

# The International Journal of Digital Curation

Issue 2, Volume 6 | 2011

## (Not) Playing Games: Player-Produced Walkthroughs as Archival Documents of Digital Gameplay

James Newman,  
Bath Spa University

### Abstract

The subject of digital game preservation is one that has moved up the research agenda in recent years with a number of international projects, such as *KEEP* and *Preserving Virtual Worlds*, highlighting and seeking to address the impact of media decay, hardware and software obsolescence through different strategies including code emulation, for instance. Similarly, and reflecting a popular interest in the histories of digital games, exhibitions such as *Game On* (Barbican, UK) and *GameCity* (Nottingham, UK) experiment with ways of presenting games to a general audience. This article focuses on the UK's National Videogame Archive (NVA) which, since its foundation in 2008, has developed approaches that both dovetail with and critique existing strategies to game preservation, exhibition and display.

The article begins by noting the NVA's interest in preserving not only the code or text of the game, but also the experience of using it – that is, the preservation of *gameplay* as well as games. This approach is born of a conceptualisation of digital games as what Moulthrop (2004) has called “configurative performances” that are made through the interaction of code, systems, rules and, essentially, the actions of players at play. The analysis develops by problematising technical solutions to game preservation by exploring the way seemingly minute differences in code execution greatly impact on this user experience.

Given these issues, the article demonstrates how the NVA returns to first principles and questions the taken-for-granted assumption that the playable game is the most effective tool for interpretation. It also encourages a consideration of the uses of non-interactive audiovisual and (para)textual materials in game preservation activity. In particular, the focus falls upon player-produced walkthrough texts, which are presented as archetypical archival documents of gameplay. The article concludes by provocatively positing that these non-playable, non-interactive texts might be more useful to future game scholars than the playable game itself.



## Introduction

Over the past few years, the subject of digital game preservation has moved up the research agenda with the ‘Preserving Virtual Worlds’ project (see McDonough et al., [2010](#)), the Independent Game Developers Association Game Preservation Special Interest Group’s white paper (Lowood, [2009](#)), and the European KEEP<sup>1</sup> project (see Pinchbeck et al., [2009](#)) among a growing number of projects turning their attentions to matters of capturing the complexities of gaming environments, arresting media decay and “bit rot,” and emulating obsolete gaming platforms. The UK’s National Videogame Archive (NVA) is one such project and its work is the focus of much of this article.

The reason for centering on the NVA is that while it faces many of the same challenges as other game preservation projects (see Guttenbrunner et al., [2010](#); Newman, [2009a](#)), its approach is markedly different in some key areas. Certainly, the scope of the NVA is broader than many other game preservation projects. Even a cursory glance at the mission statement (see below) reveals an interest in the cultures and practices of both production and play, in addition to a concern for the games themselves whether treated materially or virtually in terms of cartridges, discs, or emulatable bits and bytes. But there is more than this. The point is not simply that the NVA is interested in contextualising games by exploring their development and subsequent uses in the hands of players, thereby foregrounding the experientiality of gaming and the way in which games are made real through the actions and performances of their players. Rather, the NVA proceeds from a provocative position that the ‘game’ is not necessarily the central unit of currency for a digital gaming curation or preservation project. As such, records of play, production and performance – whether these take the form of specially created audiovisual documentaries of development histories (such as the NVA’s “Directors’ Commentaries” series), videos of players’ gameplay performances (“superplay” videos), or collections of texts produced by videogame fans that archive and explore the experiential potentialities of specific titles (e.g. walkthroughs) – are treated not merely as ephemera or interpretative tools with which to make better sense of or to contextualise the game but are considered to be valuable materials in their own right.

To be clear, despite the focus of this article, the NVA is not opposed to the preservation of digital games as both material and virtual objects, or to emulation as a means of making games playable for future generations. As we shall see, it is a core aim of the NVA project to protect and celebrate games and gaming culture in the broadest sense using any means appropriate. Consequently, the NVA’s position is one that seeks the most comprehensive solution that incorporates strategies such as migration and emulation alongside the collection of other non-playable materials. What perhaps makes the position of the NVA interesting is its assertion that some of these materials that we might ordinarily think of as being part of the contextualising ephemera that situate the original game, may be potentially capable of telling the story better than the game itself.

---

<sup>1</sup> Keeping Emulation Environments Portable (KEEP): <http://www.keep-project.eu/ezpub2/index.php>.

In this article, we focus on player-produced walkthroughs. These are some of the most comprehensive investigations of digital gameplay that presently exist; certainly more thorough, investigative and inventive than any professional or academic literature. Yet within much extant games preservation activity and even in the broader discipline of game studies, their very existence is often barely recognised. The deliberately provocative argument presented here is that, for future scholars and students of digital games, walkthrough texts might be better able to capture and communicate the important qualities of games, as defined and understood by their players, than the playable games themselves. Perhaps counter-intuitively, we might then argue that these apparently static texts documents are among the most effective resources currently at our disposal with which to appreciate the complexity and nuance of digital games *at play*.

Following some contextualising comments on the growth of digital gaming culture and business, this article engages in a discussion of some of the complexities of digital games as objects/systems. In pointing to the malleability of digital games and their capacity to be endlessly remade through the configurative act of (sometimes self-consciously resistant) play, this discussion develops the work of Guttenbrunner et al. (2010) and Swalwell (2007, 2009) among others and draws on the scholarship of academic game studies. In particular, attention is focused on the ways in which games are differently played as these practices problematise the singular notion and location of 'the game'. The article then moves to an exploration of the NVA's particular and distinctive stance, scope and approach to dealing with digital gaming culture. Here, we briefly outline the NVA's collecting policy, illustrate the diversity of materials in its purview and, ultimately, evaluate its strategy for digital game preservation that is not based around code or even games per se, but around gameplay as popular cultural practice. In particular, the focus of this final section falls upon the use and value of player-produced 'walkthroughs' as part of a digital game preservation strategy.

## Who Cares About Digital Games?

There can be little doubt that digital games are an important component of the popular culture of the past 40 years (see Monnens, 2009a). Indeed, as Guttenbrunner et al. (2010) note, they are "part of our cultural heritage." Since the first blips of light flickered into life on the screen of the PDP-1 computer at MIT and *Spacewar!* was born, digital gaming has become a global concern with worldwide sales growing exponentially and continuing to soar to this day. While space does not permit a comprehensive history of the games marketplace (see DeMaria and Wilson, 2003; Kent, 2001; Sheff, 1993; Spufford, 2003; Takahashi, 2002 and 2006 for accounts), some sense of the current situation is instructive. Satoru Iwata, President of Nintendo, recently announced that over 50 million Wii and 100 million DS consoles had been sold worldwide (Iwata, 2009) while according to US trade body the ESA<sup>2</sup> (2009), "On average, nine games were sold every second of every day of 2007." In the UK, government spokespersons proudly proclaim this as "one of our most important creative industries" (Woodward, 2006). Countless specialist publications exist online and offline (e.g. Future Publishing's *Edge* magazine and the myriad 'official' and 'independent' periodicals dedicated to single and multiple platforms; *Eurogamer*<sup>3</sup>,

<sup>2</sup> The Entertainment Software Association (ESA): <http://www.theesa.com/>.

<sup>3</sup> Eurogamer: <http://www.eurogamer.net>.

←—————→

*Computer and Videogames*<sup>4</sup> and *IGN*<sup>5</sup>) while games reviews have permeated the media and technology sections of newspapers such as *the Guardian* and *the Times*, for instance (see also *The Guardian Games Blog*<sup>6</sup>).

The rise in the economic and cultural significance of games has not passed academics by, and after a somewhat faltering start, the discipline of game studies has emerged in the last 10-15 years to become key to digital media studies. Combining elements of film, literary and media, computing and technology studies, as well as play and simulation theory, game studies has its own corpus of literature (e.g. Wolf and Perron, [2003](#); Newman, [2004](#); Dovey and Kennedy, [2006](#); Kerr, [2006](#), and even a second wave of audience and platform studies according to Arceneaux, [2010](#)) as well as dedicated journals such as *Game Studies*<sup>7</sup>, *Games and Culture*<sup>8</sup> and *Eludamos*<sup>9</sup>.

In the face of this apparently irrepressibly buoyant marketplace, in which retailers' shelves groan under the weight of ever more titles and into which new platforms such as Apple's iOS devices and ways of digitally distributing software such as Valve's Steam and the iTunes Store continue to emerge, it might seem odd to proclaim that games are disappearing. And yet, as the various contributors to the IGDA's Game Preservation Special Interest Group note in their white paper (Lowood, [2009](#)), old games hardware and software are under significant threat.

“Every year, thousands of games move one step closer to oblivion as a result of the same threats to longevity that affect all digital media: bit rot and obsolescence. Digital media have a shockingly short life span due to the natural decay of the original materials and the rapid obsolescence of older media forms, as well as the failure and obsolescence of the hardware necessary to run them. Many digital games that are only a few decades old are already at risk and require immediate preservation attention.”  
(Monnens, [2009b](#))

Among game studies scholars, the idea that digital games are vulnerable and impermanent is one that has only comparatively recently begun to gain ground. Indeed, 2009's Digital Games Research Association annual conference was the first to include a panel of papers dedicated to matters of game preservation, (see Barwick et al., [2009](#); Lowood et al., [2009](#); Pinchbeck et al., [2009](#); Newman & Woolley, [2009](#)).

As Monnens notes, there are at least two allied issues here: bit rot and technological obsolescence. While all storage media are susceptible to some extent, many early games from the 1980s, especially those created for popular home computers such as the Commodore 64 and ZX Spectrum, were distributed on volatile magnetic media such as compact cassette and floppy disk.

<sup>4</sup> Computer and Videogames: <http://www.computerandvideogames.com/>.

<sup>5</sup> IGN: <http://uk.ign.com>.

<sup>6</sup> The Guardian Games Blog: <http://www.guardian.co.uk/technology/gamesblog>.

<sup>7</sup> Game Studies: the international journal of computer game research: <http://www.gamestudies.org>.

<sup>8</sup> Games and Culture: <http://gac.sagepub.com>.

<sup>9</sup> Eludamos: <http://www.eludamos.org>.

“The magnetic properties of a disk “fade” over time, the signals become weaker and reading them becomes more difficult. As time goes on, reading becomes hit-and-miss, much later than that and the data cannot be recovered (and likely only partially) without extremely expensive hardware and significant analysis. Eventually the data is completely lost.”  
(Software Preservation Society, [2009](#))

If we factor in the sheer variety of formats used to distribute digital games that range from masked ROMs or EPROMs used in 1990s-era home console cartridges through to battery-backed security systems used in some Coin-Operated arcade machines, the complexity of the technical situation is soon revealed. While bit rot and technological obsolescence are clearly important considerations, their effect is not unique to the gaming world. However, there is considerably more complexity to digital games and in the next section we move to considering some of the ways they are made and remade through the configurative act of performance and play, and the problem this poses the preservation practitioner.

## **The Complexity of Digital Games**

### **Part One: Emulation and Frame Reading**

The rapid pace of technological change makes emulation an attractive option in terms of archiving digital games. However, it is not without issue. The proprietary nature of much of digital gaming hardware coupled with the need for specific interfaces such as dance mats, video cameras, and other custom devices, problematises strategies such as emulation and migration. While projects such as KEEP and community-driven endeavours such as MAME<sup>10</sup> are extraordinary and important technical achievements, there are considerable legal issues associated with obtaining and running system Boot ROMs as well as copying and migrating the game code itself (see Conley et al., [2004](#)). Moreover, even the most seemingly minor variations in the operation, look and feel of digital games have considerable impacts on the experience of play. In relation to Nintendo’s own emulation of the Game & Watch title *Donkey Kong*, released as part of the *Game & Watch Gallery* series for the GameBoy handheld console, Newman ([2009b](#)) notes:

“Seasoned players of *Donkey Kong* will know the distinctive, Steve Reich-like phasing polyrhythm of the barrels and Mario blipping their collision-course paths across the screen. Indeed, true connoisseurs of the game will soon learn to judge their jumps according to the audio cues of this minimalist composition more than they will rely on reading the visual, especially once the pace picks up. In the GameBoy version, the rhythmic beating of Mario against the barrels is not offset in the same way as the original. The result is not only a qualitatively and aesthetically different one, but one that robs the player of part of the fundamental tools of interaction and feedback. The result is a different game. Minutely different. Utterly different.”

---

<sup>10</sup> Multi Arcade Machine Emulator (MAME): <http://mamedev.org/>.



The precision of technical performance is absolutely crucial to players of (certain types of) games. One-on-one combat games (or “beat-em-ups”) such as Capcom’s *Street Fighter* are meticulously scrutinised by their players and every conceivable attack and defensive manoeuvre assessed in relation to the number of frames of animation it takes to start up, complete and recover from (see EventHubs.com’s (2010) ‘How to Read Frame Data: Super Street Fighter IV’ for example). It is important to note that these analyses of frame data are not idle or inconsequential investigations but rather the resultant data contributes to a significant knowledge base for players. Selecting an effective combination of moves for each of the available combatants is facilitated, while truly expert players can read the moves of their attacker from the onscreen appearance of their start up animations and take evasive action accordingly. These start up animation routines may last only a fraction of a second (just a few frames of animation running at a 60Hz refresh rate) and the fact that they might be used in this way should give us some idea of how deleterious common emulation performance hacks, such as frame-skipping, might be on the integrity of the digital gamer’s experience.

Where questions of custom interface technologies are somewhat self-evident (where games depend upon Wii Remotes, Eye Toy video cameras, or Kinect motion sensors, for instance), game studies researchers Nick Montfort and Ian Bogost further complicate the notion of digital games emulation by noting the link between digital gaming hardware and output devices such as video displays. In *Racing the Beam*, Montfort and Bogost (2009) stress the strong affinity between the Atari VCS (Video Computer System) and the CRT (Cathode Ray Tube) television. Elaborating the point, Bogost notes that:

“In today’s world of huge, sharp LCD monitors, it’s hard to remember what a videogame image looked like on an ordinary television of the late 1970s. Emulators like Stella make it possible to play Atari games on modern computers, serving the function of archival tool, development platform, and player for these original games. But unfortunately, they also give an inaccurate impression of what Atari games looked like on a television.”  
(Bogost, [n.d.](#))

As Bogost observes, an essential part of the quality of the Atari VCS gaming experience is actually a consequence of technological imperfection. Afterimages, RF noise, colour bleeding, visible scanlines and the blurring and smearing that are inherent in CRT displays, all combine to become crucial to the creation of the aesthetic of VCS digital play. Nintendo’s auteur designer Shigeru Miyamoto notes a similar concern in revisiting his *Super Mario Bros.* title on the occasion of its 25th anniversary re-release. Miyamoto was discussing the 25th anniversary of Mario with Earthbound creator, Shigesato Itoi when he said:

“When I see this [Super Mario Bros.] so clearly, it’s a little embarrassing. Back then, with tube televisions, it was a little blurrier and the images weren’t quite so sharp. The places where we tried to fudge it a bit really stand out!”  
(Miyamoto, [2010](#))





inconsistencies in the operation of the game's code. For these reasons, it is useful to consider gameplay as an act of exploration in which the player uncovers and reveals ways of playing. Sometimes these players work alone and sometimes within the context of a community of offline and online players sharing their own experiences and the results of their investigative playings. As such, gameplay is best understood as situated practice that very often takes place within the context of, and is shaped and regulated by, a community of players. Most critically, the resultant gameplay is often unpredictable, emergent, and frequently travels in directions unintended and unanticipated even by the designers and developers of the gaming environments within which it is enacted.

In Sue Morris' (2003) terms, digital game play is "co-creative" but we should be clear to appreciate fully the extent of the collaborations. Not only do players operate on the system, rules and code to bring the game to life (play as "configurative" in Moulthrop's (2004) terms) but also players create their strategies and tactics for play with reference to the advice, guidance and norms of the communities of practice within which they operate. Sensitivity to the ways games are actually used and what, as a result, are deemed to be the important qualities and characteristics of that game to its players who have learned to use it in specific ways and for specific purposes, must then be a key aspect of any preservation activity.

It will be clear that digital game play need only be obliquely concerned with the ostensible aim of the game as documented in instructional manuals and frequently superimposes additional rulesets that are designed and regulated (see Ashton and Newman, 2010) by communities of players. These might be comparatively trivial (driving the wrong way around a racing track attempting to avoid oncoming traffic for as long as possible) or significant (sidestepping large tracts of the game to access advanced weaponry before the logic of the narrative/structure ordinarily allows, a subversive practice known as "sequence breaking"). Importantly, as we can see, these additional rules and new ways of playing are concocted by players and frequently shared and discussed in online forums. Of particular interest to the project of game preservation, these analyses of gameplay potential and practice do not simply disappear into the virtual ether of the discussion board, and the tactics and strategies for play are formalised and codified in player-produced 'walkthrough texts'.

Although this two-part discussion of configurative performance is necessarily brief (see Consalvo, 2007 for a fuller investigation of cheating, for instance), it reveals some additional layers of complexity in relation to digital gameplay and highlights the permeability of the game's rulesets and the willingness of players to deliberately play against the grain to maximise their performative reward. Considering the digital game as more than 'the game' is a key tenet of the NVA's approach and this recognition of the performative and transformative nature of play gives rise to a strategy that dethrones the code (or even the physical game object) as the unit of currency in favour of an attempt to archive the processes and practices of play. The following section of this article explores the genesis of the NVA project and details the way in which these questions of gameplay as lived experience inform an approach that is as much concerned with capturing and codifying the uses of games as preserving the media or bitstreams themselves.







```

+---+
|E|F|
+++---+++
+++   +++
+-----+ +---+
|B|C|D| |I|J|
+++---+---+---+---+
+++   |G|H|   +++
+-----+ +---+ +---+
|A|                                     |K|
+---+                                     +-+

```

The Blocks are arranged as per the diagram on the left with coloured blocks being the four chests and enclosed blocks with letters inside being the blocks. What you have to do is push block B down, then block F down, then block E left, then block D down, then block C left then block J down and then block I left. This should set it up so you can now open every single chest to acquire 20 RUPEES, 20 RUPEES, 20 RUPEES and of course 20 RUPEES. Leave this house and make your way down to the middle area where you will find a man sitting on the ground beside some pots, he'll offer to sell you an MAGIC BOTTLE for the...

It is worth noting that the game under scrutiny here is a rich, audiovisual spectacle that makes use of 2D and 3D visualisation onscreen as well as an orchestrated soundtrack that musically references other titles in the series. However, all of this is stripped away as the game is reduced to its barest constituents. Studying this ACSII map and the accompanying text, we might easily misread the intention of the walkthrough. For Consalvo:

“Walkthroughs are detailed guides to how a player should play a game sequentially to find all of the hidden bonuses and surprises, how to avoid certain death, and how to advance past difficult puzzles or trouble spots to best play and win the game.”  
(Consalvo, [2003](#))

Certainly, there is some truth in this assertion and walkthroughs are very often turned to by players in moments of desperation in order to solve particular problems that bar further progress (see Newman and Simons, [2004](#)). However, there is more to the player-produced walkthrough text than electronic cheat sheet. In some regards, we might agree with Carr, Campbell and Ellwood ([2006](#)) who have noted that there is a cautionary tone present in most walkthrough writing that guards against oncoming surprises, or with Burn ([2006](#)) who talks about a “regulatory mode” of address that constrains players. There does initially appear to be an imperative mood at work in the walkthrough that unforgivingly demands that the player obey the instruction in the text. As Ashton and Newman ([2010](#)) have noted, there is without doubt a sense in which the walkthrough is a mechanism for the regulation of playing styles as well as a space in which identities and performances of expert gamer status are played out. If this were all they were, walkthroughs would surely present curators and scholars of digital games a rich resource. To capture the lived experience of actually playing these games and to have documented every twist and turn necessary to defeat and vanquish every foe in the game is no small feat.

Of course, there is significantly more to the walkthrough text than the charting of the path to completion. The documentation of the route to completion is typically only a part of these player-produced guides which are far more ambitious in their scope. Walkthroughs are extensive records of the gameworld. As such, what we find in online repositories such as *GameFAQs*<sup>14</sup> are legions of players meticulously documenting their gameplay and exploring every last branch in the narrative trees, exploring each and every space in the gameworld, transcribing every line of dialogue from every character no matter how apparently incidental.

<sup>14</sup> GameFAQs: [www.gamefaqs.com](http://www.gamefaqs.com).

However, on closer inspection, many walkthroughs reveal themselves as being even richer, more multifaceted documents and, most importantly, must be seen as the products of self-consciously deliberative and investigative play that pushes, and occasionally breaks, the boundaries of the game system. Where most walkthroughs seek to investigate and interrogate game texts – exploring their every narrative turn and spatial aspects in minute detail – many also frequently present explanation and guidance on techniques that take advantage of weaknesses and flaws in the ruleset or code of the game in order to offer new gameplay options. In this respect, walkthroughs must be understood as the products of an approach to play that is akin to reverse-engineering. Built upon a foundation of deliberately investigative, resistant and deviant strategies of gameplay, walkthroughs initiate a process that renegotiates the player-designer relationship. These modes of engagement frequently involve playing beyond performative norms and technical limits by exploiting bugs and glitches that might, for instance, break the usual narrative sequence of the game making levels or weaponry available sooner than intended. Walkthroughs, then, are both celebrations of the ludic potential of the digital game, but are also records of its inconsistencies and weaknesses and, most significantly, the ways these can be harnessed for further gameplay opportunity. The walkthrough, then, is both a document of the game as designed and a record of investigations into the vagaries and imperfections of its implementation and how these may be enacted and exploited.

Ultimately, the exploitation of gameplay opportunities and the configurative nature of play and performance is nowhere more clearly demonstrated than in the practices of glitch and bug hunting as codified in player-produced walkthroughs. Newman (2008) states:

“Players explore and probe the boundaries of what the game will do to destruction, exposing and exploiting the glitches that slip through the quality control systems and that, *in extremis*, may crash the game outright. More interestingly, many of these glitches or limitations in the simulation, allow access to new, perhaps unpredictable, techniques and capabilities or to unravel the sequence of the game-making levels or abilities available out of order.”

Glitch-hunters embark on a deliberate and rigorous journey with the goal to uncover and master not only what the game appears to offer in terms of gameplay and available selections, but also those potentialities that even the code’s creators and developers were unaware of. Examples of exploitable glitches abound and examples exist for unlocking specific types of Pokémon (some of which are clearly the products of corrupted game code, see Bulbapedia’s Glitch section<sup>15</sup>, for instance). However, the most famous of videogame glitches is Super Mario Bros’ “Minus World”.

“OK, for those of you who aren’t familiar with the “Minus World”, here is how you reach World 36: In World 1-2, get to the end of the level and find the pipe that takes you to the exit. Mario must be big for this to work. Instead of exiting through the pipe, jump on top of it and stand on the leftmost portion of the pipe. Break some of the bricks above, but DO NOT break the

<sup>15</sup> The Bulbapedia definition of “glitch”: <http://bulbapedia.bulbagarden.net/wiki/Glitch>.

rightmost brick. Now here's the tricky part. You will need to jump up and lean your jump to the right, so that Mario's head goes through the rightmost brick. This may take several attempts before you get it right. If everything goes well, Mario will then go through the rest of the bricks! Now you will appear where the three warp pipes are that ordinarily take you to Worlds 2, 3, and 4. As long as you don't scroll the screen too far, this trick will work. Go down the 1st (or 3rd) pipe and you're off to the "Minus World"! It's really World 36-1, but the programmers didn't make enough room for more than one digit in the level, which shows up as a space. The level is virtually identical to World 2-2 with one critical difference: THERE IS NO WAY OUT! The trick isn't very useful unless you plan on brushing up on your swimming skills :)" (Wonn, [n.d](#))

Unlike many glitches, the Minus World is intriguing as it has no obvious, intrinsic gameplay merit. It is a cul-de-sac, an endlessly scrolling level that offers little or no variety for the gamer and certainly nothing novel, as it is made up of elements present in other sequences. What the Minus World, and indeed the act of glitch hunting more broadly, ably demonstrates is the configurative nature of play and the open, mutable nature of certain digital games that allow players to redefine, remake or even reduce them to a set of resources for playing with.

For our purposes here, it is this reduction of the digital game to a suite of resources that are endlessly remade through configurative performances, the exploitation of glitches, the recording of superplay, and the operation of newly imposed rulesets, that is of concern. It is these features of digital games and the deliberately investigative, exploratory acts of gameplay enacted by players that make them both fascinating and complex objects and, most importantly, moves us to consider them as lived experiences rather than structures or technologies.

## Conclusions

As documents of these deliberative, investigative practices of play; as records of the ludic potential of the game system pushed to and beyond its limits; as a mechanism for sharing, exploring, regulating and legitimising gameplay; walkthroughs are among the most extensive and thorough pieces of critical game analysis presently available. That they are overlooked in academic game studies and do not find themselves at the heart of attempts to curate, preserve and archive the cultures, technologies and modalities of digital gaming is curious given their quality, prevalence and their widespread use among players. For the National Videogame Archive, they represent a valuable source of first hand material that map the territories of games and record the ways in which they are actually brought to life and played with by their players. The updating of walkthrough texts months, years, even decades, after the release of the titles to which they refer also speaks to the longevity of digital games in the hearts of players and a desire among certain of them to pause and linger on these titles even in the face of an apparently ever-developing marketplace where technological obsolescence and perpetual innovation are watchwords (see Kline et al., [2003](#)).



It might be difficult to make the case for an archive or museum exhibition of videogames that included no (playable) games, though we might consider whether this difficulty is reflective of extant expectations and taken-for-granted assumptions about the ways in which games reveal themselves, as much as it is grounded in an evaluation of the efficacy of (potentially decontextualised) playing as a means of analysis or access. However, we can state with some certainty that it is inconceivable that any game preservation activity should proceed without consideration of the importance of what we might call “paratextual” materials with which to make sense of the playable game and perhaps even to elucidate it in ways that anything but deep, immersive and sustained play simply cannot. Importantly, those projects that have drawn attention to the importance of such materials have focused largely on developer documentation in an apparent attempt to unpack the creative and productive processes that gave rise to the game (as in Vowell, 2009). This material is undoubtedly important, but it tells only part of the story and there is a wealth of other rich, analytical, interpretative texts available. The player-produced walkthrough is chief among these and gives rise to some of the most insightful game analysis and investigative discourse presently available. The comparative invisibility of these critical texts within academic game studies and game preservation activity overlooks an important resource and, significantly, effectively writes out a valuable constituency from the project of documenting games and gameplay. It is the assertion of the NVA that it is players that know best the contours, boundaries and, ultimately, the specific properties of the games they play and it is essential that ways are found to incorporate the breadth and depth of their knowledge and critical response.

In short, the project of game preservation is more than a technical challenge. Games are, surely, rules and systems, but they are rules and systems *in* and *at* play. As such, digital games are perhaps better conceived of as performances rather than code – the performance of play is inseparable from the rules and system of the game. Digital game play, then, is the product of a human-computer interaction that sometimes takes quite unexpected turns, that may be emergent, and that is very often contingent on minute and precise details of the game’s operation and the interactions of inputs and outputs. This might sound like a clear case for ensuring that playable games are the cornerstone of any game preservation, archiving, or museum exhibition strategy. However, it is this need for precision and accuracy in the execution that we see in examples such as *Street Fighter* frame reading or the uses of rhythm and syncopation for timing onscreen movements that causes problems. In the absence of a perfect reproduction of hardware and software with which to play, we might perhaps argue that the documentary evidence of contemporary players of those original systems holds more value in interpretative and archival terms than the presentation of an approximation with which subsequent players might attempt to engage so as to fathom the complexities of its operation. If the game has to be played to be understood, we should ensure that we are actually playing the game and not a version of it. If this is not possible in the future, perhaps we should invest effort into capturing the performances and perspectives of those players that did – or can still – play it.

Alternatively, we might argue that the inherent approximations and technical workarounds that remain the necessary and understandable trappings of current emulation tools like MAME, make an appreciation of the qualitative nature of gaming’s specific properties nothing less than essential. The study of walkthroughs and the collation of player knowledge might significantly aid the implementation and

use of emulation strategies for preservation, as decisions may be made as to which aspects of the game can and cannot be compromised without injuring the experience of its playing.

Regardless of whether they are deployed to support or critique strategies based around the playable game, it is certain that game scholars of the future will be well served by archives of discursive, investigative player-produced walkthrough documents with which to make sense of the lived experience of digital game play.

## References

- Ashton, D. & Newman, J. (2010). Relations of control: Walkthroughs and the structuring of player agency. *Fibreculture 16*. Retrieved August 4, 2011, from <http://sixteen.fibreculturejournal.org/relations-of-control-walkthroughs-and-the-structuring-of-player-agency/>.
- Aarseth, E. (1997). *Cybertext: Perspectives on ergodic literature*. Baltimore, MD: Johns Hopkins University Press.
- Alex (2007). The Legend of Zelda: Four swords, a link to the past. Retrieved August 4, 2011, from [http://db.gamefaqs.com/portable/gbadvance/file/zelda\\_four\\_swords\\_g.txt](http://db.gamefaqs.com/portable/gbadvance/file/zelda_four_swords_g.txt).
- Arceneaux, N. (2010). Review article: Game theories, technologies and techniques of play. *New Media Society 12*, 35-54. [doi:10.1177/1461444809355110](https://doi.org/10.1177/1461444809355110)
- Barwick, J., Muir, A. & Dearnley, J. (2009). Where have all the games gone? Explorations on the cultural significance of digital games and preservation. In *Breaking new ground: Innovation in games, play, practice and theory: Proceedings of DiGRA 2009, Brunel University, London*. Retrieved August 4, 2011, from [http://wiki.igda.org/images/e/e7/State\\_of\\_Play\\_Where\\_have\\_all\\_the\\_games\\_gone.pdf](http://wiki.igda.org/images/e/e7/State_of_Play_Where_have_all_the_games_gone.pdf).
- Bogost, I. (n.d.). A television simulator: CRT emulation for the Atari VCS. Retrieved August 4, 2011, from [http://www.bogost.com/games/a\\_television\\_simulator.shtml](http://www.bogost.com/games/a_television_simulator.shtml).
- Burn, A. (2006) Playing roles. In D. Carr, D. Buckingham, A. Burn & G. Schott (eds) *Computer games: Text, narrative and play*. Cambridge: Polity Press.
- Carr, D., Campbell, D. & Ellwood, K. (2006). Film, adaptation and computer games. In D. Carr, D. Buckingham, A. Burn & G. Schott (eds) *Computer games: Text, narrative and play*. Cambridge: Polity Press.



- Conley, J., Andros, E., Chinai, P., Lipkowitz, E. & Perez, D. (2004). Use of a game over: Emulation and the video game industry: A white paper. *Northwestern Journal of Technology and Intellectual Property* 2(2). Retrieved 4 August 2011, from <http://www.law.northwestern.edu/journals/njtip/v2/n2/3/Conley.pdf>.
- Consalvo, M. (2003). Zelda 64 and video game fans: A walkthrough of games, intertextuality, and narrative. *Television and New Media*, 4, 321-334. [doi:10.1177/1527476403253993](https://doi.org/10.1177/1527476403253993)
- Consalvo, M. (2007). *Cheating: Gaining advantage in videogames*. Cambridge, MA: MIT Press.
- Crawford, C. (1984). The art of computer game design. Retrieved August 4, 2011, from <http://directory.vancouver.wsu.edu/people/sue-peabody/art-computer-game-design>.
- DeMaria, R. & Wilson, J. (2003). *High score: The illustrated history of electronic games*. Berkeley, CA: McGraw Hill/Osborne.
- Dovey, J. & Kennedy, H.W. (2006). *Game cultures: Computer games as new media*. Maidenhead: Open University Press.
- Entertainment Software Association (2009). Sales & genre data. Retrieved August 4, 2011, from the ESA official Web site: <http://www.theesa.com/facts/salesandgenre.asp>.
- Eskelinen, M. (2001). The gaming situation. *Game Studies*, 1(1). Retrieved August 4, 2011, from <http://www.gamestudies.org/0101/eskelinen/>.
- Eventhubs (2010). How to read frame data: Super Street Fighter. Retrieved August 4, 2011, from Eventhubs.com: <http://www.eventhubs.com/guides/2009/feb/17/how-read-frame-data-street-fighter-4/>.
- Guttenbrunner, M., Becker, C. & Rauber, A. (2010). Keeping the game alive: Evaluating strategies for the preservation of console video games. *International Journal of Digital Curation*, 5(1), 64-90. Retrieved August 4, 2011, from <http://www.ijdc.net/index.php/ijdc/article/view/147>.
- Iwata, S. (2009). Discovering new development opportunities. In *Proceedings of the Game Developer's Conference, San Francisco, USA*.
- Kent, S. (2001). *The ultimate history of video games*. Roseville, CA: Prima.

- Kerr, A. (2006). *The business and culture of digital games*. London: Sage.
- Kline, S., Dyer-Witheford, N. & De Peuter, G. (2003). *Digital play*. London: McGill-Queen's University Press.
- Lowood, H. (2005). Real-time performance: Machinima and game studies. *iDMA Journal*, 2(1), 10-17.
- Lowood, H. (2007). High-performance play: The making of machinima. In A. Clarke and G. Mitchell (Eds.) *Videogames and Art*. Bristol: Intellect Books.
- Lowood, H. (Ed.) (2009). *Before it's too late: A digital game preservation white paper*. Retrieved August 4, 2011, from [http://www.igda.org/wiki/images/8/83/IGDA\\_Game\\_Preservation\\_SIG\\_-\\_Before\\_It%27s\\_Too\\_Late\\_-\\_A\\_Digital\\_Game\\_Preservation\\_White\\_Paper.pdf](http://www.igda.org/wiki/images/8/83/IGDA_Game_Preservation_SIG_-_Before_It%27s_Too_Late_-_A_Digital_Game_Preservation_White_Paper.pdf).
- Lowood, H., Armstrong, A., Monnens, D., Vowell, Z., Ruggill, J., McAllister, K., Donahue, R. & Pinchbeck, D. (2009). Before it's too late: Preserving games across the industry/academia divide. In *Proceedings of DiGRA 2009, Brunel University, London*. Retrieved August 4, 2011, from [http://wiki.igda.org/images/4/43/State\\_of\\_Play\\_Before\\_Its\\_Too\\_Late.pdf](http://wiki.igda.org/images/4/43/State_of_Play_Before_Its_Too_Late.pdf).
- McDonough, J., Olendorf, R., Kirschenbaum, M., Kraus, K., Reside, D., Donahue, R., Phelps, A., Egert, C., Lowood, H., & Rojo, S. (2010). *Preserving virtual worlds final report*. University of Illinois. Retrieved August 4, 2011, from <http://hdl.handle.net/2142/17097>.
- Miyamoto, S. (2010). Super Mario Bros. 25th anniversary interview with Shigesato Itoi. Retrieved August 4, 2011, from [http://www.nintendo.co.uk/NOE/en\\_GB/news/iwata/super\\_mario\\_bros\\_25th\\_anniversary\\_19226\\_19227.html#top](http://www.nintendo.co.uk/NOE/en_GB/news/iwata/super_mario_bros_25th_anniversary_19226_19227.html#top).
- Monnens, D. (2009a). Why are games worth preserving? In H. Lowood (Ed.) *Before it's too late: A digital game preservation white paper*. Retrieved August 4, 2011, from [http://www.igda.org/wiki/images/8/83/IGDA\\_Game\\_Preservation\\_SIG\\_-\\_Before\\_It%27s\\_Too\\_Late\\_-\\_A\\_Digital\\_Game\\_Preservation\\_White\\_Paper.pdf](http://www.igda.org/wiki/images/8/83/IGDA_Game_Preservation_SIG_-_Before_It%27s_Too_Late_-_A_Digital_Game_Preservation_White_Paper.pdf).
- Monnens, D. (2009b). Losing digital game history: Bit by bit. In H. Lowood (Ed.) *Before it's too late: A digital game preservation white paper*. Retrieved August 4, 2011, from [http://www.igda.org/wiki/images/8/83/IGDA\\_Game\\_Preservation\\_SIG\\_-\\_Before\\_It%27s\\_Too\\_Late\\_-\\_A\\_Digital\\_Game\\_Preservation\\_White\\_Paper.pdf](http://www.igda.org/wiki/images/8/83/IGDA_Game_Preservation_SIG_-_Before_It%27s_Too_Late_-_A_Digital_Game_Preservation_White_Paper.pdf).



- Montfort, N. & Bogost, I. (2009). *Racing the beam: The Atari video computer system*. Cambridge, MA: MIT Press.
- Morris, S. (2003). WADs, bots and mods: Multiplayer FPS games as co-creative media. In M. Copier & J. Raessens (Eds.) *Level Up: Digital Games Research Conference Proceedings*. University of Utrecht.
- Moulthrop, S. (2004). From work to play: Molecular culture in the time of deadly games. In N. Wardrip-Fruin & N. Harrigan (Eds.) *First Person: New Media as Story Performance, and Game*. Cambridge, MA: The MIT Press.
- Newman, J. (2004). *Videogames*. London: Routledge.
- Newman, J. (2005). Playing (with) videogames. *Convergence: The International Journal of Research into New Media Technologies*, 11(1), 48-67.  
[doi:10.1177/135485650501100105](https://doi.org/10.1177/135485650501100105)
- Newman, J. (2008). *Playing with videogames*. London and New York: Routledge.
- Newman, J. (2009a). Save the videogame! The National Videogame Archive: preservation, supersession and obsolescence. *M/C Journal* 12(3). Retrieved August 9, 2011, from  
<http://journal.mediaculture.org.au/index.php/mcjournal/article/viewArticle/167>.
- Newman, J. (2009b). Emulation: More than just the games... Retrieved August 9, 2011 from the National Videogame Archive Web site:  
<http://www.nationalvideogamearchive.org/index.php/2009/05/emulation-more-than-just-the-games>.
- Newman, J. & Simons, I. (2004). *Difficult questions about videogames*. Nottingham: Suppose Publishers.
- Newman, J. & Woolley, T. (2009). Make videogames history: Game preservation and The National Videogame Archive. In *Proceedings of DiGRA 2009, Brunel University, London*. Retrieved August 9, 2011, from  
[http://wiki.igda.org/images/d/d5/State\\_of\\_Play\\_National\\_Videogame\\_Archive.pdf](http://wiki.igda.org/images/d/d5/State_of_Play_National_Videogame_Archive.pdf).
- Pinchbeck, D., Anderson, D. Delve, J. Otemu, G., Ciuffreda, A. & Lange, A. (2009). Emulation as a strategy for the preservation of games: the KEEP project. In *Proceedings of DiGRA 2009, Brunel University, London*. Retrieved August 4, 2011, from  
[http://wiki.igda.org/images/d/d7/State\\_of\\_Play\\_The\\_KEEP\\_project.pdf](http://wiki.igda.org/images/d/d7/State_of_Play_The_KEEP_project.pdf).

- Software Preservation Society (2009). Bit rot. SPS. Retrieved August 4, 2011, from [http://www.softpres.org/glossary/bit\\_rot](http://www.softpres.org/glossary/bit_rot).
- Spufford, F. (2003). *The backroom boys: The secret return of the British boffin*. London: Faber and Faber.
- Sheff, D. (1993). *Game over: Nintendo's battle to dominate an industry*. London: Hodder and Stoughton.
- Swalwell, M. (2007). The remembering and the forgetting of early digital games: From novelty to detritus and back again. *Journal of Visual Culture*, 6, 255-273. [doi:10.1177/1470412907078568](https://doi.org/10.1177/1470412907078568)
- Swalwell, M. (2009). Towards the preservation of local computer game software: Challenges, strategies, reflections. *Convergence: The International Journal of Research into New Media Technologies*, 15, 263-279. [doi:10.1177/1354856509105107](https://doi.org/10.1177/1354856509105107)
- Takahashi, D. (2002). *Opening the Xbox: Inside Microsoft's plan to unleash an entertainment revolution*. Roseville, CA: Prima.
- Takahashi, D. (2006). *The Xbox 360 uncloaked: The real story behind Microsoft's next-generation video game console*. SpiderWorks/Lulu.com.
- Vowell, Z. (2009). What constitutes history? In H. Lowood (Ed.) *Before it's too late: A digital game preservation white paper*. Retrieved August 4, 2011, from [http://www.igda.org/wiki/images/8/83/IGDA\\_Game\\_Preservation\\_SIG\\_-\\_Before\\_It%27s\\_Too\\_Late\\_-\\_A\\_Digital\\_Game\\_Preservation\\_White\\_Paper.pdf](http://www.igda.org/wiki/images/8/83/IGDA_Game_Preservation_SIG_-_Before_It%27s_Too_Late_-_A_Digital_Game_Preservation_White_Paper.pdf).
- Wolf, M.J.P. & Perron, B. (Eds.) (2003). *The video game theory reader*. London: Routledge.
- Wonn, D. (n.d). Minus world: Nintendo 8-bit glitches. Retrieved August 4, 2011, from the David Wonn's Unique Video Game Glitches! Web site: <http://davidwonn.kontek.net/nes.html#S>.
- Woodward, S. (2006). Keynote presentation. In *Proceedings of the BAFTA Video Games Awards, London, UK*.