process, the video game publisher Ubisoft captured global attention with its gesture of gifting its game *Assassin's Creed: Unity* to the public for free (Forbes, 2019). *Unity* contains a remarkable digital reconstruction of the Notre-Dame, giving people the chance to continue to visit and interact with the monument in a vibrant virtual environment. It is the first documented instance of a publisher directly addressing an emergency of heritage-destruction through the provision of a virtual substitute in the form of a digital game. This case clearly shows that the game industry can provide effective measures in preserving and promoting cultural heritage beyond its material existence. In this case it means not

only the storage and display of a faithful representation of the cathedral but also its popularisation through marketing and accessibility. This opens up completely new perspectives and possibilities on the conservation, protection and understanding of cultural heritage through digital games in the 21st century.

In this paper I compare the case of *Ubisoft's Notre-Dame* with the game and concept of the puzzle-platformer indie game *Never Alone* (Upper One Games, 2014), which provides a suitable comparison in how heritage can be preserved and promoted through a video game. The game was developed under the preface of a native American community trying to stop the decline of its cultural identity among younger generations (Cook Inlet Tribal Council, 2017, pp. 21-24). This section will highlight the importance and effectiveness of maintaining a cultural memory of heritage through digital games.

The case of *Ubisoft's Notre-Dame* will be discussed under Adam Chapman's concept of *narrative gardens* (Chapman, 2016, pp. 101-104). This concept discusses how people perceive historical narratives and cultural information in the form of its spatial visualisation within a game. In addition to Chapman's concept, current research on treating games as spatial representations is used (Aarseth & Günzel, 2019). Another section is dedicated to a critical outlook on negative outcomes from the collaboration between the gaming industry and heritage practice. The final section is dedicated to a critical conclusion, including how prospective benefits may also be concerns for the future of a digital heritage practice.

The greater issue in involving industrial stakeholders in the preservation and interpretation of heritage is their intrinsic capitalist agenda. While companies such as Ubisoft may tangibly contribute to the rescue of heritage, it comes at a cost, which is the return-on-investment that they seek for their involvement. Every form of corporate funded cultural project such as heritage preservation will ultimately aim at driving revenues through self-advertisement. In the case of video games this can happen by painting a distorted image of the corporation's national and cultural identity to make players view them more favourably, which amounts prospectively to a form of consumer loyalty. On the other hand, a corporation's financial involvement can have a critical impact on the material preservation of heritage by increasing awareness and tourism for a site such as the Notre-Dame, which can lead to financial benefits that can in turn be reinvested into restoration and maintenance.

### **Ubisoft's Notre-Dame**

The case of *Ubisoft's Notre-Dame* encompasses a sequence of entangled events that include the destruction of the famous French cathedral by fire in April 2019 and the following digital substitution of the monument by the video game developer Ubisoft.

The Notre-Dame de Paris is a Gothic cathedral which was built and completed in the High Middle Ages (1160-1260). This monumental cathedral has been since then modified, expanded, and due to other past destructions several times restored. Notre-Dame is a key monument in architectural history that has become iconic of Gothic architecture (Millon & Frazer, 1965, p. LIX). Due to its history and international fame, the monument served as a substantial and reliable generator of tourism for Paris.

On the 15<sup>th</sup> of April in 2019 a fire broke out and engulfed various architectural features and elements in its flames. While most structures of stone were only damaged, many wooden features including the roof, interior furniture and adornments were irretrievably destroyed. Consequently, the cathedral has been closed to the public while restoration by specialists takes place (Figure 1a). The cathedral is projected to be re-opened no later than 2024 (Macias, 2020). Shortly after the initial fire many public and corporate figures like the owners of Louis Vuitton or Gucci started pledging million-fold donations to support its restoration. This created mixed feelings among the public as the destroyed cathedral seemed to be exploited for reckless publicity stunts (Chakraborty, 2019), especially when considering that most of the pledged donations were never actually made (France 24, 2019).

On the 17<sup>th</sup> of April the French game developer Ubisoft decided to contribute in its own way: gifting its game *Assassin's Creed: Unity* for free. *Unity* is an action-adventure video game released in 2014. Set in 18th-century Paris during the French Revolution, *Unity* empowers players to explore a detailed and relatively realistic depiction of the city. The game follows the story of Arno Dorian, a young assassin seeking redemption and vengeance in a time of political upheaval and social unrest. As Arno, players navigate the bustling streets, iconic landmarks, and intricate interiors of Paris, encountering historical figures and participating in key events of the French Revolution. One of the major landmarks in the game is an impressive 3D reconstruction of the Notre-Dame (Figure 1b).

To recreate the Notre-Dame, Ubisoft employed a combination of historical research, architectural expertise, and digital technologies. They gathered detailed reference materials, including photographs, drawings, and historical documentation, to ensure accuracy in the recreation process. Additionally, they collaborated with art historians and architects to gather insights into the cathedral's intricate details, architectural style, and historical significance (Polygon, 2021).

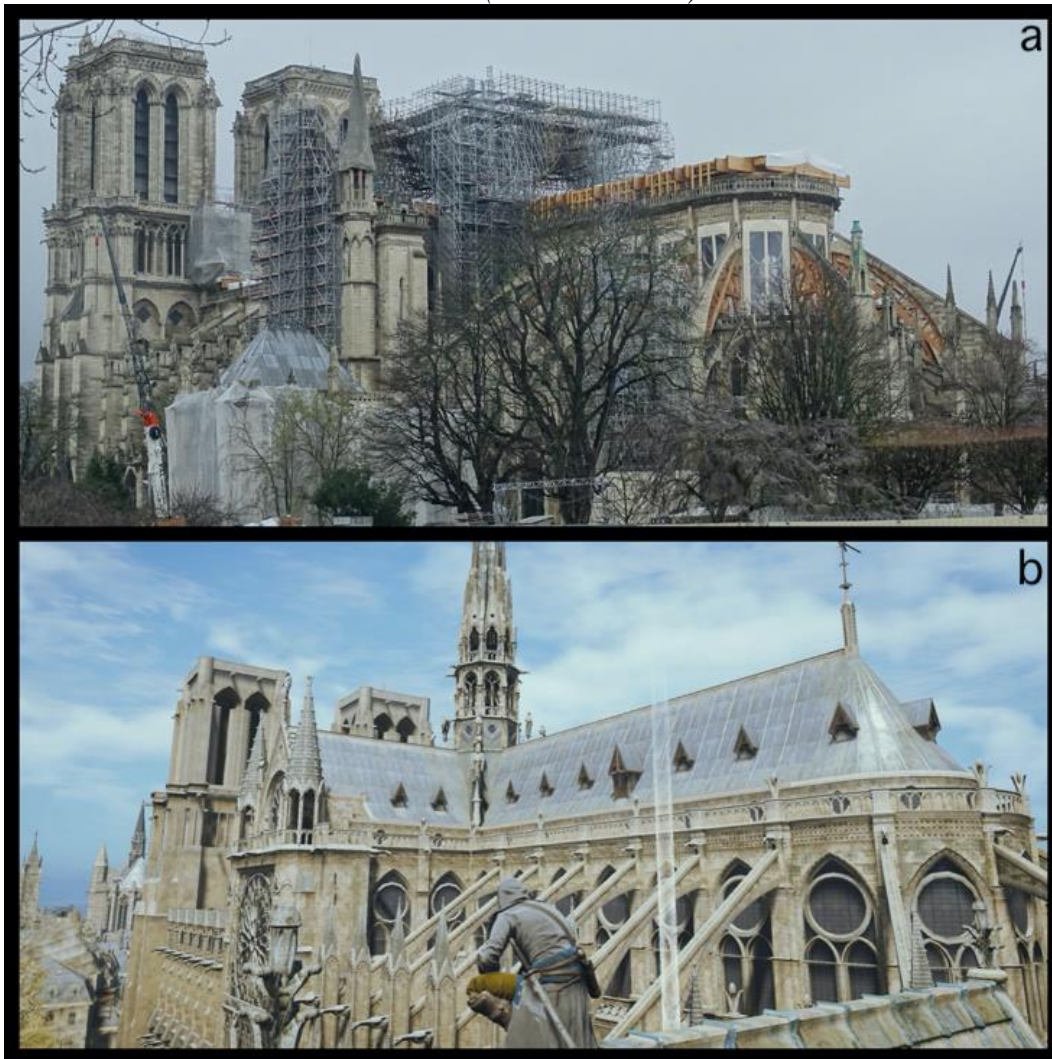
Ubisoft utilised a technique known as photogrammetry to capture high-resolution images of the real Notre-Dame. This involved taking numerous photographs of the building from various angles and then using specialised software to reconstruct a digital 3D model based on the collected data. The team of artists and designers at Ubisoft then worked to implement the digital model into the game engine, paying attention to the finest details, such as stained glass windows, sculptures, and the overall ambiance of the cathedral. They aimed to replicate both the interior and exterior of the Notre Dame Cathedral as faithfully as possible, while also ensuring

consistency within the in-game world in terms of appropriate dimensions, causing the virtual cathedral to be smaller than the real one.

Even though the reconstruction is more artistic in nature the careful research and work undertaken by the game's designers in collaboration with (art) historians created an unmatched digital model of the cathedral that can be accessed and interacted with (GamesCentral, 2019).

### Figure 1

(a) While the real Notre-Dame stays inaccessible, (b) why not visit its digital version? (© B. Hanussek)



Ubisoft declared that *Unity* would be part of a give-away lasting one week, showing solidarity and appreciation for the landmark cathedral and all its admirers around the world (Ubisoft, 2019). The game should, therefore, serve as a lasting connection between the public and the actual landmark. Additionally, 500,000€ were pledged as an effective measure to forward restoration works (Forbes, 2019).

The gesture was well received by players, leading to Ubisoft getting “review-bombed” with hundreds of positive reviews and thankful messages (Miller, 2019). The following influx of players led even to a need to increase server capacities for *Unity* (James, 2019).

The latest event surrounding the case saw an exclusive VR experience that the developer offered to the public during the European Heritage Days in September 2019 at the UNESCO headquarter in Paris. “[T]he interior of the cathedral and an outside look at it from a hot air balloon floating above were seen in the VR tour. The whole experience was based on the recreation of Notre-Dame found in *Assassin’s Creed: Unity*” (Dedmon, 2019).

*Ubisoft’s Notre-Dame* shows a unique case in which a video game developer was capable of addressing the alarming event of destroyed heritage in a meaningful way. Offering a game with an interactive digital representation of an internationally recognised monument for free was warmly received by the public. To offer additional monetary support for the cathedral’s restoration helped to soften the suspicion that Ubisoft tried to capitalise on the event, in light of the fact that it also managed to temporarily revive a game of fading popularity, namely *Unity* (Google Trends, 2020). This case may have even pitched a further involvement of the game industry in benevolent contributions towards alarming events, such as the recent case of ravaging Australian bushfires (Batchelor, 2020).

### **Never Alone: Digital Heritage Preservation**

Capitalism and the rise of Western culture may have increased wealth, living standards and the significance of leisure activities in our lives. Nevertheless, the speed at which traditional cultural legacies are abandoned and forgotten is alarming.

In 2014 the indie game developer Upper One Games released *Never Alone*, “a-first-of-its-kind video game based on traditional Iñupiaq stories, made in collaboration with the Iñupiaq community” (Cook Inlet Tribal Council, 2017, p. 21). The puzzle-platformer adventure game (Figure 2) is based around a tribal story of the Iñupiaq. The Iñupiaq are an indigenous Alaskan people who are affiliated with the CITC (Cook Inlet Tribal Council), a non-profit organisation that supports American Indian people in Southcentral Alaska with education and employment services. Besides offering practical solutions for its people the CITC has been also concerned with the preservation of its native culture and heritage (Cook Inlet Tribal Council, 2017, p. 22).

#### **Figure 2**

*Encountering the harsh arctic environment as Nuna with her Arctic fox companion (CC)*



It is important to mention that North American indigenous cultures as the Iñupiaq are oral-based. Most of their cultural identity is preserved in their spoken language and their practised customs. This kind of intangible heritage is reliant on *Memoria*, the constant remembering and repetition of culture through ritualistic gatherings, music, dance and storytelling (Assmann, 1992, p. 52). If not continuously practised, oral-based cultural heritage can cease to exist within a few generations, as they may also leave little lasting tangible artefacts in the form of monuments or stone architecture behind.

After recognising an increasing detachment between the natives' younger generations and the tribes' cultural heritage, the CITC was concerned with finding an effective medium to not just preserve but also propagate its cultural legacy. Surprisingly, the council decided to find a developer who would create a video game for them. The game should incorporate important visual traits of the Iñupiaq culture and contain its cultural narratives, while offering a fresh and modern aesthetic (Cook Inlet Tribal Council, 2017, p. 23). The CITC ended up collaborating with the edutainment publisher E-Line, who hired Upper One Games to develop the game. During the development process, E-Line exerted great efforts in trying to mediate between the expectations of the CITC and contemporary market demands. The development was therefore supervised by several "cultural ambassadors", natives consulting the development team in questions of design and content (Cook Inlet Tribal Council, 2017, p. 25).

After nearly three years of development, the game was released in November 2014 for Steam PS4 and XboxOne. "Initially garnering 2.2 million downloads ... , subject of over 750 feature articles ... , consistently rated with 4.5 or 5 out of 5 stars" (Cook Inlet Tribal Council, 2017, p. 28) and receiving two BAFTA awards, the game launched with remarkable acclaim. Part of the game's success has been gained through a smart marketing campaign in which the story behind the game and its creation was staged for several short documentation movies (Cook Inlet Tribal

Council, 2017, p. 26), reminiscent of Ninja Theory's campaign for *Hellblade: Senua's Sacrifice*.

*Never Alone* turned out to be not just a success from an industry perspective, but also from a heritage standpoint. The CITC managed to take effective measures to conserve its cultural trademarks of language and aesthetics, and promoted them successfully among its newer generations and even a global audience.

### Ubisoft's Notre-Dame X Never Alone: A Comparison

Heritage can be overall seen as "meaningful pasts that should be remembered" (Kusek & Purchla, 2018, p. 9; after Macdonald, 2010, p. 1). In the case of Ubisoft's Notre-Dame *tangible heritage* is unintentionally preserved while with *Never Alone* we encounter the intentional preservation of *intangible heritage* through a digital game.

Tangible heritage includes artefacts, buildings, structures, landscapes, cities and towns [...] It includes their location, relationship to the natural environment and the materials from which all these are made [...]. Intangible heritage includes the practices, representations, expressions, memories, knowledge and skills that communities, groups and individuals construct, use and transmit from generation to generation. (Macmillan, 2015, p. 96)

Ubisoft most likely did not consider the preservation of heritage through its game as an argument for its initial development. On the other hand, *Never Alone* was besides obvious commercial reasons intentionally developed for the preservation of heritage.

That being said, a comparison makes still sense. Both cases resulted in the preservation and successful promotion of cultural heritage through a digital game. Both kinds of heritage are technically now frozen in time, accessible on-demand and accessible from almost every place on the planet. These games serve as records of reconstructed cultural heritage, while also preserving characteristic aspects of the era in which these games were developed (i.e., graphics or language) (Reinhard, 2018a, pp. 164-165). They both, therefore, strongly represent how this kind of heritage is thought of and imagined during the design process of the game by its developers. Consequently, both games contain subtle "ideological underpinnings of the technolog[y]" and the industry they are part of (Vie, 2016, p. 57).

Nevertheless, these games offer also the possibility to actively engage with endangered heritage, whilst giving players the possibility to craft their own perspective, narrative and connection towards it. In the process, they are advancing the democratisation of knowledge in the context of heritage, and depriving *Grand Narratives* of their interpretational hegemony (Holtorf, 2017, pp. 2-3). Stories of

the Iñupiaq can be now played instead of only being heard, the Notre-Dame can be now be explored by climbing and peeking into every nook and cranny rather than just looked at. One can speak of a kind of *transheritage*: monuments and customs transcending their original forms of mediation. Through such an approach, heritage can be transformed, and its remembrance rekindled.

It is important to stress that both games were developed with consulting specialists. While Ubisoft had consulted with historians for *Assassin's Creed: Unity* (Beer, 2014), *Never Alone*'s development was shaped by the cultural ambassadors E-Line had appointed. The involvement of heritage experts strengthens the position of these games as legitimate carriers of preserved heritage. Both games are also embraced by a strong and satisfied user community. Lastly, it can be said that both games have proven extremely successful in living up to the expectations of not just heritage practice but also video game industry standards. The commercial success of such an involvement is a necessity for a corporation's financial engagement in heritage preservation. If corporations, which are intrinsically capitalist enterprises, do not see a tangible benefit in these forms of involvement they will disengage, and while they might not impact them too much, for heritage sites this will be a painful lost opportunity. In the sense of Mark Fisher's post-capitalist philosophy, we must be willing to find neutral ground in which non-/capitalist entities collaborate for the sake of a meaningful future (2021). An estrangement between heritage institutions and private enterprises will have mostly negative implications for the former but very little for the latter.

### **Perceiving the Past through Digital Space: Narrative Gardens**

Researchers have studied how games affect us cognitively (Hodent, 2017), socially and culturally (Muriel & Crawford, 2018). Yet, studying how games affect our understanding of the past, history or heritage seems difficult in light of undefinable measuring parameters. Individual understandings of cultural legacies vary from geographic location to gender and its clear value isolated from political and educational frameworks is hard to assess (Meskell, 2018). Still, humanity's obsession with its ancestral past seems bottomless. So, instead of trying to define the complex intellectual needs of relinking with ones' ancestors, the question of how digital encounters with the past can change our understanding in comparison to more traditional or analogue ways of engaging seems more suitable to ask.

“Space determines what historical narratives the game can support by structuring what can be done by players and by functioning as a means of storytelling for developers.” (Chapman, 2016, p. 100). Space can be utilised as a means of transmitting specific (historical) information to the player, transforming into what Chapman calls a *narrative garden*. (Chapman, 2016, p. 101). These spatial structures are used by some games as a form of environmental storytelling. Looking at the *Assassin's Creed* Games in general, which all contain historical buildings and monuments within relatively huge in-game worlds, one can experience cultural aspects of the past presented as a holistic organism (Chapman, 2016, p. 103). While



traversing the games' space we encounter a composition of historical clues embedded in buildings, objects, and of course characters. These entities relate to each other to formulate an experience of a particular past.

The Notre-Dame in *Assassin's Creed: Unity* and its relation to other objects inside its *narrative garden* determine our perception of the game setting's historical epoch. While a barren 3D model of the cathedral may suggest a general and timeless impression, French flags and chaotic conditions in the interior enable the player to perceive the era of the French Revolution (Figure 3). A monument and a snapshot of its historical biography is preserved and can be spatially encountered.

### Figure 3

*Vive la révolution: Comprehending an aspect of the French Revolution through Ubisoft's Notre-Dame* (© B. Hanussek)



But does one feel the *aura* of the original which Walter Benjamin described as having the authentic and biographic quality of a piece of art which is embedded in its historical context (1989)? Does one feel the monumentality in contrast to one's actual body? The game mostly communicates its thematic (i.e., historical, social and cultural) and ludic (i.e., options of movement or interaction) aspects through its space, yet the undefinable enchantment of standing inside/in front of a monument may escape the impression of the player. It may be argued that a central impression of a digital monument, located in an interactive environment, remains a (historical) narrative as a mere representation of itself (Dubbelman, 2019, pp. 78-79).

It is also important to mention the aspect of movement here. In games, “[i]mages are not only seen, but made/produced. The journey of the player is the key element in the production process of the digital-virtual computer image [...] Space in videogames [is] constructed by the player's movement in the game world” (Teilhaber, 2019, pp. 62, 64). As space holds thematic information for the player, it is at the same time being created by the player's individual interaction. Fostering eventually a very personal relation to what the player encounters.

Compared to *Unity Never Alone* offers a different kind of narrative garden due to its dimensionality. Being a 2D game, players experience the spatial narration in a side-scrolling and linear fashion, causing their agency to be limited to a two-directional traversal (players can move either forwards or backwards). However, the 2-dimensional world in *Never Alone* communicates its narrative through its visual qualities and textures, as in any 3-dimensional game. This means that the traversable environment, background scenery, characters and in-game objects allow players to perceive the representation of the Cook Inlet tribe's oral-based culture and heritage, though eventually not in as memorable a way for players as in *Unity*, since players mostly see and hear rather than interact with the narrative garden.

### **A Material Wolf in Digital Sheep's Clothing**

While positive aspects seem present in the collaboration of gaming and heritage, underlying concerns must be addressed as well. Ethical or even legal questions concerning user data and privatisation of heritage have to be addressed "to illuminate power relations and networks of production to interrogate ideological systems that may not be in the best interest of the people involved" (Conway & de Winter, 2016, p. 3). The following aspects may seem premature and highly theoretical, yet observing how even lawmaking struggles to keep up with the ongoing digitisation of our society make these concerns reasonable to mention.

The practice of heritage preservation and promotion in Europe rely mostly on governmental and EU funding. It can be said that cultural institutions which rely on this kind of funding are not under immense financial pressure. Within this framework heritage is preserved for its own sake, but what if less recognised cultural legacies cannot be integrated into these frameworks? In these cases, other means need to be considered to ensure the survival of these legacies. The games industry operates differently since it produces cultural artefacts in the form of video games, but has no interest in preserving them beyond their commercial capabilities. Commodification, annual growth and consumer capitalisation are vital processes of every capitalist enterprise (Dyer-Withford & de Peuter, 2009). Aspects of heritage preservation may be tools to achieve a better public image that contribute to better sales figures in the long run but are nonetheless not necessary for the survival of capitalist corporations.

In the case of *Never Alone*, we can see how industrial practices and heritage preservation may result in a successful synergy. Commercial success and international recognition are achieved while heritage is preserved, promoted and its integrity protected. This achievement is based on the checks and balances between the publisher E-Line and the cultural ambassadors of the CITC. The interests of both parties are met. If we think of Ubisoft's representation of *Notre-Dame* within *Unity* we encounter a case that has already departed from these checks and balances. Ubisoft is idealised (by its online community) as a preserver of world heritage and receives a certain kind of authority through this.

A resulting concern from this is the possible privatisation of heritage. Should not digitised cultural heritage be part of the public domain (Frederiksson, 2015, pp. 157, 165), especially in a case where its genuine material counterpart is incapacitated? While a developer can claim to have just reproduced the monument artistically, what if a game contains a scientific copy of material heritage? Which status would this digital monument hold? Is it legitimate for a company to market its game with a monument which is laboriously preserved by underfunded cultural institutions? While it can be said that Ubisoft took its role with responsibility, the future may hold a more exploitative approach towards heritage. It should be stated that concerns of the games industry involving itself in heritage practice are almost identical to those towards the tourism industry (Colomer, 2019). Nonetheless, the commercialisation of heritage is to a certain extent required in order to finance its continued existence. Yet, trying to keep the synergy between heritage practice and industrial commercialisation balanced and healthy means we must be able to realise and address any negative implications of this process.

A final concern worth mentioning is that the video game industry is struggling itself with preservation. Nowadays, video games are mostly digitally published without having any material retainers such as discs. This makes it easier for studios and publishers to be in control of DRM (Digital Rights Management). When players buy games on platforms such as Steam or the Epic Game Store they purchase the right to own a digital copy of the game on the platform for which they purchased it. However, they are not the legal owners in the sense that they can store, lend and distribute the game, as players used to until the 2010s when digital publishing and licensing started to become common practice. This makes it difficult to archive games from the most recent two decades. With having thousands of games released every year it will become more difficult to store, archive and curate the legacy of video games history itself (Guins, 2014).

### **Digital Gaming for Material Heritage's Sake: A Conclusion**

Throughout the paper, the reader was introduced to the representation of Notre-Dame within Ubisoft's *Assassin's Creed Unity*, which was then compared to the case of *Never Alone*. In their comparison, the implication of digital games as a means for preservation and promotion of heritage was underlined. Further, one was familiarised with the concept of *narrative gardens* and spatial aspects in digital gaming as a way to communicate a past heritage and therefore its cultural legacies. Lastly, one was confronted with the ethical concerns which the involvement of the gaming industry in heritage practice might cause.

It seems that digital games offer an effective way to preserve and promote cultural heritage. Games offer from a technical point of view the right format for heritage to be experienced, namely as "processes that recreate and transmit the knowledge about its reality, including its feelings and experiences" (Muriel & Crawford, 2018, p. 99). The active engagement with heritage on a digital playground offers a profound connection to our cultural legacies, and can make us understand its

importance beyond the screen. It also makes us more curious about such legacies, sending us on a ‘learning journey’, from first encounters in the digital world to Wikipedia pages, documentaries, movies, and books, up to scientific literature (Brittain & Clack, 2007, p. 22)

More time needs to pass to be able to sketch out the historical implications of Ubisoft’s representation of Notre-Dame in heritage practice. Nevertheless, this case, as also with *Never Alone*, may be early examples of a new role the gaming industry will play in the preservation, protection and promotion of heritage. It is hard to say if this development will advance into the further democratisation of heritage or if this may be the beginning of a monopolisation and instrumentalisation of heritage. While the gaming industry’s interest seems to stay hegemonic for the sake of commerce, nationalistic tendencies, especially in Europe, may soon realise the potential of video games for subtle propaganda. Heritage often falls victim to political motives and is used to fortify ideologies. A good example for that is how certain museums in Poland are subjected to political pressure causing unfavourable historical narratives to be removed (Flieger, 2019). Similar actions taken within the development of video games may happen in the future, especially as more governmental funds are being introduced for the development of video games. It is therefore important to realise the responsibility the industry has to stay neutral in this context.

Heritage, whether tangible, intangible or digital, bestows opportunity but also responsibility. It is a chance for us to remember the past and reshape the future, but it is also our responsibility to protect and preserve it. Video games are an ideal medium for this task if developed critically and democratically.

## References

- Aarseth, E., & Günzel, S. (Eds.). (2019). *Ludotopia: Spaces, Places and Territories in Computer Games*. Bielefeld: transcript Verlag.
- Assmann, J. (1992). *Das kulturelle Gedächtnis: Schrift, Erinnerung und politische Identität in frühen Hochkulturen*. München: Verlag C.H. Beck.
- Batchelor, J. (2020, January 13). *Infinity Ward, Bungie and Ubisoft join Australian bushfire relief efforts*. Retrieved February 4, 2020, from Gamesindustry.biz: <https://www.gamesindustry.biz/articles/2020-01-13-infinity-ward-bungie-and-ubisoft-join-australian-bushfire-relief-efforts>
- Beer, J. (2014, October 22). *The (Fun, Violent) History Lesson Inside “Assassin’s Creed Unity”*. Retrieved February 23, 2020, from Fast Company: <https://www.fastcompany.com/3037212/the-fun-violent-history-lesson-inside-assassins-creed-unity>
- Benjamin, W. (1989). *Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit*. Frankfurt am Main: Suhrkamp Verlag.
- CBC. (2019, April 17). *Notre-Dame to be closed as long as 6 years, Paris cathedral's rector says*. Retrieved July 7, 2019, from CBC News: <https://www.cbc.ca/news/world/notre-dame-fire-investigation-1.5101302>

- Chakraborty, A. (2019, April 18). *The billionaires' donations will turn Notre Dame into a monument to hypocrisy*. Retrieved February 4, 2020, from The Guardian:  
<https://www.theguardian.com/commentisfree/2019/apr/18/billionaires-donations-notre-dame-france-inequality>
- Chapman, A. (2016). *Digital Games as History: How Videogames Represent the Past and Offer Access to Historical Practice*. Oxon: Routledge.
- Clack, T., & Brittain, T. (2007). *Archaeology and the Media*. Walnut Creek: Left Coast Press.
- Colomer, L. (2019). Stones, Books and Flags: Born and the Role of Archaeological Heritage Management under the Barcelona Model. *European Journal of Archaeology*, 22(1), 111-130.
- Conway, S., & de Winter, J. (Eds.). (2016). *Video Game Policy*. Oxon: Routledge.
- Cook Inlet Tribal Council. (2017). Storytelling for the Next Generation: How a non-profit in Alaska harnessed the power of video games to share and celebrate cultures. In A. A. Mol, C. E. Ariese-Vandemeulebroucke, K. H. Boom, & A. Politopoulos (Eds.), *The Interactive Past: Archaeology, Heritage & Video Games* (pp. 21-32). Leiden: Sidestone Press.
- Dedmon, T. (2019, September 24). *Ubisoft Creates Virtual Tour of Notre-Dame Cathedral*. Retrieved February 4, 2020, from Comicbook:  
<https://comicbook.com/gaming/2019/09/24/ubisoft-virtual-tour-notre-dame-cathedral/>
- Dubbelman, T. (2019). The Art of Being There: Artistic Practices of Presence in Narrative Media. In *Ludotopia: Spaces, Places and Territories in Computer Games* (pp. 75-102). Bielefeld: transcript Verlag.
- Dyer-Withford, N. & De Peuter, G. (2009). *Games of Empire: Global Capitalism and Video Games*. Minneapolis: University of Minnesota Press.
- Fisher, M. (2020). *Postcapitalist Desire: The Final Lectures*. London: Watkins Media.
- Flieger, E. (2019, September 17). *The populist rewriting of Polish history is a warning to us all*. Retrieved February 24, 2020, from The Guardian:  
<https://www.theguardian.com/commentisfree/2019/sep/17/populist-rewriting-polish-history-museum-poland-gdansk>
- Forbes. (2019, April 17). *Ubisoft Is Giving 'Assassin's Creed: Unity' Away For Free To Honor Notre Dame*. Retrieved July 7, 7, from Forbes:  
<https://www.forbes.com/sites/davidthier/2019/04/17/ubisoft-is-giving-assassins-creed-unity-away-for-free-to-honor-notre-dame/#cee852f2ec27>
- France 24. (2019, June 15). *Small donors are rebuilding Notre-Dame as French billionaires delay*. Retrieved February 4, 2020, from France 24:  
<https://www.france24.com/en/20190615-france-small-donor-rebuilding-notre-dame-cathedral-paris-fire-french-billionaire-charity-us>
- Frederiksson, M. (2015). Pirates, Librarians and Open Source Capitalists: New Alliances in the Copyright Wars . In H. Porsdam (Ed.), *Copyrighting Creativity* (pp. 157-169). Surrey: Ashgate.
- Upper One Games. *Never Alone* [PS4]. E-Line Media, 2014. Played 2019

- GamesCentral. (2019, April 17). *Ubisoft donates €500,000 to Notre Dame restoration – gives away Assassin's Creed Unity for free* Read more: <https://metro.co.uk/2019/04/17/ubisoft-donates-e500000-to-notre-dame-restoration-gives-away-assassins-creed-unity-for-free-9237251/?ito=cbshare> Twitter: <https://twitter.com/MetroUK> | Facebook: <https://www.facebook.com/MetroUK/>. Retrieved February 4, 2020, from Metro: <https://metro.co.uk/2019/04/17/ubisoft-donates-e500000-to-notre-dame-restoration-gives-away-assassins-creed-unity-for-free-9237251/>
- Google Trends. (2020, February 4). *Google Trends: Explore: Assassin's Creed Unit*. Retrieved February 4, 2020, from Google Trends: <https://trends.google.com/trends/explore?date=today%205-y&q=assassins%20creed%20unity>
- Guins, R. (2014). *Game After: A cultural Study of Video Game Afterlife*. Cambridge: MIT Press.
- Hodent, C. (2017). *The Gamer's Brain: How Neuroscience and UX Can Impact Video Game Design*. Boca Raton: CRC Press.
- Holtorf, C. (2017). The Meaning of Time Travel. In B. Petersson, & C. Holtorf (Eds.), *The Archaeology of Time Travel: Experiencing the Past in the 21st Century* (pp. 1-24). Oxford: Archaeopress.
- James, S. (2019, April 20). *Assassin's Creed Unity needed to increase server capacity years after launch following the giveaway*. Retrieved February 4, 2020, from PC Gamer: *Assassin's Creed Unity needed to increase server capacity years after launch following the giveaway*
- Kusek, R., & Purchla, J. (2019). *Heritage and Society* (Vol. 4). Krakow: International Cultural Centre.
- Macias, A. (2020, February 27). *Experts toil in dangerous conditions to restore fire-ravaged Notre Dame Cathedral nearly a year after inferno*. Retrieved February 28, 2020, from CNBC: <https://www.cnn.com/2020/02/27/experts-restoring-notre-dame-cathedral-nearly-a-year-after-inferno.html>
- Macmillan, F. (2015). Arts Festivals as Cultural Heritage in a Copyright Saturated World. In *Copyrighting Creativity: Creative Values, Cultural Heritage Institutions and Systems of Intellectual Property* (pp. 95-112). Surrey: Ashgate.
- Meskill, L. (2018). *A Future in Ruins: UNESCO, World Heritage, and the Dream of Peace*. New York: Oxford University Press.
- Miller, J. (2019, April 20). *Assassin's Creed Unity gets review bombed - positively*. Retrieved February 4, 2020, from Techspot: <https://www.techspot.com/news/79738-assassin-creed-unity-gets-review-bombed-positively.html>
- Millon, H., & Frazer, A. (1965). *Key Monuments of the History of Architecture*. London: Thames and Hudson.
- Muriel, D., & Crawford, G. (2018). *Video Games As Culture: Considering the Role and Importance of Video Games in Contemporary Society*. Oxon: Routledge.

- Polygon. (2021, November 24). Assassin's Creed Unity can't but help rebuild Notre-Dame, and that's OK: Our perception of historical accuracy needs major retooling. Retrieved May 31, 2023, from Polygon: <https://www.polygon.com/features/22790314/assassins-creed-unity-notre-dame-restoration-accuracy>
- Reinhard, A. (2018). *Archaeogaming: An Introduction to Archaeology in and of Video Games*. New York: Berghahn Books.
- Ruffino, P. (2018). *Future Gaming: Creative Interventions in Video Game Culture*. London: Goldsmiths Press.
- Teilhaber, K. (2020). From Background to Protagonist: Spatial Concepts in 'Portal' and 'Echochrome'. In E. Aarseth, & S. Günzel (Eds.), *Ludotopia: Spaces, Places and Territories in Computer Games* (pp. 61-74). Bielefeld: transcript Verlag.
- Ubisoft. (2019, April 17). *Supporting Notre-Dame de Paris*. Retrieved February 4, 2020, from Ubisoft: <https://news.ubisoft.com/en-us/article/2Hh4JLkJ1GJIMEg0lk3Lfy/supporting-notre-dame-de-paris>
- Ubisoft Montreal. *Assassin's Creed: Unity* [PS4]. Ubisoft, 2014. Played 2019
- Vie, S. (2016). Policies, Terms of Service, and Social Networking Games. In S. Conway, & J. de Winter (Eds.), *Video Game Policy: Production, Distribution, and Consumption* (pp. 54-67). Oxon: Routledge.