Game Lost:

An Analysis of Video Game Preservation in the Digital Age

Joshua Rogers

Faculty of Health, Arts and Design, Swinburne University of Technology

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Dr Glenda Ballantyne

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Extensive research has evaluated the premise of video games as artistic and cultural artefacts, such as by Chen (2013) in *Is the Video Game a Cultural Vehicle?*, and by Reinhard (2018) in *Video Games as Archaeological Sites*, who both established that video games share a relationship with other art forms such as *film* (films and television). Given that video games can be seen as cultural objects similar to other art forms such as film, the risks managed by the various *stakeholders* (consumers, institutions and studios) of film, such as loss, must also be evaluated in the context of video games. Moreover, with video games seeing a transformation of ownership, through the temporary licensing of video games to consumers, rather than the traditional sale of products to consumers, it is imperative to consider how different groups will conduct preservation to ensure the conservation of the products of this art form, such that loss of cultural heritage does not occur. This essay will demonstrate that the video game industry is ill-prepared to handle the preservation of its products as cultural artefacts and that it has been consumers (fans and enthusiasts) that have played the most crucial role in the preservation of video game history. Consequently, as video games become digital-only items, a conversation must be had to ensure that these cultural artefacts are effectively preserved, with an analysis of how loss happens—and has happened—concerning video games and historical film, offering a more straightforward pathway for preservation to occur in the digital age. Likewise, by analysing the different perspectives that stakeholders believe in terms of preservation of video games, and examining how they have or have not achieved preservation in the past, an evaluation will determine the roles and responsibilities that each stakeholder has in ensuring that the preservation of video game history is achieved throughout the digital age.

Examining Loss

Loss in Film

Video games, in comparison to films, are a relatively young medium, and there still exists time to learn from the mistakes of film studios' lack of preservation in the medium's infancy, and the current-day attitude to such treatment. Estimating that eighty-five per cent of silent films are lost, the Silent Era Company (Silent Era, n.d.) defines lost film as films and television for which no known copies, or only fragments of, exist. There have been two main reasons for loss: accidental—due to events such as fires or degradation of film's formats (Kinemathek, 2008)—and deliberate—caused by studios' perception that films only retained value for as long as they were commercially viable products (Rosenthal, 2020, p. 12). Indeed, in the latter case, some studios destroyed film rolls to avoid possible piracy (Slide, 2000), while others disposed of old footage due to lack of space (Edmondson & Pike, 1982). Accordingly, by the time people began to take an interest in film as cultural artefacts, studios had already lost much of the work already published. Similarly, due to nitrate film's inflammable properties, various film studios' archives have previously been accidentally destroyed, such as Fox Film's in 1937, with the loss of seventy-five per cent of the company's archive having been irreplaceable (Solomon, 2011). Accidental loss has not spared national film archives either, with examples including a "major fire in 1967 at the National Film Board of Canada" (Slide, 2000, p. 16) and the destruction of "a substantial portion of Mexican film history" (Slide, 2000, p. 15) in 1982. These losses, which studios may have avoided if they had taken preservation more seriously, have resulted in a loss of culture within their respective communities and have limited the availability of retrospective analysis of early film.

Loss in Video Games

Given the similarity between film and video games, the losses seen in film's infancy should illustrate the common risks between the two mediums, and allow for studios to take proactive measures to ensure proper archival of content. However, on the contrary, the industry has not responded to these warnings, with some companies taking advantage of the most significant difference between film and video games; players determine the interval of consumption of video games, whereas film, at least traditionally, is made for theatrical viewings determined by cinemas and broadcasters. While a consumer cannot necessarily lose a film, as they have purchased the experience of watching it, for a video game, they have purchased a physical item for their ownership. In terms of accidental loss of games, the case of one of Japan's largest video game developers losing much of its history following the Great Hanshin Earthquake (Anderson, 2011), is exemplary. Loss by inaction or neglect has been left unchecked within the video game industry, with publisher Square Enix in 2019 admitting that the company was unable to re-release games as, "in some cases, we don't know where the code is any more" (Plunkett, 2019, p. 1). Likewise, Sega's *Panzer Dragoon Saga*, commonly cited as one of the best games of 1998 (Grubb, 2020), has had its source code lost too (Lindbergh, 2018). In fact, for games that are to be re-released or re-made, such as the 2019 re-release of the 1997 PC game *Blade Runner*, it is sometimes necessary for developers to use commercially available copies of games to extract or re-create these worlds (Robertson, 2019) due to losses incurred since original-release. For a consumer, the loss of source does not necessarily directly affect them; for as long as they hold the physical item, they will be able to play it. However, like rolls of film,

physical items degrade over time, and with publishers unable to provide replacements, the inability to play a game will undoubtedly occur.

Stakeholders' Perspective

Consumers and Publishers

Examining different groups' perspectives on preservation and whether it is essential offers a stark contrast, with separate groups prioritising distinct aspects of video game history. For consumers, it is merely the ability to play the games that they hold dear within their collective memories that is most important, with little concern as by whom or to how that may be achieved (Monnens et al., 2009). However, Kraus and Donahue (2012) in an evaluation of the video game industry, offer a glimpse into the quite contrasting views that the video game industry holds, concerning the preservation of studios' products past the first sale. The report found a disinterest in preserving artefacts other than the final source code for games, with the authors noting "disorganised preservation activity" (p. 1) and only nine out of twenty-six respondents claiming to have formal archival processes. Indeed, in an interview, one developer stated that "other than the source code of a game that ships, we don't care" (p. 1). Whereas video game publishers have been reluctant to follow stringent archiving processes, video game platform providers have indicated ongoing procedures. In Anderson (2011), the three major video game platform providers, Sony, Microsoft and Nintendo, all stated that they were committed to ensuring the preservation of their products. Specifically, Microsoft noted its Business Continuity and Disaster Recovery Program plan, which included "transferring old games to new reliable storage systems" (p. 2). At the same time, Sony admitted that several factors complicated the archival

process and varied depending on contracts while noting the challenges of preserving codes that run on potentially unavailable hardware (Anderson, 2011). Perhaps unsurprisingly, all the three companies referred to their respective platforms that allowed for the purchasing and playing of software originally made for outdated consoles. Nevertheless, these same platform providers have regularly engaged in actions that do the opposite, with Nintendo, in 2019, discontinuing one of its services for the playing of older games (Whitwam, 2019) and Sony, in 2020, effectively removing the ability for players to purchase games from systems older than six years (Lacina, 2020). It is clear that for publishers and platform providers, preservation is an issue of potential profit influenced by nostalgia rather than an acknowledgement of video games' place as cultural artefacts. To this group, video games are not cultural phenomena worth preserving like other art forms.

Institutions

Institutions have approached video game history uniquely, with the differences between long-term and short-term preservation, being considered. Contending that long-term preservation of "the original experience" (p. 3) is unfeasible, Swalwell (2013) explains that where others may be interested in merely the game itself, institutions should evaluate everything that encompasses it. From source code to planning documents—like props in a film—preservation should assess everything for cultural significance from day one to release. In *Playing Games With Cultural Heritage: A Comparative Case* (Barwick et al., 2011), the authors explore the current exhibitions and thoughts of the curators of four different museums and observe that "[the current] focus of the museums is how they can best display and explain digital games to the widest potential audience" (p. 23). Consequently, the authors note that there is a lack of consideration for

long-term preservation by some museums, with the inability to play these games on their original

hardware encroaching. Guttenbrunner et al. (2010) have also theorised the issue of long-term

preservation in *Keeping the Game Alive*, where the authors reaffirm that current approaches by

museums are unsustainable in the long-term, and institutions should explore other methods of

preservation such as emulation. Indeed, while 'the original experience' may be a viable option

for institutions to explore video games in their current form, the slow degradation of these

formats will result in the loss of heritage, in the future.

Past Preservation of Video Games

Publishers

Video game publishers have historically neglected preservation, with widespread loss

within the industry, raising the question about what actions publishers have already taken. Their

method of preservation has generally either been the inclusion of backwards compatibility,

re-release, or quite commonly, nothing at all (Millsap, 2020); either for reasons such as

contractual limitations for licensed products, lack of interest, or out of sheer technological

inability (Bachell & Barr, 2014). In the first case, publishers have offered limited backwards

compatibility, dependent only on potential profit. For the reason of 'technological inability', the

1994 arcade-released game *Primal Rage* may be the epitome of this issue, with an anti-piracy

feature meaning that the game would not work on anything other than the original hardware,

which remains unevaded to this day. The game was heavily edited for its 2004 re-release, leaving

much of the game inoperable, due to the developer's inability to remove the anti-piracy feature

('Bobinator', 2014). Clearly, video game companies cannot be trusted to preserve their video games as, beyond profit, they do not seem to care.

Consumers

Unlike fans' perspectives on preservation, which can be summarised in one or two sentences, it is, in fact, this group that has conducted the majority of work concerning the 'preservation picture'. As Stuckey et al. (2015) found, it was fans that took the initiative to preserve video game history, "long before there was any institutional discussion on their cultural value" (p. 2). While it is true that museums were slow to react to the emergence of video games as cultural artefacts (Swalwell, 2009), they must consider various copyright and legal issues associated with both the preservation—and display—of video games and their related content. Notwithstanding individual goals, both institutions and fans share a union in their essential requirement to be able to handle the technological challenges that preservation of slowly dying technologies presents, such as the ability to defeat anti-piracy encryption and transfer content to newer systems. However, these groups are fundamentally different in quality and procedures followed (Niccol, 2017); notably, museums must follow specific guidelines regarding the handling copyrighted and trademarked artefacts with a level of authenticity, while fan preservation is rather haphazard (Newman, 2012). This difference in quality is seen in fan-made archives of video games for systems such as the Apple II, with preservationist 4AM, in a 2017 interview, noting that most publicly accessible games for the system copied online were either "incomplete, edited, or inaccessible" (Retronauts, 2017). Indeed, while it is true that fans are a vital participant in the preservation of video game history, they are unable to provide the quality that other groups could provide.

Institutions

The most challenging technological issue with preserving video games is the encryption used to prevent them from being accessible on hardware other than the original. This issue raises the question of whether preservation, beyond purchasing of original equipment (i.e. emulation), is a form of piracy. As Monnens et al. (2009) discovered, this question, which has cast doubt on the ability for institutions to preserve video games beyond their physical lifespan, raises significant issues concerning consumer rights and ownership. Newman (2012) notes the legal challenges of game preservation further, with the author stating that within both the United States and Europe, institutions that wish to preserve video games digitally would effectively be committing copyright infringement, amounting to "fines of $200-150,000 per game" (p. 59). Moreover, quoting the curator of one museum in Berlin, the unfortunate truth is realised: "we essentially have to stand there watching day after day as our collection, one of the most significant collections [of video game culture] worldwide, demagnetises" (p. 60). Indeed, the legitimacy that institutions hold is coupled by the leash that also holds them back, concerning copyright law and long-term preservation beyond the original experience and physical items.

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Future Preservation of Digital History

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Issues of Digital-Only Video Games

Although different stakeholders are exploring various methods of preservation, the focus remains on moving physical items into the digital role, which does not offer protections for digital-only media. Within the past few years, the game has changed, with a push to digital

distribution of products removing the ability for consumers to hold the products that they purchase in their own hands, and games instead being licensed to consumers temporarily. The technological affordances required to play a video game are no longer merely a system and game but also an internet connection and continued support. Consequently, this means that, once the publisher decides it is no longer profitable for them to support an outdated game (or otherwise), the game will be gone (Statt, 2020). Although preserving ephemeral games may appear to be a challenge that will affect future efforts of preservation, there exists a notable example of such a situation already occurring. In the 1990s, Nintendo developed a subscription-only game broadcasting system, which, instead of using pre-purchased cartridges, provided episodic content broadcast over the Japanese airwaves cycling either daily, weekly, or monthly, similar to television transmissions (Blanchet, 2012). Subsequently, various games released exclusively for the system have since disappeared due to the temporary nature of the broadcasts, with only one of over one hundred games being re-released on a different format, by its publisher. Fans have only been able to achieve preservation by inspecting second-hand systems for remnants of games that, in some cases, are inoperable, without a continuous broadcast; something that is long gone from the public airwaves (Kemps, 2015). Given the rare event of the preservation of a game for the system occurring, and many games still being lost, it is clear that digital-exclusive games open a difficult chapter concerning preservation. Preservationists have noted the parallels between this system and the prospect of digital-only video games before. As Kiddo (2014) notes, similar to Nintendo's system, once Microsoft shuts down its Xbox One's servers, a plethora of games will become inaccessible. Suggesting that Nintendo's system has already set a precedent regarding the preservation of digital-only games, Kiddo warns that proper preservation needs to be addressed sooner rather than later. Unfortunately, with preservation efforts by fans of

current-generation games still focusing on the digitisation and effective 'copying' of game files, it is unknown how long this method of preservation may suffice, with systems becoming more technologically complicated and 'hands-off' for consumers.

Current Practises

The prospect of preservation of digital-only video games has been limited by the video game industry, with publishers only offering their word that they will provide future generations with options to play their games. Without notice as to how they may achieve this, game companies are so far unable to provide proper sought-after preservation. One company, Limited Run Games, has opened their publishing and distribution networks to smaller developers, releasing traditionally digital-only games as physical games, albeit in low numbers (About Limited Run Games, 2020, para. 2). Institutions, too, have begun to tackle the issue of digital-only objects. Researching the loss of smartphone games, academic Caroline Choong notes that some museums have started purchasing smartphones which are modified never to update, to display games in their exhibitions in a 'stable' state (C. Choong, personal communication, 16 September, 2020). However, with many smartphone games relying on online infrastructure, preservation by this technique is limited in scope, with the clock ticking before they, too, fail. Clearly, and unfortunately, the issue of preserving digital-only games remains unanswered.

Analysis

The current divide between fans, publishers and institutions, means that the preservation of digital-only video games is unlikely to aspire in a well formulated and systematic way. It is

clear that as video games enter the digital age, the issue of preservation of both physical and digital-only video games remains unanswered. With digital-only games just beginning to take hold of the market, all stakeholders must consider the products at hand, and how they wish to represent them in the future. Institutions are moving from 'the original experience' approach to preservation and have begun focusing on captured memories of these memories, such as through recordings of players' gaming sessions. The video game industry—which so commonly 'refreshes' material from its past—has shown its limited appreciation for older products, while fans have also failed to respond to the issue of digital-only games, with a focus still on physical items being collected and moved to the digital realm. The problem of copyright laws, best practices, and whose responsibility it is to preserve the content of video games, are all issues that preservation faces. Traditional television, such as digital-only video games, was episodic and effectively only 'owned' by studios for as long as they were profitable. Due to this, several television shows' episodes, perhaps most notably the BBC's Doctor Who, are lost (Bignell, 2005). In response to these losses, the UK government's Independent Broadcasting Authority made preservation a compulsory clause for commercial television broadcasters in 1981 (Deegan & Tanner, 2013). This avenue of preservation—that is, the placing of governmental requirements of preservation on publishers—as Barwick et al. (2011) have discussed, is certainly an avenue should be explored. However, few governments have indicated the desire to act. Likewise, this method of preservation may not necessarily succeed for games that rely on ever-changing custom-built infrastructure, such as subscription-based games.

Conclusion

In conclusion, as video games enter the digital age and products become exclusively digital, where publishers temporarily license products instead of selling them, traditional methods of preservation need to be re-thought. In congruence with historical films and television, the improper preservation of ephemeral video games will mean that the history video games are making today will not be available in the future. With different groups holding different concerns and visions for the preservation of video game history, they also have varied responsibilities in how they respond to the prospect of video games as art. To ensure that the loss of this history does not happen, a collective dialogue between all stakeholders in 'the preservation picture' is necessary.

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