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The immaterial aspects of video games: Platforms as preservation sites for traces and communities¹

Benjamin Barbier

- ¹ A previous article published in the first issue of Hybrid magazine considered the uploading and sharing of old video games in ROM² format as a form of patrimonialisation of this medium.³ Along with this phenomenon, there is a diversity of actors: associations,⁴ institutions,⁵ amateurs,⁶ whose objective (or one of their stated objectives) is the conservation of videogame heritage. A common feature of these different groups is that they focus most of their attention on the materiality of video games. However, as we shall see, it seems necessary to consider, in addition to this physical conservation, the diversity of practices surrounding the video game as an intangible cultural heritage, the traces of which would be produced and recorded by the players themselves through different contributory platforms, or even through the set-up and maintenance of their own game infrastructure. We consider these intangible dimensions of video games through the lens of the UNESCO definition, i.e. as a set of “practices, representations, expressions, knowledge and skills.”⁷ This definition acknowledges the insufficiency of material conservation in the heritage process. It also introduces the notion of communities in relation to heritage and emphasizes the involvement of a network of actors for collection and preservation. Thus, the approach to heritage is less vertical and more horizontal, involving communities in a “bottom-up” heritage selection, but also introducing the preservation of these same communities within the heritage process.⁸
- ² In this context, we first propose to outline the stakes of the patrimonialisation of the videogame as a practice, rather than as a physical object. Then, in a second part, we will see how the intangibility of this practice is partly captured by gamers, notably through cultural contributory platforms, in the sense of “any digital device where the members of the public, called contributors in this context, can recognise, define or create the objects that they consider to be part of their culture.”⁹ Finally, we will observe the way

in which gamers artificially extend some games' lifespan, in order to preserve the communities that they have created around them, sometimes by developing their own gaming platforms.

Stakes of videogame practices' patrimonialisation

- 3 The most recent definitions of heritage, including those used by the European Union in the Faro Convention and by UNESCO to define intangible heritage, define it as “a social construct: heritage is what the actors consider being heritage.”¹⁰ In France, the actors involved in videogame heritage include associations such as MO5.com, public institutions such as the BnF (French National Library), the Musée des Arts et Métiers and the Musée des Arts Décoratifs, and private collectors. These different actors adopt a variety of conservation practices. The BnF, for example, which has been archiving video games through legal deposits since the early 1990s, emphasizes the importance of preserving the game's material support and offers access to its collections only through emulation¹¹ on dedicated computers. Associations, for their part, often directly make games and consoles available for the public during the events in which they participate, in order to provide an experience as close as possible to the original gaming experience. By doing so, they accept the inevitable deterioration of the artefacts due to repeated manipulation. Collectors, on the other hand, have often developed their collections as gamers, and being able to play the game remains an important part of their collecting activity. This logic comes under what Bruno Bachimont¹² describes respectively as museological approaches for associations or collectors, or emulation approaches for institutions such as the BnF. In spite of these different ways of considering the conservation of videogames, the common point among these different actors is to focus on the materiality of the object, considering it as “both, semiotically, an index and, relationally, the support of an experience.”¹³ But what will be the remaining traces of this experience in 50 or 100 years, when the game devices will no longer function and the emulators will hardly be able to render the way we played a video game in 1990, since they cut the object from its original medium? A person playing a 1992 videogame in 2021 doesn't play it the way it was played in 1992. The game context is different, the player's experience is different, and this is all the more true since the game activity takes place in the environment of a reading room or a video-game exhibition, which is very different from the bedroom or the sofa in which this activity initially took place. To reformulate these issues using Bruno Bachimont's terms: an “intelligibility gap”¹⁴ will inevitably arise, as time goes by, as it does for any other cultural artefact. In addition to this, there is also an “obsolescence gap”¹⁵ due to the very nature of the videogame, since it “can only be restored through the more or less faithful reconstruction carried out by the playing device.”¹⁶
- 4 On the other hand, this reconstruction alone cannot account for the multiplicity of uses surrounding the videogame. Videogames involve not only material objects (the software support, its playback device, the packaging, the instructions...) but also a set of practices and social skills. These two sets of elements influence each other. Preserving the game's medium and ensuring the possibility of playing it are two fundamental aspects of the videogame's heritage conservation process. Nevertheless, these two aspects alone do not preserve the culture that unfolds around the videogame. The different aspects of these cultural forms developing around each game are

extremely diverse. These aspects can themselves give rise to new cultural objects created by gamers/fans, ranging from the writing of short stories based on the game's universe to the creation of drawings reproducing its graphic universe¹⁷ and the creation of *machinimas*¹⁸ (videos made by gamers using the game engine). Some of these aspects are more directly linked to the way in which the game is played, and these are the ones we are particularly interested in, since they represent traces of a “playing know-how” that give us information about the videogame experience as it took place in its original context. These aspects are also very varied. The following examples will allow us to define more precisely this particular point.

- 5 The most popular games, popular enough to have generated the creation of a “proprietary subculture,”¹⁹ may give rise to a specific terminology to designate in-game practices invented by gamers that have become frequent enough to be worth naming. In real-time strategy games such as *Starcraft* (Blizzard, 1998) or *Age of Empires* (Microsoft Game Studios, 1997), for example, a “rush” designates the creation of units very early in the game, in an attempt to destroy the opponent's base before the latter has even been able to put up a defence. There are particular forms of *rushes*, subcategories of this technique. For example, one can try to build very quickly defensive towers in the opponent's camp in order to attack his buildings before he has the means to destroy them. This is called a tower rush. The terms “rush” or “tower rush” are not mentioned anywhere in these games nor in the documentation provided with the game, such as the manuals. They are the product of a subculture created by the fans, terms invented by the gamers to designate one of the strategies that can be adopted in order to win over the opponent. Usually, this type of specific lexicon, used to designate particular actions performed within the software, is to be found in games with a strong social dimension due to their pronounced competitive or collaborative dimensions. The real-time strategy games mentioned above are some examples of games where the competitive dimension predominates. The massively multiplayer online role-playing games (MMORPG), whose functioning and characteristics will be developed below, are, for their part, examples of games with a strong collaborative dimension. In most online games, however, these two dimensions can coexist and are linked to the way the game is played by each gamer.
- 6 The difficulty of keeping traces of practices applies particularly to this sort of gaming. So even if in the future the *Starcraft* game and the ability to run the application are preserved, much of what the *Starcraft* game was about, will be lost. The fact that the players developed particular techniques (such as the rush) and an associated terminology is not preserved with the software itself. In order to designate these techniques, Manuel Boutet speaks of “styles” of play and argues for their study.²⁰ The players' style represents the way in which they appropriate the software and develop their own ways of interacting, sometimes going beyond the rules by exploiting flaws in the computer code or elements the developers had not thought of. Vincianne Zabban uses the term “hors-jeu” (“out-of-game”)²¹ to refer to a set of codes and gaming practices that are not immediately linked to the software itself. Thus, the informal rules that can be established by groups of players around a game console, such as the fact that the loser gives up his controller to another player, can be considered a form of “out-of-game”.
- 7 In order to create a true “memory”²² of the videogame (in Bachimont's sense), and for it to remain intelligible for future generations, it is therefore necessary to preserve the

traces of these “styles” of play and of the above-mentioned “out-of-game” dimension. These traces will allow the re-contextualization of the object and increase the chances that its intelligibility will last. From then on, it would be interesting to consider the video game not only as a digital artefact but as a set of objects associated with practices whose traces should also be preserved. It would therefore be a matter of applying to videogames a memorial policy similar to those applied to intangible heritage, in order to preserve the object as well as the experience of the object in context. However, for the conservation of these immaterial aspects, the amount of knowledge that would have to be preserved and somehow captured (since a large part of it is not yet formalised), would be enormous. Nevertheless, as we shall see, much of this work is already being done by the gamers themselves.

The production of traces by gamers

- 8 Once established that a videogame is not just a digital object and its reading device, but that it also consists of a set of practices, specific playing skills as well as sociability modes derived directly from its practice, it is necessary to identify the traces of these activities as well as a way to collect them. Fortunately, the expansion of web communities and their reliance on digital technology requires “that objects and acts require registration in order to exist”, as Yves Jeanneret points out.²³ As a result, the tangible traces of these communities’ activities are numerous, and so are the possibilities for collecting them. It is therefore necessary not to identify the traces themselves, as unitary indexical elements of the gamers’ practices, but rather the deposits where it would be possible to collect sets of traces in order to put videogame artefacts back into context. These different deposits, which we will try to identify in this chapter, constitute themselves a heterogeneous documentary ensemble, due to the disparities among the elements that compose them. They thus constitute “patchworks allowing a permanent switch between practices and objects corresponding to a divergent logic of communication.”²⁴ Because of the nature of the forms of expression of the public on the Web, most of these traces constitute in fact mediated productions, whose context is as important as the content. It will therefore be necessary to construct, alongside the data collection activity, a critical apparatus that allows for their interpretation and contextualisation according to their source, by considering these data sets as *tracings* in the sense of Yves Jeanneret.²⁵
- 9 Most of the trace deposits we will mention, come from the action of the communities evolving around each game. In a similar way to Henry Jenkins’ cases studied in “*La Culture de la convergence*,”²⁶ these communities are not created around a feeling of belonging to a territory, a nation or an ideology, but around a media object issued from cultural industry. As is the case for series, films or certain novels, each videogame can thus be observed as the source of a community, whose members will eventually produce media content themselves, thanks to the use of social networks and video platforms, like YouTube. In the case of video games, the Twitch²⁷ platform is also widely used. Twitch is a live video broadcasting platform. It allows players to capture their gameplay on their console or computer screen and broadcast it in real time via the platform. Each player can have his or her own page. On this page, a discussion space is provided so that viewers can comment from a distance on the player’s actions simultaneously and discuss among themselves. After the live broadcast, the videos, as

well as the conversations that took place during their broadcast, are archived on the platform. During these live broadcasts, many players/broadcasters comment on their activity simultaneously using a microphone. The most pedagogical broadcasters explain their actions in a rather precise way. Others simply transmit their emotional states: joy, disappointment, concentration... Players who broadcast their games are also interpreters. They explain their actions, their strategies, detail the way in which they implement them, and the audience does the same through the discussion space.²⁸

- 10 YouTube also has many videos related to gaming, more diverse than those available on Twitch. In particular, there are more editorialized productions. Game sequences can be cut with editing software, in order to only keep the best moments. The video makers often add effects to these sequences to highlight important, impressive or even funny moments. On this platform, there are also “channels” dedicated to videogame commentary. Just as one can comment on a soccer game, it is indeed possible to comment on a videogame competition. These comments try, for the most part, to explain more precisely what is happening during the game, to give viewers information that they would not necessarily be able to perceive by simply watching the video. These comments often include information about the player’s “style” and the specific strategies they adopt. Thus, also in YouTube videos posted by gamers and fans, we find traces of these “out-of-game” practices related to the intangible aspects of videogames. YouTube also serves as an archive for streams (live broadcasts) originally broadcast on Twitch. Some videogame channels on YouTube offer almost exclusively recordings of live broadcasts. For some popular videogames from the late 1990s or early 2000s that preceded the emergence of these platforms, the gaming community produced *mods*²⁹ for converting them to high definition. This gave new vitality to the capture and broadcasting on Twitch and YouTube of some commercially “obsolete” games. For example, there are YouTube channels dedicated to *Heroes III* (The 3DO company, 1999) or *Caesar III* (Sierra, 1998), which are considered to be old, in videogame terms.
- 11 On the other hand, there are also many specialised websites that list, for example, the different strategies that can be adopted in order to win a competitive game. Some websites automatically collect data from video games in order to publish them and offer them to gamers. The *op.gg*³⁰ website, for example, collects data from *League of Legends* (Riot, 2009) so that players can reproduce the strategies of the most skilled competitors or follow their ranking. This website thus provides a precise idea of the game’s “meta”³¹ at a given moment: which choices are the most popular, the most effective, most frequently adopted strategies, etc. Some games also have a *replay* function that allows players to record a digital trace of all their actions, so that they can replay them later. Replays are saved by the players themselves, but many are also uploaded to be consulted by the game’s community. This is notably the case for most real-time strategy games but also for the most recent fighting games. Collecting these *replays* would also make it possible to build an archive of the playing skills associated with the games.
- 12 Platforms such as *reddit*,³² which are, in a way, more open versions of the former forums, also gather many topics of discussion about videogames containing information related to these external dimensions of the game itself. Traces of the intangible aspects of videogame practice do thus exist and have already been put online by the community for the most recent videogames. This is not to be considered as voluntary heritage conservation, but the amateur productions that we have mentioned

can be seen as an important set of documents on the practice of videogames. It would then be a question of “integrating [these] practices’ traces into documentation programs aimed at heritage preservation”³³ in order to allow for their re-appropriation by the communities that produced them, thus passing from a storage logic to a memorial logic.³⁴ These traces only need to be collected via, for example, web archiving techniques. Such techniques must be combined with other videogame conservation devices in order to offer the most complete preservation possible of the game’s object as well as its practice’s most thorough conservation possible. It would thus be a question of capturing this shared memory³⁵ of the videogame, as much as ensuring the maintenance of its cultural intelligibility³⁶ over time.

- 13 For older games, those that date back to before the birth of these distribution platforms or specialised sites as we know them today, there is no equivalent digital data set. Instead, information is disseminated in game guides published in book format as well as in specialised magazines. Still, a form of archiving is already carried out by the gaming communities. In France, for example, the abandonware magazines website³⁷ aims to digitalize and upload the entirety of the videogame press published between 1982 and 2010. Although the articles in these magazines are not always the most relevant sources to find traces of the videogame subculture, classified ads and readers’ letters sections are full of information for researchers wishing to conduct a cultural history of video games.³⁸

Preserving digital communities: the case of MMORPGs

- 14 Massively Multiplayer Online Roleplaying Games (MMORPGs), including the famous *World of Warcraft* (Blizzard, 2004), are a rather special type of game. To summarise their characteristics very briefly, these games offer to a large number of players³⁹ to meet in online universes in order to share adventures through an avatar. Unlike “classic” video games, which can be deployed without necessarily creating a community around them, MMORPGs have the explicit aim of creating a community, without which the game itself does not exist. Ralph Koster, creator of a MMORPG based on *Star Wars*, says that “it’s not just a game: it’s a service, it’s a world, it’s a community.”⁴⁰ This type of game where the majority of the gameplay takes place online, through interactions with other players, raises several technical problems for those institutions, such as the BnF, that are concerned with the matter of their preservation. First of all, the servers to which players connect, and on which the major part of these online worlds relies, are owned by the possessors of the game, which are private companies. Accessing these servers may require an individual subscription. Protection mechanisms also prevent the data on these servers from being copied or modified.⁴¹ Finally, even if these obstacles were circumvented and if it were possible to keep a copy of this “virtual world”, it would not provide future videogame historians with much information about how it may have worked when it was heavily “populated.” Indeed, the interactions between the players are not directly archived by the game. These interactions are very diverse and sometimes go far beyond the simple fact of playing the game. Some players go so far as to hold wedding ceremonies to celebrate the union of two players who met in the game, or even funeral rituals when a member of the community dies.⁴²

- 15 In an attempt to overcome the difficulties of preserving this type of game, the BnF together with Sélim Ammouche⁴³ (an associate researcher in the Audiovisual Department at the time) organised a series of game sessions recordings that would make it possible to document the way in which these games were played as well as the various actions carried out by gamers in this context. The BnF has also considered collecting donations of game footage captured by the players themselves.⁴⁴ This solution makes it possible to get around the technical difficulties raised by this type of game. Although it is not totally satisfactory in terms of preservation, it makes it possible to consider the videogame in its intangible dimension, which can only be preserved in the form of traces.
- 16 Moreover, in the case of MMORPGs, other archiving devices do exist, this time set up by the players themselves. We have already mentioned the fact that MMORPGs only really exist thanks to the presence of a large number of players in the worlds they create. This makes MMORPGs a type of game for which the intangible dimensions are particularly present. Since the game is largely built on the interactions between players, the actual practices of these players are crucial to the understanding of the game.
- 17 In addition to the centrality of the gaming community in MMORPGs, there are particular constraints regarding obsolescence. Like most software, these games are in constant evolution. They change from one version to another. Some of these versions introduce major changes to the game. Typically, the publisher adds new content such as additional progression levels, new group adventures or new ways for players to challenge each other. These larger changes are called game expansions. *World of Warcraft*, the most famous and most played MMORPG, is now on its eighth expansion in its 17-years history. Each expansion changes the game's content. Graphics can be changed, game areas removed or transformed, etc. Some *World of Warcraft* players want to play the original game again, the one that was released before the eight expansions. For this purpose, there are pirate servers⁴⁵ that for example limit to the first edition of the game.⁴⁶ This raises many problems for the publisher, especially on financial and legal terms. The publisher regularly shuts down these pirate servers, which entail a loss of income, but also an illegal use of copyright. Nevertheless, for gamers, it is a way to preserve a game environment they are attached to. They continue to use previous versions of the software, considered obsolete by the publisher. In response to this phenomenon, the game's publisher, Blizzard, has released its own version of the original game in 2019 and called it *World of Warcraft Classic*, doubling⁴⁷ the total number of players present on the different versions of the game (the current version and the "classic" version).
- 18 More generally, this raises the question of how to preserve games, such as MMORPGs and others, that can only be played online. The rendition of these games in their authentic condition is not dependent on individual players, but on several thousand players' simultaneous interaction. Games like *World of Warcraft*, which have millions of players, contemplate the rise of these pirate servers and even after the game is abandoned by its publisher, we may potentially see these types of solutions put in place, so that the most passionate players can continue their experience beyond the commercial end of the game. The game *Star Wars Galaxies* (LucasArts, 2003), which is an MMORPG quite similar to *World of Warcraft* in its gameplay, saw its servers close down by decision of the publisher in 2011. However, the gaming community decided to open

its own servers in order to continue playing.⁴⁸ These servers seem to be sufficiently populated for the experience to approach that of a player logging in at the time the game was still being commercially exploited.

- 19 Just as cinephiles wish to have the opportunity to see again the movies they liked, videogame players wish to be able to re-play, as long as they want, the games they enjoyed, thus preserving the community they have created. To do this, they are willing to go so far as to take care of the important maintenance required by certain types of games in order to keep them going. However, in the stake of building a memory of the videogame, these practices cannot be considered as a form of perennial conservation. These communities are likely to disintegrate when their members quit, and the illegal nature of these actions puts them under the permanent threat of closure by the publisher who owns the game's intellectual rights. However, they allow to increase the number of traces by prolonging the lifespan of the game, which makes it all the more urgent to set up a massive and deliberate data collection campaign.

Conclusion

- 20 Considering the video game in its intangible cultural heritage dimension makes it possible to bring forward the topic of players' practices and to consider the game not only as an informational device requiring the combination of software and reading support in order to be preserved, but also as the support at the origin of a set of social and cultural practices that are likely to disappear, even if the material object is preserved. However, we have shown that the players involved in these types of practices already produce their own traces and upload them on contributory platforms. We have also seen how the most passionate players of a videogame were able to take care of their infrastructure by themselves, in order to preserve their communities. Contrary to what we see with institutions or associations dealing with the preservation of videogames, a will to build heritage is rarely formulated in relation to this type of preservation act, except for a few exceptions. Considering the video game as an intangible cultural heritage allows us to consider this production of traces from a memorial point of view.
- 21 The evolution of the videogame economy towards an increasingly widespread platformisation and the progressive abandonment of physical supports⁴⁹ makes the issue of its preservation more and more important. In this context, frequent updates by publishers often lead to the loss of previous versions for the public as well as for preservation institutions, such as the BnF. The restrictions and the rigidity of publishers in terms of copyrights are an additional obstacle to the conservation of games in the form of a physical medium. It is then possible that considering videogames as intangible cultural heritage, accessible only through the traces left by their players, constitutes the only future for the conservation of this medium, for which it will then be necessary to replace the museological, emulation or migration approaches with a descriptive logic⁵⁰ based on the traces left by the players.

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NOTES

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2. A ROM (or Read-Only Memory) refers to a storage format used in game media (cassettes, cartridges, CD-ROMs, etc.) that is interpreted by the player (the computer or game console).
3. Benjamin Barbier, "Jeux vidéo et patrimoine: une conservation amateur?," *Hybrid*, no. 1, 2014.
4. For the French associations, we can mention: MO5.com, RGC, WDA, ACONIT, Silicium...
5. Notably the Bibliothèque nationale de France (BnF), but also the Conservatoire national des arts et métier (Cnam) and the Musée des arts décoratifs.
6. There is a large community of videogame collectors, as well as web communities offering old games or documents related to old games.
7. Unesco, *Convention for the Safeguarding of the Intangible Cultural Heritage*, Paris, 17 October 2003, article 2.1.
8. See: Marta Severo and Tommaso Venturini. "Enjeux topologiques et topographiques de la cartographie du Web. Le cas du patrimoine culturel immatériel français," *Réseaux*, vol. 195, no. 1, 2016, p. 85-105.
9. Marta Severo, "Plateforme contributive culturelle," *Publictionnaire. Dictionnaire encyclopédique et critique des publics*. [Online] <http://publictionnaire.huma-num.fr/notice/plateforme-contributive-culturelle> [accessed 22 April 2021].
10. Jean Davallon, "Comment se fabrique le patrimoine: deux régimes de patrimonialisation," in Chérif Khaznadar (ed.), *Le Patrimoine. Oui, mais quel patrimoine?*, Arles, Actes Sud, 2012, p. 41
11. Emulation is a process that allows to reproduce, in the form of a software, the functioning of an electronic machine. The software that allows to emulate the behaviour of these machines are called emulators. They reproduce, in a computerized way, processes which, originally, are based on interactions between electronic components.
12. Bruno Bachimont, "La présence de l'archive: réinventer et justifier," *Intellectica - La revue de l'Association pour la recherche sur les sciences de la cognition (ARCo)*, 2010, no. 53-54, p. 23.
13. Jean Davallon, "Comment se fabrique le patrimoine: deux régimes de patrimonialisation," in Chérif Khaznadar (ed.), *Le Patrimoine. Oui, mais quel patrimoine?*, Arles, Actes Sud, 2012, p. 45.
14. Bruno Bachimont, "La présence de l'archive: réinventer et justifier," *Intellectica - La revue de l'Association pour la recherche sur les sciences de la cognition (ARCo)*, no. 53-54, 2010, p. 22.
15. Bruno Bachimont, "La présence de l'archive: réinventer et justifier," *Intellectica - La revue de l'Association pour la recherche sur les sciences de la cognition (ARCo)*, no. 53-54, 2010, p. 22.
16. Bruno Bachimont, "La présence de l'archive: réinventer et justifier," *Intellectica - La revue de l'Association pour la recherche sur les sciences de la cognition (ARCo)*, no. 53-54, 2010, p. 22.
17. These productions are commonly referred to as *fanart*. The DeviantArt platform hosts, among other things, a large number of graphic productions of this kind, although most of the productions are nowadays published on social networks like Instagram.
18. On this topic, see Fanny Georges and Nicolas Auray, "Pratiques créatives issues du jeu vidéo. Les séries de machinimas," in Imad Saleh et al. (ed.), *Hypermédiat et pratiques numériques*, Paris, Lavoisier, p. 117-128 as well as Fanny Barnabé, "Les machinimas: entre jeux et vidéos. Vers un poétique du détournement vidéoludique," in *Actes du colloque Ludovia*, 2014.
19. Gary Alan Fine, "Organiser les mondes de loisir: la mobilisation des ressources" [1989], *Tracés*, no. 28, 2015, p. 157-182.

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21. Vinciane Zabban, "Hors jeu ? Itinéraires et espaces de la pratique des jeux vidéo en ligne (enquête)," *Terrains & travaux*, no. 15, 2009, p. 81-104.
22. Bruno Bachimont, "La présence de l'archive: réinventer et justifier," *Intellectica - La revue de l'Association pour la recherche sur les sciences de la cognition (ARCo)*, no. 53-54, 2010.
23. Yves Jeanneret, "Complexité de la notion de trace: de la traque au tracé," in Béatrice Galinon-Mélénec (ed.), *L'Homme trace. Perspectives anthropologiques des traces contemporaines*, Paris, CNRS Éditions, 2011, \$16. [Online] <http://books.openedition.org/editions-cnrs/16683> [accessed 22 April 2021].
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26. Henry Jenkins, *La Culture de la convergence. Des médias au transmédia*, Paris, Armand Colin, 2013.
27. [Online] <https://www.twitch.tv/> [accessed 22 April 2021].
28. On Twitch and videogames, see: Samuel Coavoux and Noémie Roques, "Une profession de l'authenticité. Le régime de proximité des intermédiaires du jeu vidéo sur Twitch et YouTube," *Réseaux*, vol. 224, no. 6, 2020, p. 169-196.
29. A *mod* is similar to an extension. It consists in adding functionalities to a software by introducing extra code. We generally speak of a *mod* when the code extension is the result of an amateur production.
30. [Online] <https://www.op.gg/> [accessed 22 April 2021].
31. In the context of competitive videogames, the term "metagaming" refers to the way in which players' choices evolve to adapt to those of other players. The different versions put online by the editor play a determining role in this evolution, making certain strategies less effective while favouring others.
32. [Online] <https://www.reddit.com> [accessed 22 April 2021].
33. Louise Merzeau, "L'intelligence des traces," *Intellectica - La revue de l'Association pour la recherche sur les sciences de la cognition (ARCo)*, no. 59.1, 2013, p. 131.
34. Louise Merzeau, "L'intelligence des traces," *Intellectica - La revue de l'Association pour la recherche sur les sciences de la cognition (ARCo)*, no. 59.1, 2013, p. 115-135.
35. Louise Merzeau, "Mémoire partagée," in Marie Cornu, Fabienne Orsi et Judith Rochfeld (ed.), *Dictionnaire des biens communs*, Presses Universitaires de France, 2017.
36. Louise Merzeau, "Mémoire partagée," in Marie Cornu, Fabienne Orsi et Judith Rochfeld (ed.), *Dictionnaire des biens communs*, Presses Universitaires de France, 2017.
37. [Online] <https://www.abandonware-magazines.org> [accessed 22 April 2021].
38. See, for example, some of the work of the conference "La presse jeu vidéo francophone," organized in 2016 following the Ludopresse project, Labex ICCA/University of Liège.
39. From several thousand to several million depending on the popularity of the game. *World of Warcraft*, for example, has gathered up to 12 million subscribers. See: [Online] <http://www.mmo-champion.com/threads/1832282-WoW-Down-to-5-6-Million-Subscribers> [accessed 22 April 2021].
40. Quoted in: Henry Jenkins, *La Culture de la convergence. Des médias au transmédia*, Paris, Armand Colin, 2013, p. 190.
41. Despite this, some players have opened "private servers" in order to circumvent subscription policies or to be able to modify the game to their liking, but also for preservation purposes.

42. See for example: Olivier Servais, "Cérémonies de mariage dans *World of Warcraft*: transfert rituel ou institution collective?," *tic&société*, vol. 9, no. 1-2, 1st semestre 2015 – 2nd semestre 2015.
43. The title of the research program was: "*Comprendre les enjeux expérimentiels du jeu vidéo dans le cadre de sa conservation*" (Understanding the experiential issues of video games in the context of their conservation): [Online] http://actions-recherche.bnf.fr/BnF/anirw3.nsf/IX01/A2012003742_comprendre-les-enjeux-experimentiels-du-jeu-vidéo-dans-le-cadre-de-sa-conservation [accessed 22 April 2021].
44. Interview with David Berthelot, head of multimedia acquisitions at the BnF, conducted in 2016.
45. On pirate servers more generally see: Vinciane Zabban, "Playing with the scale of the world: the practice of *World of Warcraft* on a private server," *RESET*, no. 4, 2015.
46. Unfortunately, this server, which was run on a volunteer basis, has already been shut down under the threat of a lawsuit from the publisher Blizzard. Nevertheless, here is the link to their website which details the reasons of their activity: [Online] <http://fr.nostalrius.org> [accessed 22 April 2021].
47. Activision-Blizzard is no longer releasing raw subscriber's statistics on the game. However, the company's financial reports do mention this doubling of players between the 2nd and 4th quarters of 2019, which corresponds to the release of *WoW Classic*: [Online] <https://investor.activision.com/static-files/e5f00a21-d818-45ac-a79a-a8005b3e143c> [accessed 22 April 2021].
48. A journalist who visited this server tells her experience in detail here: [Online] <http://kotaku.com/star-wars-galaxies-is-dead-but-these-people-are-keepin-1786587786> [accessed 22 April 2021].
49. Pierre-Jean Benghozi and Philippe Chantepie (eds.), *Jeux vidéo. L'industrie culturelle du XXI^e siècle ?*, Paris, Ministère de la Culture - DEPS, 2017, p. 109-151.
50. Bruno Bachimont, "La présence de l'archive: réinventer et justifier," *Intellectica - La revue de l'Association pour la recherche sur les sciences de la cognition (ARCo)*, no. 53-54, 2010, p. 23.

ABSTRACTS

This article proposes to consider the video game as its immaterial dimensions in the perspective of its patrimonialization. The first part of the article sets out the theoretical framework and the issues involved in this approach to the object, dealing in particular with the notion of traces and videogame culture. The second part focuses on identifying the potential sources of these different traces left by the players as well as distinguishing different sources that could be exploited in a conservation perspective. The article then focuses on the particular case of online games such as MMORPGs, which require the existence of digital communities in order to exist, and on the problems they raise in terms of their preservation.

INDEX

Keywords: video games, digital preservation, intangible heritage, traces, video game culture

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