Save Your Game?:

Exploring Video Game Preservation in University Libraries and Archives

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The debate about how video games should be archived has waged for generations – generations of consoles, that is. The global games industry is larger than the movie and music industries combined (Beattie, 2021, para. 3), “reaching a record $191 billion in size [in 2021]” according to CNBC (Brown, 2022, para. 3). And although CNBC predicts a coming downturn in earnings in 2022 due to global financial factors (para. 2), video games still inform and infuse global culture in a massive way. Any type of media with an impact this significant will both respond to and change the way people think, make decisions, and understand the world. And any type of media with that cultural clout should be studied and taken seriously as an area of academic research. However, there are reasons why the initiative to include video games in academic libraries and archives is slow to start, not least of which is the difficulty archivists face when trying to preserve video games and digital media. To understand why it is important to overcome these preservation difficulties, it is important to know how the study of video games can lead to innovative research and to understand how their study fits into the missions of university libraries and archives. Finally, it is helpful to evaluate successful university programs engaged in the use and preservation of video games to see how the two goals work together to fulfill the institution’s aims.

Librarians and archivists may feel intimidated by the unique preservation needs of digital media systems and be wary of including video and computer games in their collections, however, ignoring them stands contrary to the Society of American Archivists’ (SAA) Core Values Statement:

> Archival materials provide digital and physical surrogates for human memory, both individually and collectively**,** and serve as evidence against which individual and social memory can be compared. While the historical record cannot be defined by a single document, collection, or memory, archivists recognize that primary sources allow people to examine past events and gain insight into human experiences. (SAA, 2020, “History and Memory”)

As primary sources, video and computer games are essential to the archival record. They are also at special risk of being lost to the archival record for two main reasons: technological complexity and issues of copyright.

Because video and computer games have been produced over time for a wide array of systems, some of which may be obsolete, they represent a challenge for any archive aiming to support multiple formats in their original state. Additionally, older technologies are susceptible to issues such as demagnetization, data corruption, and bit rot that make their life cycle shorter than other archival objects (Waldron, 2021). Libraries and archives may not be equipped to perform the kind of systems sourcing and repair required to keep physical games playable in a way that benefits research.

Creating digitized files of video games, a common preservation safeguard for archives of other types of media, comes with its own set of challenges. Copyright limitations represent another complicating factor for institutions trying to archive video game software. Specifically, the biggest video game companies have argued that the preservation of games in the digitized forms useful for archives would financially harm the companies, since they may re-release or update games at a later date (Smith, 2022). Game companies try to protect their assets at the expense of scholarship and

the historical record. The frustration this can create for archivists is enough to discourage institutions from wading into preservation work without the legal expertise required to protect and defend themselves.

One institution currently spearheading this digital preservation work is the Internet Archive. Their mission is to digitally archive as many pieces of software as possible, including video games. They recreate a playable version of each game, known as emulation, and make it available to play online to users around the world. This distributes the archived material more widely while protecting the files from damage caused by extensive use. As Ong (2020) reports for PC Gamer magazine, “the Internet Archive houses around 15,000 PC games and more than 6,900 MS-DOS games . . . some even thought lost forever. Many of these games don’t exist anywhere else, and were catalogued and preserved with the help of donors, sponsors, hobbyists, and the IA’s own staff” (para. 3). While archives may struggle to approach the format with their existing preservation and legal strategies, the Internet Archive is racing ahead with digital preservation.

Another institution dedicated to preserving video games is the Video Game History Foundation (VGHF). They take a slightly different approach from that of the Internet Archive. Their co-founders believe that there may not be a need to physically collect most games for preservation, as “video game collecting is a really popular hobby” and there are often many ways to source popular games when needed (PAX Australia, 2020, 7:41). They instead prioritize the game's source code, original documentation, and prototype versions of games. In a statement from the VGHF’s co-founder, “‘I’m worried about that developer who made a game that didn’t come out

that has one copy of the source code left burned on a rotting CD-R in his garage,' Cifaldi said" as quoted by Ong (2020, para. 9). This focus on preserving games that are in danger of being lost aligns with the ethics of other archival institutions, who seek to preserve primary source documents and original works. And although the VGHF makes their records available to researchers, their priority is preservation. This includes digitization for posterity where necessary, but not for distribution.

The specialization of dedicated archives for video game media is necessary, because other institutions have different needs for the use of video game collections that do not always prioritize preservation. As educational institutions expand their support of computer sciences, software development, and game design, the need for video game resources deepens (Panuncial, 2019, p. 43). As Wood and Carter (2018) state, "simultaneously the library circulates and contextualizes video game objects . . . not neutrally providing entry into to [sic] a well formed discipline, but shaping the nature of our understanding of video games" (p. 194). The availability of video games for study produces new and innovative scholarship. By studying a new medium, especially one so established in contemporary culture, scholars may find new lenses, interpretations, and perspectives. In 2018, the video game Dance Dance Revolution was used in a trial to measure reaction time in Parkinson's patients (Pascal, et. al., 2018). Even institutions centered on the liberal arts are finding success with video games as an area of interdisciplinary study. Scholarship in film studies, art history, and media studies increasingly integrate video game study (Wood & Carter, 2018, p. 193), as well as "psychology, speech communications, computer science, information science, literature, and others" (Illinois Library, n.d.).

One example of how video games have been used to further LGBTQ studies is Adrienne Shaw's LGBTQ Video Game Archive. "One of the main goals of the project is to create a historical, conceptual map of what LGBTQ content in games has looked like. The archive shows that there has been queer content in games as long as there have been games" (Ruberg, 2017, p. 166). While not a true Archive, the project instead comprises a database of scholarly source notes on the presence of LGBTQ characters in video games dating back to the 1970s (LGBTQ Video Game Archive, 2020). However, "by collecting citations for and copies of all the evidence of this content, we are also beginning to build an actual Archive of primary and secondary materials that may also be made available to a broader public one day" (Shaw, 2017). Shaw's work is an example of how the study of video games can add to the academic scholarship of history and sociology, while filling in gaps left in the archival record.

However, even once institutions justify the need to include video games in their collections, they may find the necessity of using physical video game media for research may be at odds with the goals of preservation. One SAA Core Belief is that "to . . . support the institutional mission of an archival organization, ethical distribution of available resources should be a part of every strategic conversation throughout the lifecycle of all materials in a repository's holdings" (SAA, 2020, "Responsible Stewardship"). Video games' technological volubility means that circulation can be challenging and expensive while limiting preservation options. However, many institutions discover a balance between the two goals, finding that the inclusion of usable games to their collections has benefits in research, scholarship and experience that can add to the body of knowledge about video game preservation.

As Wood and Carter report, “Mary Laskowski and David Ward identify three main reasons for incorporating video games into academic library collections: to support faculty research, to support classroom instruction, and for the entertainment and curricular needs of students. They call for a collaboration between these areas, suggesting that libraries can become an important nexus for this field of research (2018, p. 187). Carter heads the Computer and Video Game Archive (CVGA) at the University of Michigan, so is invested in building the relationship between video games and academic scholarship. And he is in a unique position to comment on the value of that relationship: U of Michigan’s CVGA is one of the oldest and most extensive video game archives in a university setting, dating back to November 2007 (Carter, 2008). He and the CVGA staff have maintained a blog for the entirety of the CVGA’s existence, creating an archive of information about the process, pitfalls and lessons learned in the course of developing a successful archival resource.

Consulting the CVGA’s original collection plan, their intention was to create a space to house games “with a preference for games which are critically lauded, innovative, or important” and game systems from all available generations (Carter, 2008). This includes TVs and computers of the era, set up to replicate the original technological conditions under which games would have been played. The collection maintains a lab-style setting, so items can only be studied from the CVGA space and do not circulate. In an interview with American Libraries magazine, CVGA employees compare the dual missions of preservation and utilization, explaining, “‘there’s an inherent tension. Usage is the enemy of preservation . . .Academic usage trumps preservation. We don’t want to have something just to have it and not let people use it.’”

(Panuncial, 2019, p. 43). This aligns with the CVGA's original goal, stated in their 2008 Collection Plan: " to collect materials relating to games for the purpose of academic inquiry, including but not limited to: programming and technology; artistic and literary expression; social and cultural impact; instruction and education" (Carter, 2008). For the uses of this institution, hands-on research was determined to be the most valuable service.

Although CVGA's primary purpose is maintaining a collection for research and academic exploration, they are an example of the ways collecting naturally supports preservation efforts. As Wood and Carter (2018) report, "inevitably [the use of the collection] has led to some drawbacks, as games that are played are games that suffer from wear. . . . Strategies for mitigating wear and loss have included storing optical materials in archival sleeves, learning basic repair techniques, and keeping a cache of replacement systems and controllers (p. 191)". This extends to system repairs, including a 3D printed custom part to repair a Atari 7800 (Panuncial, 2019, p. 44). As institutions engage in the process of video game study and preservation, the body of knowledge related to the field deepens for everyone.

In addition to preserving game systems, the CVGA is making strides to digitally archive game data that is at risk of loss or obsolescence. Working with the University of Michigan's Library Digital Preservation Lab, they are digitizing their collection to create digital archival files, each containing metadata about the game, digital game files, and any supplemental material such as gameplay guides or reference materials (Waldron, 2020, para. 3). These files are not accessible to the public, but serve as internal backups in case the original files are lost or corrupted. This preservation supports the

CVGA's mission to provide games for research while also supporting the greater archival mission of preserving games from permanent loss.

The University of Illinois Urbana-Champaign took a different approach, adding a circulating video game collection to their undergraduate library while developing a gaming archive of vintage games that is available only to faculty, or by approved request. However, a third priority is to support and archive faculty-created games and research, as stated by their collection goals: "creating and designing an infrastructure to capture and provide access to the output of campus gaming initiatives, such as games created by UIUC faculty and corresponding research" (Illinois Library, n.d.). Their Collection Development Policy goes into further detail, elaborating that acceptable submissions for archival inclusion are games or portions of games, such as art, music, or source code, that are created by faculty, students and alumni in the course of class instruction or research. They detail that "digital copies of these games will be preserved in a digital archives. These copies will be made for use on game system emulators, and include related metadata following the national standards for digital archives," which will be "collected, preserved, and administered by the University Archives" (Vintage Gaming Collection Policy, n.d., p. 2). By making the UIUC gaming collection the joint responsibility of the undergraduate library and the University Archives, the dual missions – preservation and utilization – are entrusted to their respective specialists. And by archiving the University's original work, they ensure that archival records are preserved and not lost.

These universities show the value in video game collections – their use generates creative and cutting-edge scholarship while positioning university libraries

and archives as technological leaders. Simultaneously, even as the circulating games and systems may experience wear, the knowledge and experience generated by the process of preserving video games leads to a richer knowledge base with which to archive video games both digitally and physically. Leaders in the field like the University of Michigan and the University of Illinois Urbana-Champaign show how a balance between the need for utilization and the need for preservation can be struck to prioritize the institution's needs. And innovations by these institutions lead to archival preservation of games that might otherwise be lost, benefiting us all. While challenges of video game preservation can require specialist knowledge, funding, and legal support, university libraries and archives should know the benefits of creating video game collections for research and should work together to develop a collection plan that meets their institution's goals.

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