

BROWSING HISTORY: ARCHIVING VIDEO GAME CONTEXT

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ABSTRACT

This research paper is about the collection of contextual materials for video games at The Netherlands Institute for Sound and Vision. The focus is on the context of reception that can be found online, such as webreviews, Let's Plays and other web videos. Games and their interactive and processual nature make them difficult to archive and present as cultural objects. Collecting context can help with both preserving and presenting. It can be collected for the documentation as a (secondary) preservation method. Context is also necessary to describe the game as they cannot be played by the user groups of Sound and Vision yet. There is no detailed workflow or guideline on how to contextualize games and archive the contextual materials in relation to the games. Therefore, a new workflow is proposed to archive the context of reception next to the games.

ACKNOWLEDGEMENTS

Jesse de Vos Anne Bras Ruurd Blom Martijn van der Vliet Jasper Snoeren Darren Carter (University of Amsterdam) The Netherlands Institute for Sound and Vision. University of Amsterdam

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1. INTRODUCTION

1.1. OVERVIEW

This research paper is about the collection of contextual materials for video games at The Netherlands Institute for Sound and Vision. It is the result of a four-month internship with the goal to develop approaches to collect the context of reception for games. This context consists of the contextual materials that can be found online and therefore this research paper will also focus on webarchiving.

Both web- and game-archiving are relatively new fields for Sound and Vision. The largest part of their digital collection consists of digital-born and digitized radio and television programs and more recently, selections of web videos, websites, and games (de Jong Digital Preservation Sound and Vision 13). Sound and Vision's role as a broadcasting archive has resulted in models and workflows on how to archive these materials. For games and websites there are no models or workflows with the same level of detail yet and few guidelines on context. There are many theories and different ways on how cultural institutions could contextualize games. Two different models were found that summarize what context could be collected. Elson's model was about the experience of play. The experience consists of narrative, game mechanics and context (Elson et al. 535). According to Elson, each needs to be contextualized to understand the player's experience. Nylund's model was about the game as a cultural object. To present the game as such, context as described by Nylund's model needs to be present (Nylund 8). His model also consists of the player's experience, with objects and cultural context added. These models will be discussed in greater detail later and compared to practice. New workflows will be created that combine web- and game-archiving in order to collect the context of reception as suggested by these theoretical models.

The first chapter of this report establishes the background of the project, with regards to games in cultural institutions and within Sound and Vision, followed by webarchiving. The second chapter will discuss context in depth. It will compare the current theories on game context to what is possible in practice and how the collection of context falls within the strategic goals and activities of Sound and Vision. The third chapter will discuss the current workflows in Sound and Vision. First exploring the standard workflows, followed by the new workflows for game- and webarchiving that are currently already implemented. Finally, a strategy will be formed in this chapter that combines both the game- and webarchiving workflows in a new workflow that includes the collection of context. This strategy will be applied to two case studies in the fourth chapter that will be discussed in the final chapter.

1.2. RESEARCH QUESTIONS

The primary question behind this research paper is: How can the challenges of the collection of video games' context of reception be defined and what possible strategies can be developed to overcome them?

These are the secondary questions explored in this report:

- What materials can properly represent the context of the games' reception?
- What does the international nature of game culture mean for the collection of contextual materials for a national institution?
- How can the collection of the games' context be integrated with the existing workflows and systems in Sound and Vision?
- What adjustments need to be made in the workflows and systems of Sound and Vision

if integration is currently not possible?

- Which selection criteria can be used as a point of reference for the selection of the games' context?
- What are the legal issues concerning the collection of the context of reception?
- What are the possibilities of presenting or accessing the context of reception?

1.3. METHODS

To answer the primary question a mixture of methods was chosen. This mixture consists of various internal interviews, literature reviews, collection and analysis of contextual materials and two case studies with applied examples.

1.4. SCOPE AND LIMITATIONS

The Dutch gamescanon currently guides the acquisition process (de Vos, De Nederlandse Gamescanon). Therefore, this report limits itself to games from the gamescanon. To narrow it down further, the focus will be on games from the gamescanon after 2000, for various reasons. First, Sound and Vision has had an exhibition on Dutch games from the 80s and 90s called *Game On!* (Glas et al. 137). So far, the majority of work done in Sound and Vision surrounding games has been on games from these decades. Sound and Vision has also been experimenting with different kinds of context, such as the Let's Play videos that will be discussed later. No context of reception from the time of the games' release has been collected yet. Most of these contextual materials are found online, which is more likely after 2000. Lastly this report is a result of a four-month internship at the end of 2020 during the COVID-19 pandemic. Sound and Vision has been in lockdown for most of this time and therefore the internship and research were conducted from home, which limits the collection of contextual materials, but also highlights the importance of online access of the materials and its context.

2. BACKGROUND

2.1. GAMES IN CULTURAL INSTITUTIONS

Game archiving is not only a new field for Sound and Vision, but a relatively new field in archiving as a whole. Initially games were not recognized as cultural heritage worth preserving, but this has changed in recent years. It started with gaming enthusiasts. "The first group of individuals to recognize a new subject area consists usually of participants followed closely by students of the field and finally, if belatedly, by librarians and archivists" (Barwick et al. 6). The gaming enthusiasts have been one of the first groups to identify the significance of games. They formed online preservation groups, motivated by nostalgia and an awareness of what had been lost, due to the initial lack of interest by cultural institutions. The significance of games was picked up by academics and in the last couple of years, by cultural institutions. Institutions most likely to preserve games are already adapted to taking care of born-digital objects. The term born-digital refers to materials that originate in digital form. Digital files require hardware and software in order to be stored, retrieved and rendered, which brings risks such as obsolescence and corruption (van Malssen, 72). Institutions have deployed strategies to deal with these problems, some of which have worked well so far. However, games are very complex objects with many unique problems that are new to institutions, even if they are used to taking care of digital objects, which has led to many different ideas on how to preserve games.

2.2. THE NETHERLANDS INSTITUTE FOR SOUND AND VISION

The Netherlands Institute for Sound and Vision is a leading cultural institute in the preservation, management, exhibition and promotion of Dutch audiovisual heritage (de Boer, 2). Its core collection consists of audiovisual productions such as film, television, radio, and music, as well as objects that provide a broad historical and cultural context to the audiovisual collection. In 2016 Sound and Vision started to take up games as part of its collection. Sound and Vision preserves games through emulation and migration. An emulator is a piece of software that allows one platform, like a PC, to replicate operation of a different hardware and software environment (Newman 48). An emulator can 'pretend' to be an old Nintendo console and allow the user to play the games that would otherwise not run on a PC. Most archives do at least some hardware preservation, but Sound and Vision has decided against this method (de Vos, The Game-shaped Archive). The main argument for this decision was that other organizations in the Netherlands are better suited for the preservation of hardware. However, the institute is well aware that emulation is more expensive and is still often not an option yet (Glas et al. 139). Therefore, documentation is another important preservation strategy previously employed by Sound and Vision. The context Sound and Vision has currently collected are gameplay videos, Let's Plays and screenshots, all produced by the institution itself. They have not yet collected websites, or web videos to add to their collection as contextual materials to the games.

2.3. GAME-ARCHIVING IN SOUND AND VISION

The game domain of Sound and Vision currently consists of the games themselves and game videos (de Boer 75). The games are described as born-digital, interactive audiovisual materials with a dominant play element that is consumed on any kind of computer. The game videos are made by Sound and Vision themselves to visualize the games that are not playable in the systems of Sound and Vision. The Let's Play videos fall within this category as well, although they differ from the game videos. The game videos simply show the game, whereas in a Let's Play video people comment on the game while playing them. The videos are a result of a project during the Game On! exhibition where visitors of the museum were invited to play and react to games on a Commodore 64 while being filmed (Glas et al. 142). The original acquisition strategy was to collect all Dutch games; however, it was decided that there are too many games releasing to continue doing this. In 2018 the Dutch gamescanon was launched with input from experts (de Vos, De Nederlandse Gamescanon). The gamescanon is used to help in the acquisition of games and bring Dutch game history to a larger audience. Sound and Vision acquisition strategy does not limit itself to just the games. Materials surrounding awards, famous Dutch game Youtubers or Twitchers, the game developers, VR and E-sports will also be acquired in the future. When it comes to preservation, Sound and Vision has selected a limited number of formats for long-term preservation. For these formats Sound and Vision can guarantee sustainability, however, games, websites and web videos fall outside of this category. Therefore, formats of this type are qualified for the time being as tentative preservable formats with the aim to keep these permanently playable and usable (de Jong Digital Preservation Sound and Vision 25). For authenticity this means games, websites and web videos have their own approach, the 'justin-time' approach. The object is initially stored 'as is' with playability checked in advance. In a fixed monitoring cycle, the objects will be checked to make sure they are still playable within the current playing environments. If not, there will be research to see if another environment offers an alternative or another preservation method, such as migration, reinterpretation or documentation (de Vos, The Game-shaped Archive 5). Because of the games reliance on emulation software and many different formats documentation is an important additional preservation method.

2.4. WEBARCHIVING IN SOUND AND VISION

In the collection policy and the preservation plan, a clear distinction is made between web video and websites. In this report webarchiving will refer to both and distinguish when necessary. Websites and web videos do not have their own domain in Sound and Vision. The web video collection currently consists of over 8.400 videos selected from 2006 onwards. These are web videos on rising YouTube stars, trends, parodies, political campaigns, branded content and social criticism (de Jong Digital Preservation Sound and Vision 20). These videos are archived by Sound and Vision themselves. The website collection was originally seen as only providing context to the materials already acquired by Sound and Vision. Recently it has developed into a collection of its own. However, the aim is still: "To establish a webarchive that contains a representative selection from each of the collection domains defined by Sound and Vision, insofar as these domains have an online presence on broadcasters' websites, fan pages, forums and blogs and in interactive online documentaries." (de Jong Digital Preservation Sound and Vision 20). This is because there are others such as the National Library of the Netherlands that have already collected many of the most important Dutch websites. The websites are crawled and preserved externally by commercial company Archiefweb. They use crawling software to save the websites as a WARC file. Dynamic content such as videos seen on the websites are not preserved by this process. Web videos and websites are also tentative preservable formats, which means that what applied to games applies here as well. They are archived 'as is' and will be checked every so often to make sure they are still usable.

3. CONTEXT

3.1. WHAT IS CONTEXT?

Context can be understood as the situation within which something exists or happens, and that can help explain it. Context used for understanding the situation of games in an institution, could be, for example, information on the games' development process, player experience and historical significance. Sound and Vision's collection is divided into different pillars. The games domain falls within the pillar of culture and entertainment. In the collection policy every domain within this pillar is described in detail (de Boer 66). Most domains also describe the contextual materials that are collected. For example, the animation domain contains objects that tell a story about the production of the animation. A recurring theme within the domains is that the context should tell a story about the original object. However, when it comes to games, it may be useful to also collect context that just displays the game, as it is not possible to access the playable games (yet). As mentioned before, the context that is researched in the report is that of the games' reception after 2000. This contextual information describes how the games were received, what impact it had on the people that play games and its significance to Dutch game history. These materials could be webreviews, videoreviews on Youtube or Twitch or even Let's Play Videos. The contextual materials for games could be collected and archived in different ways. How much should be collected can be judged on a case by case basis for the games in the Dutch gamescanon. It can depend on the story there is to tell or even the availability of the playable games.

3.2. CONTEXT AND GAMES

In this paragraph I will briefly describe the ongoing debate of what games are in museums and how they should be presented according to different researchers. Games are difficult to



describe, because games can mean anything from the source code, retail boxes, circuit boards, game design, intellectual properties, collector items, and playable games. Several institutions emphasize a different aspect of games with playability usually at its core. To present games in a playable state is complicated. Being able to present a game depends on its exhibitable performances (Nylund 3). Online games that are dependent on servers run by others are nearly impossible to display. Some games are too long to be properly experienced within the timeframe of an exhibition visit, or are processual in nature. Others are difficult to experience on your own or without any prior knowledge of the game and its genre. Other problems are those resulting from the games' ontology (Nylund 3). What should be displayed in game exhibitions and how they should be understood in a museum context is unclear. "If games are on display in an exhibition, the playing of games itself does not equal understanding them and the cultural, historical and social dimensions." (Nylund 5). Therefore, Nylund proposed a comprehensive model and vocabulary for understanding the presentation of games. Based on a number of case studies, he concludes that games on display are constructed of three different aspects: objects, experience and context. The following model is a theoretical proposal to inform the exhibition of games.



Figure 1 "Games as objects, experiences and context." (Nylund 8).

Nylund describes this model as follows: "Games in exhibitions are made up of objects (i.e., retail boxes, storage media, consoles), experiences (i.e., playing games with original hardware or in emulated form), and context (i.e., how games have been made, played, and received)" (Nylund 8).

Another model was made by Elson et al. that focuses more on the gameplay experience itself. According to them games have unique aspects that set them aside from non-interactive media. In the research of Elson et al., they suggest the following model to capture all aspects of the game experience.



Figure 2 "Dimensions of digital games and sample corresponding variables that can facilitate or inhibit meaningful player experiences." (Elson et al. 530).

The role of the narrative in this model on game experience, can be traced back to noninteractive media. Even though narrative does not necessarily have to be present in every video game, if it does, it can present itself in many different ways. Such as through the way it looks, plays or in case of multiplayer games, the story the players create with each other through interaction. Another important aspect to game experience is mechanics. "Mechanics comprise all game "rules" and define the options for interaction in and with a game." (Elson et al. 526). The last part of player experience is context, in this model it refers to situational context (Elson et al. 535). Gaming experiences can be shared with each other. For some games the ability to play together and create your own experiences as a group is its main appeal. Time and place are also important. If siblings would play a game together that they used to play as children, it would provide a different gaming experience, compared to other games at other times with other people.

Nylund explains how every institution emphasizes one of the aspects of the model in their exhibitions. For example, one institution may focus on the physical object of the game whereas another may focus on how the games were made. Elson et al. describe how every game can be experienced differently and may have one aspect of the model be more present in the game than another. Therefore, it is important to look at the games and what context to collect on a case-by-case basis. Especially on the selection of games of the Dutch gamescanon that have been selected to represent Dutch game history as a whole. Sound and Vision emphasizes the importance of context telling a story about the original object. I

argue that in order to tell a comprehensive story about a game, there should be research on what aspects of both the models are most important to the stories surrounding the game. Then context should be collected that encompasses all the remaining aspects in order to tell the most complete version of the games' story.

3.3. THE CONTEXT OF GAMES' RECEPTION

Reception means the reaction of critics or players to the game. Online game reception is often presented through webreviews, video reviews, forums and Let's Plays. The original goal for this research was to collect this context in order to have an understanding of what is available. However, the video game database website MobyGames has already collected webreviews of almost every game in the gamescanon (Video Games Database. Credits, Trivia, Reviews, Box Covers, Screenshots). Videos are mostly found on websites such as Youtube and Twitch by simply entering the game's name. Gameforums usually exist surrounding larger international games, which is why few games in the gamescanon had their own fan-made fora. Sound and Vision generally collects only Dutch materials. However, because of the international nature of video games. I suggest making an exception for its context. Take for example, the Dutch game Toki Tori, on MobyGames (Toki Tori (2008) MobyRank). Out of almost 40 reviews, only seven are in Dutch, with four from the same website. As for webreviews or Let's Plays, I was not able to find a single Dutch one and Toki Tori is one of the more internationally acclaimed games on the gamescanon list. The context of reception to be collected is likely not Dutch, however there are other standards that could be applied to the contextual materials to be collected. First there is Sound and Visions selection criteria of context having to tell a significant story about the main object. For game context I think another selection criteria should be that the contextual materials represent at least one of the aspects in either of the models above. The goal of collecting the context should be to provide a more complete representation of the game in a museum setting. How this could be done shall be demonstrated in the case studies.

4. WORKFLOWS

4.1. THE STANDARD WORKFLOW IN SOUND AND VISION

Sound and Vision has developed an information model that acts as a reference for the generic preservation workflow (de Jong, *Informatiemodel*). The model records all the actions or events that can take place in relation to an object and also all the changes the object goes through across all these processes. The generic workflow will be briefly described to address how the game- and webarchiving workflow deviate from it. The first stage consists of the negotiation phase with the depositor of the materials (de Jong, *Digital Preservation Sound and Vision* 37). Contractual documents will be drawn up in which agreements are laid on formats, preservation scenario, rights, quality controls, metadata and reports. The following stage is the ingestion phase. If a checksum was provided by the depositor, a fixity check is carried out to check whether the file was correctly received. Technical metadata is extracted and if agreed upon with the depositor, an automated Quality Assurance process will check the quality of the master files. All the ingested packages, with content and metadata, are then assigned an identifier, a unique label that forms a permanent reference to the object stored in the digital archive. This is the end of the ingestion phase,

and the packages, referred to as 'SIPs' (Submission Information Packages), are ready for final storage. This SIP combined with additional files such as subtitles and context information on the production is converted into an AIP (Archival Information Package). This

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package is then stored in the digital archive. The last part of the workflow relates to the DIP (Dissemination Information Package). This workflow normally starts when a user requests for a certain type of material with a certain type of use. If the system approves the DIP will be delivered. As opposed to game- and webarchiving, most of this workflow is automatically generated and logged. In the following paragraphs I will give a similar description of the game- and webarchiving workflow, based on personal correspondence with game and webarchivists and internally shared documents.

4.2. THE WORKFLOW OF GAME-ARCHIVING

After the selection process, as described in the first chapter, the preservation workflow of games starts with an agreement with the owner of the game. After the donation agreement is signed, the ingestion phase starts. What and how the object will eventually be archived depends on what is available and in what form. The preservation of games in Sound and Vision focuses on preserving the disc images, which is produced by making a 'sector-bysector' copy of a storage medium. "The main preservation method is emulation, since this allows games to be preserved in their playable form and is both platform-independent and fit for scalable and - potentially - online access. This means that, apart from describing the digital files themselves, the software environments on which they depend in order for them to be recreated are extensively documented (de Jong, Digital Preservation Sound and Vision 34)". Sometimes the owners of the game have such a disk image available, which is considered good enough to store in the archive as is. If the makers do not have a digital copy of the game, the physical carrier will be digitized into a preservable format. The original physical carriers are stored as objects for exhibition purposes. If the owners of the game do not have a copy, Sound and Vision has to find one. If nothing can be found there is the option to find a pirated digital copy online with permission of the games' owners.

Currently workflows are being written to digitize every kind of physical copy. Thus far, the acquired physical carriers (tape, floppy or CD-ROM) are converted into digital disk images: ISO 9660, TAP (file format of a rough tape copy) and FLP (floppy) files. The goal is to have workflows for the digitization written for each kind of carrier. There are currently three variants to these workflows.

- A detailed step-by-step description on how to digitize the game
- A global description on how to digitize the game, for example on what programs to use, but not on how to use them.
- A flowchart of all types of files and what and what not can be kept.

To give an example I will make use of the workflow for digitizing Commodore 64 tapes to TAP files. This workflow is a step-by-step detailed description on how to digitize the game. First the tape is tested on an actual Commodore 64. The following step is to record the tape using a cassette tape recorder connected to a computer. The file is saved as a WAV file and in the next step converted to a TAP file. Then the TAP file is cleaned using specific software and finally the TAP is tested on a Commodore 64 emulator. Every step is described in detail, from how to run a game on an actual Commodore 64 to how to make it work on an emulator. Again, the goal is to make such a detailed guide for more carriers. After the games are digitized they can be ingested into the archive. For now, most of the metadata has to be made by hand afterwards. As of the moment of writing, the metadata for a few games are ingested into DAAN, Sound and Vision's Media Asset Management (MAM) system, for the first time. The games are not playable in DAAN, therefore as an optional last step, gameplay videos and screenshots of the games will be made that can be displayed into DAAN. Ideally,

in the future the goal is to be able to download the playable games through DAAN, with or without an emulator.

4.3. THE WORKFLOW OF WEBARCHIVING

The workflow for web videos and websites is very different, as web videos are archived by Sound and Vision themselves and the websites are archived by an external supplier. The preservation workflow starts with the agreements. For web videos formal agreements with professional producers have been set up to legally acquire the videos and make them accessible on site (de Jong, Digital Preservation Sound and Vision 20). For non-professional content an opt-out letter is sent to the maker of the video. This letter does not have to be signed by the maker, but if the maker does not want their videos to be archived they can optout. Afterwards the videos are downloaded from the web or in some cases the depository submits the file. Older videos were stored in a variety of file types, but new videos are converted, if necessary, and stored as a H.264 file in a MP4 container. If the conversion is reversible, it may be decided not to keep the source format. Then the tooling that was used for the conversion and the technical properties of the files for both the source and converted format are recorded in the metadata. The metadata is extracted during the ingestion process and created automatically. Every five years the files will be checked and these recordings function as input to the software profile for quality control. For presenting the videos DAAN creates its own proxy upon the file entering the archive, in an MP4 / AVC format. DAAN often can't play these files as it is not the standard MXF format, therefore it often happens that only the metadata is visible in DAAN. not the videos themselves.

For websites, either opt-outs will be sent to the website's owner, or the websites will be part of an existing agreement (de Jong, Digital Preservation Sound and Vision 20). For example, Sound and Vision is tasked to act as an archive for the Netherlands Public Broadcasting Organization, which can include their websites. After the websites have been selected and an agreement is made, a list of the selected websites is sent to Archiefweb, the external supplier. The selected websites are crawled and saved as a WARC file. After a website is crawled it is checked by Sound and Vision. Through an online portal they can approve the crawl or add comments for the supplier if something is wrong and needs to be improved. This check is done by hand, which is possible because of the relatively small number of websites currently selected. Crawling errors occur mainly due to the use of JavaScript, Flash and videos embedded on web pages (Baltussen et al. 73). Therefore, this dynamic content is not preserved by Archiefweb's crawler. If a website with dynamic content is of high value, Sound and Vision will use the Web Recorder software in which a website can be traversed manually. The results of this crawl are also saved as a WARC file (de Jong, Digital Preservation Sound and Vision 34). After the crawl has been approved it will receive a new date for the next crawl. Every site is crawled either once a year or half a year. Archiefweb manages the access copies of the entire Sound and Vision web archive. Once a year the institute receives a dump from the web archive and stores this as a backup. Archiefweb also creates the metadata. Nor the metadata or the website are currently stored in DAAN, but likely will be in the future.

4.4. CONTEXT IN A COMBINED WORKFLOW

In order to preserve the context of reception the different workflows above need to be combined. This is because the context and the game are both different objects within the system. There are different ways to connect web and game-archiving. What way to choose depends on a number of things, such as the significant properties of the context and why the context is collected in relation to the game. During the selection process arguments are made as to why to preserve a game or not. Based on those arguments context could be

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selected at the same time. Every game has been selected for a reason and the context could underline this reason or tell a story of why the game is significant. On the gamescanon website every game has a small section explaining why the game was chosen. For example, Rhino Rumble was selected, because it was one of the first popular Dutch games on the Game Boy Color (de Vos, *De Nederlandse Gamescanon*). For this game, online reactions such as reviews, or gameforums could be collected to explain why this Dutch game was popular and what kind of impact it had. If a game has an interesting story to tell through context there are different options on how to preserve the context of reception found online. The choice between these options depends on the significance of the context. Examples of this will be explored in the case studies. The options are as follows:

- 1. Preserve additional individual objects as video game context, such as an entire website, the entire content of a game channel on Youtube or Twitch and finally a single video.
- 2. A screenshot of, for example, a webreview as shown on a single webpage that is saved as a TIFF file format next to the game in the system.

Each of these options has its advantages and disadvantages when it comes to the connection to the game in the system. Before going into detail about the different options, there is one precondition for both options that needs to be discussed. A precondition for creating relationships between objects within the archive is the presence of the metadata of objects within DAAN. None of the websites and few of the games are in DAAN yet. For any of the options to work, it is assumed that both objects are in DAAN, which is likely to happen at some point in the near future.

The first option, archiving an individual object such as a whole website or web content from a single streamer or a single video, means the object will have to go through the process as described in the previous paragraphs. Sound and Vision does not have a specific way to connect context and a main object in DAAN. Instead different objects could be connected through a search engine. Everything in DAAN can be made available in one of Sound and Visions portals. Those portals have a search engine for the users. In order to make sure the contextual object appears when searching for the main object, the metadata of the contextual object has to contain the name of the game or even the developer. Metadata in Sound and Vision consist of different levels. The vertical hierarchy of the data model consists of the levels series, season, program, package, item, logtrack and logtrack item and file (Steeman 3). Each level contains specific metadata, for example on the file level, only technical metadata is available. The program, series and season levels hold the descriptive metadata. These levels can be described as:

- the program is the single production or may be the episode in a series
- the series has the overarching information of a multi production
- the season holds specific information that only belongs to a subset of episodes

Program is the main entrance for search. This means that if a user searches a word, this word has to be at the program level or the object relating to the word the user is searching for will likely not appear. An example of the program level metadata can be seen below. To connect context such as a website or a web video to games in DAAN, the games' name has to be in the metadata at the program level. The advantage of this method is that the contextual material is preserved as authentically as possible, as it is stored like any website or web videos in Sound and Vision. A disadvantage is that because every object is archived like a main object, it takes a lot of work and the metadata has to be checked by hand as well to make sure both the main and contextual object appear when searched for it.

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Program Metadata		
	The form contains hidden fields Modify	
Metadata status	Approved	
Series title	A2 Racer	
Title	4 - De Politie Slaat Terug	
Sort Date	01/01/2000	
Summary	Dit spel is het vervolg op A2 Racer III: Europa Tour. Bij dit spel racet de speler van Scheveningen naar Berlijn. Hierbij probeert de politie allee	s op
Long Summary	Genre: Action/Racing Aantal spelers: 1	
Category	games	
Production company	Name Role Davilex Software BV producent	
Asset Rights: License	Blocked	
IPR Status	Blocked	
IPR Metadata	Maker - Person Maker - Organisation Current Rightsholder Terms for re-use Rights conditions Details for re-use ID GRG12 Blocked Blocked Blocked Blocked Blocked	e-u

Figure 3 The Program Metadata of "A2 Racer 4 - De Politie Slaat Terug"

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ZOEKRESULTATEN 4 RESULTATEN			SLA ZOEKO	OPDRACHT OP	
FILTERS					
Sorteer op: Programma datum 👻			\checkmark		
٠	A2 RACER Goes USA 05/07-2002 De speler kan racen met zes racers in Amerikaanse steden als New York, Chicago, V Las Vegas en Los Angeles. De bedoeiling van het spel is om in el…	Vashington D.C.,		☆	
BLOCKED	A2 RACER 3 - Europa Teur 01-01-2000 Deze game is het vervolg op A2 Racer 2. In dit derde deel race je als speler over weg en Engeland.	gen in Duitsland		☆	
2	A2 RACER 4 - De Poille Slaat Terug 01-01-2000 Dit spel is het vervolg op A2 Racer III: Europa Tour. Bij dit spel racet de speler van Sc Berlijn. Hierbij probeert de politie alles op alles te …	cheveningen naar		☆	
	A2 RACER ^{J2 Race 01-01-1997} Je sluit je aan bij een geheim genootschap dat races organiseert over de beroemdste Nederland: de A2. Tijdens deze races moet je je een weg zien te …	e snelweg van		☆	

Figure 4 The results of searching "A2 Racer" in the Media Professionals Portal (MPP)



The second option is to take screenshots and add them to the game in DAAN. Screenshots are chosen, because the alternative PDF files are saved as separate objects. PDF as separate objects are shown as a batch of TIFF files in DAAN. Therefore, it is more convenient to use TIFF format screenshots that can be saved next to the game. This could be done with webreviews. If a webreview or multiple tell a story about the game, the text is most important, not necessarily the interactivity of the website it is presented on. Multiple screenshots of a single webreview can be taken and flipped through to make it readable. Screenshots could be added as well. This requires much less work than archiving a new object. The context will be visible next to information about the game itself, instead of seen as another object through a search engine. However, this method does not preserve the webreview authentically and a large amount of screenshots next to a game may be confusing.

What does this mean for access and presentation? The availability of the contextual materials depends on how it was obtained and what was agreed upon in the contracts. As discussed before, most of the contextual materials will likely be obtained by opt-outs. Therefore, this information can only be accessed on site. For contextual materials that have been obtained by making an agreement with the depositor, it may be arranged that it will be available outside of Sound and Vision. On site the contextual information will be visible through one of Sound and Vision portals. These are: The Media Professionals Portal (MPP). the General Public Portal (GPP), the internal NISV search interface Studio, and the educational platform (Sound and Vision At School) (de Jong, Digital Preservation Sound and Vision 53). The contextual materials will show up when searching for a specific game via the search engine. Although it may not be possible to play the game itself yet, there are now screenshots of the game, gameplay videos and context of reception representing the game. As discussed above in the paragraph on the context of games' reception this is a more complete representation of the game. This allows for better usage by Sound and Vision designated communities, such as media professionals, user groups in the educational domain, academic researchers and the general public.

5. CASE STUDIES

5.1. TOKI TORI

In this case study it will be explored how the context of reception of the game *Toki Tori* can be selected and collected. During the selection of games for the gamescanon, *Toki Tori* was selected for various reasons. The games' character of the same name is one of the most well-known Dutch game characters and the game itself is one of the most popular games of the development company Two Tribes (de Vos, *De Nederlandse Gamescanon*). Another special aspect of this game is that it was released on twelve different platforms: Game Boy Color, Windows Mobile, Wii, iPhone, Macintosh, Windows, Android, iPad, Nintendo 3DS, Playstation 3, Wii U, and Switch. The game itself is a puzzle game with platform elements, released in September 2001 for the Game Boy Color. The game follows a young chick, *Toki Tori*, and his quest to rescue his younger siblings, still in their eggs. The player must pick up an egg in each level using a set number of tools. The game didn't perform too well, as it was released towards the end of the Game Boy Color, but reviews did praise the game. So the game was released on other platforms. Some versions were ports from the original, such as *Toki Tori* for Windows mobile. On the Wii, an enhanced remake was released, featuring a 3D design, while still retaining 2D gameplay and a control scheme specifically for the Wii that

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allowed a second player to join. The iPhone version got some new levels and the PC version even more. Eventually the game would go on to have a sequel as well, *Toki Tori 2+*. From webreviews of the game and its various releases it can be concluded that it's good gameplay and many available versions, each with its own new additions, likely lead to the success of *Toki Tori*. How can this story be pieced together from contextual materials and connected to the game?



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Toki Tori

A freshly-hatched chick is going to save the world on the Game Boy Color, huh? Believe it.

By Craig Harris 🕜 Updated: 20 May 2012 8:03 pm 📄 Posted: 24 Oct 2001 1:30 am

As the lifespan of the Game Boy Color winds down to its last remaining few gasps of breath, it's outstanding to see that the system's last days will have a few games to give gamers something really special to play before they move on. <u>Toki Tori</u> is a real stunner for the 8-bit portable, because it offers a excellent playing game in a design that pushes amazing graphic techniques that the system is definitely not known for.

Features

- More than 60 levels
- 10 different tools to utilize
- Battery save
- · Only for Game Boy Color

The game that the Netherland-based development studio <u>Two Tribes</u> created for the Game Boy Color is very similar in concept to *Lost Vikings*, where players utilize the skills of their character to advance through the structured levels that put these skills to the test. The character <u>Toki Tori</u> is a just-hatched chick that's been left behind after all his brothers and sisters have been mysteriously egg-napped out of their coop. With Toki Tori out of his shell, it's up to this guy to track down his buddy eggs and find out why they were taken in the first place. He doesn't come empty-winged, either, as each level gives the guy a finite number of skills to use, ten in all -- he can build a bridge to gain access to platforms that are just out of reach of a ladder. Later levels require the strategy of creating platforms that disappear only when an enemy ghost wanders onto the activated surface. There are sixty level designs in *Toki Tori*, separated in four worlds of 15 puzzles. When the player completes an entire world, he or she can redo the world in its "hard" mode, or move onto the next world.

The game structure of *Toki Tori* is more trial-and-error based than relying on the gamer's action skills. Sure, several levels do involve outrunning enemy critters and blasting them with an icegun, but you'll spend most of your time carefully plotting out how to tackle each puzzle, and restarting the round each time you happen to screw up...which will occur more times than you may realize. Many puzzles have defining areas that are meant to deceive you into performing an action that might not be the proper move, and several puzzles can only be completed in one specific way...there's no squeezing yourself out of a corner in this game ; once you've screwed up, it's time to hit that reset option.

And as fun and challenging as *Toki Tori* is, what really makes the game shine is its attention to graphical effects...something that'll probably make you go "wowl" when you see it in action. Right from the get-go, you're assaulted with vibrant color palettes, transparency effects (walk behind the waterfall and you'll see what we mean), animated backgrounds and foregrounds, and multiple layers of scrolling...graphic fluff that's a rarity in the world of the Game Boy Color, and just goes to show how much effort the developers went though to make the game. And it even fits right at home on the Game Boy Advance, looking as close to a native GBA game as any Game Boy Color vible has ever come.

Verdict

Capcom picked up a good one when it snagged Two Tribes' Game Boy Color puzzle title for release this year -- Toki Tori may seem like some cutesy platformer by the almost artificially sweet happy face on the front of the box, but the game is brutal and challenging, especially in the deeper levels. And what's more, it retains that "let me try that again" element, even when the levels get frustratingly hard...and trust me, they do.

Figure 5 Screenshot of an IGN webreview of Toki Tori for Game Boy Color (Harris)



Figure 6 Screenshot of a Nintendo Life webreview of Toki Tori for Switch (Craddock)

I suggest that to tell this story, webreviews could be collected and added to the game as screenshots in DAAN. Why webreviews and not other forms of contextual materials, such as Let's Plays? The importance of this game and why it was selected for the gamescanon is, because of its success and release on many platforms. Therefore, for this specific games' story it could be argued that the commentary on the game itself as it is played is not as important. To tell how this game evolved and is still playable on the newest platforms, contexts need to be collected from different times and different platforms. This can be represented through webreviews and not through gameplay commentary. It generally does not show the differences between platforms or the history of Two Tribes. Let's Plays are also a relatively new phenomenon and this game is relatively old. On Youtube the results for Let's Plays are mostly of the newest version, for Switch, although often the makers do not clarify what platform they use. On Twitch, searching for the game gave no results. Whereas for webreviews plenty were available, going as far back as 2001. Webreviews often start with briefly explaining the history of the game and its developer. It continues to describe the



gameplay and in newer reviews, the differences between the game on different platforms. Finally, they pass on a judgment of the game. This can be seen in both webreview examples above. The IGN webreview from 2001 describes the meaning of Toki Tori releasing at the end of the Game Boy Color's' lifecycle and continues to describe the gameplay and how they liked it (Hariss). Nintendo Life's review from 2018 for the Nintendo Switch starts the review with the history of the game, its appearance on many platforms and how it finally ended up on the Switch (Craddock). The rest of the interview follows the same structure as that of IGN's. If a couple of different reviews are collected of different times and platforms, such as the examples, it can tell the story of how Toki Tori became successful and how it is still available after almost twenty years. With the addition of this context next to the gameplay videos in DAAN, all the aspects of Nylund's model are present. The object is represented through the gameplay and the context of reception provides information on the games' importance in our history. As the webreviews contain an in-depth description of gameplay, they can also represent the game experience of the time of the game's release. The webreviews could represent almost every aspect of what Elson et al. consider to be essential to the game experience. Players show or usually describe the narrative and mechanics as they judge a game. If a game can be played with several people there usually will be commentary on the social aspect of the game experience, the last part of Elson's model. By collecting the context, all aspects of both theoretical models on how games should be represented in museums are included next to the game. Therefore, I would recommend saving these webreviews as screenshots next to the game in DAAN. The text is most important, not necessarily the interactivity of the website it is presented on. Screenshots of multiple webreviews can be taken and flipped through.

5.2. UNDERGROUND

This case study looks at a completely different kind of game called: Underground (Grendel Games). This game is a serious game developed by Grendel Games and released in 2015 exclusively for the Wii U. A serious game is a game designed for another primary purpose than entertainment. It usually refers to games used by industries like defense, education, healthcare and politics. However, this does not mean a serious game is not entertaining. In the case of Underground it is a balance between entertaining and healthcare education. The story of the game is about a little girl and her butler robot friend (Underground). When the robot is sent away by the girl's father, she travels through underground caverns to rescue it. She and many other robots get themselves into trouble along the way and it is up to the player to help them out, by using drills to solve puzzles. This is the entertaining side of the game. The serious side however, is the reason why this game is quite special and included into the gamescanon. It is also designed to teach the skills required for laparoscopic surgery, more commonly known as keyhole surgery. The website of the game describes this as follows: "By turning these drills into a fun and engaging video game, experienced doctors and doctors-in-training can practice them at home, and, more importantly, have fun while doing so." (Underground). The game can be played with normal Wii U controllers, but a special laparoscopic controller was created specifically to train the motor skill for the surgery. Although the controller costs 250 euro, it is still much cheaper than the alternative simulators commonly used by doctors.

Going by the description of the game alone, it is difficult to imagine what it looks like to play and what its purpose is. Screenshots of gameplay videos only show what is displayed on screen, which does not inform about how it helps in practicing keyhole surgery. To better understand what makes this game special, there needs to be someone who plays the game, preferably with the special controller. After a long search a video titled "Weirdest & Biggest 3rd Party Nintendo Controller Ever - Surgical Laparoscopic Controller for Wii U" showed up



(Olney). It was the only video to come up that showed both gameplay and the controller. It was made by Nintendo Life, a website and Youtube channel focusing on news and reviews of Nintendo products. Their goal is to review every single game released on a Nintendo console since 2006 (Nintendo Life). In this Let's Play on *Undergound,* Alex from Nintendo Life starts by explaining the serious side of the game, but also that he will judge it as any other game. He sets up the special surgical laparoscopic controller and starts playing the game, commenting on the mechanics and context. He concludes his short gameplay session by giving a brief positive judgement of the game as entertainment and how he believes this game could help surgeons practice their skills.



Figure 7 A screenshot of the Let's Play video from Alex of Nintendo Life playing *Underground* (Olney)

For this game, the mechanics of the special controller and the context of the game training keyhole surgery is most important to its significance. A Let's Play video, such as this one, can encompass this games' story fully. There is the game experience from the time of the games release, with information on all aspects of Elson's model, narrative, context and mechanics. Other forms of contextual materials, such as a website or screenshots could not fully show what this game is about. With this Let's Play video there is also explanation and experience of both the entertaining and serious side of this game. All aspects of Nylund's model are present as well, with context, experience and the controller being a significant object. Therefore, in the case of *Underground* a single Let's Play video should be archived as a separate object to the game. It will have to go through the webarchiving workflow as described above and connected to the game through metadata, which will likely have to be added by hand, as the game's name is not in the title of the video.

6. CONCLUSIONS AND RECOMMENDATIONS

Both case studies were very specific examples of how games could be contextualized and why. However, every game in the gamescanon has been selected for a specific reason. Therefore, the method applied to the case studies can be applied to any game from the gamescanon. Both case studies started with research on why the game was selected for the gamescanon. Next was a search for relevant context that could provide additional information surrounding the reason the game was selected. The selection of the context to be archived was based on the two models for presenting games in an institution. If multiple contextual materials fulfilled this requirement, the ones that encompassed the most aspects of one or both models were chosen, as to reduce the amount of context to be archived. Finally, depending on the significance, quantity and form of the context, one of the two archiving options was chosen. Either select additional objects to be archived according to the workflows previously described and connect them to the game or take screenshots and present them next to the game itself.

To answer the questions at the beginning of this paper. I would recommend the strategy applied to the case studies, to be applied to the games in the gamescanon. The selection criteria of the context to be selected could be based on the two models and the requirement of Sound and Vision for context to tell a relevant story about the main object. This story can be the reason why the game was selected for the canon. However, Sound and Vision should account for the international nature of game culture and allow for context that is about a Dutch game, but has no other relation to the Netherlands. As for how the collection of the games' context could be integrated with the existing workflows, is by choosing to either archive a separate object or use screenshots. The result of this strategy would be a more complete representation of the game in a museum setting, which allows for better usage by Sound and Vision designated communities, such as media professionals, user groups in the educational domain, academic researchers and the general public. The collection of the context of reception is also relevant as the documentation as a preservation method. In the future, this strategy could be applied to other forms of context, such as the context of production. Further research could be on the presentation of this context, especially in exhibitions. Hopefully the first steps in collecting the context of games' reception in Sound and Vision will lead to further research on the subject and games to be better understood as cultural heritage in institutions.

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