

(In)Visible Women: Multidisciplinary Creation and Collaborative Research in Transmedia Art and Gaming in Portugal

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Abstract

In this paper, we discuss the arts-based, collaborative research we have been carrying out as part of a research project that aims to map the evolution of female participation in the digital games sector in Portugal. Artists, designers, programmers and a psychologist have contributed to this project. This paper argues, in particular, for the potential of multidisciplinary collaboration in arts-based research and shows how this potential is manifested in two audiovisual projects made by the Game Arts and Gender Equity (GAGE) team. We discuss the process of creating a completed animation called “The Women of Timex-Portugal” and a short film in progress called “Mnema”. Through the audiovisual works presented here, we want to disseminate the results of the study on the evolution of female participation in the digital games sector in Portugal and to raise awareness among a wider audience about the micro-processes of female exclusion in this sector. Also, we pay tribute to the women hidden in the history of video games in Portugal and encourage more women to enter this industry. Finally, we conclude with a critical reflection on these collaborative arts-based research processes and discuss our ongoing and future work.

Keywords

Arts-based Research, Women, Gaming, Animation, Multidisciplinary, Portugal.

Introduction

A factor to consider in the micro-processes of women’s exclusion in the digital games sector is how the protagonists who make up the historical narratives about gaming and

their industry are chosen. These narratives are relatively homogeneous and focus mainly on the success stories of companies, game developers, hardware and software produced mainly in the United States, England and Japan. As Swalwell [1] points out, this is caused by an orthodox and biased way of writing history that is often done by those in privileged positions who have the power to choose, decide and establish what from the past is important and worthy of being remembered. The hegemonic narratives may also be the direct consequence of specific historiographical methods [2] which involve the selection, classification and prioritisation of historical narratives and different modes of production and marketing of digital games. These approaches are inherently biased against women and, in effect, serve to exclude them from the universal history of digital games that privileges what Nooney [3] has called “patrilineal chronicle”. Thus, while these narratives strive to canonise the “founding fathers, hacker heroes, and the gaming gods”, they also help to maintain the invisibility of the women who assembled computers and consoles in the 1970s and 1980s [4] or who collaborated in the art, design, marketing or programming of digital games, or even the artists who participated in the early days of gaming culture by producing interactive works using some elements of the electronic game.

In Portugal, there are constant patterns of invisibility of female participation in the historical canons of the games industry, and the relegation of their work to the margins in the narratives that have been published in the interactive digital arts. [5, 6] On the one hand, obfuscating the connection between gaming communities and the artistic milieu, to amplify the contribution of areas that are more easily controlled and associated with men (such as engineering and programming), has led to electronic games being emphasised as an activity that is much more

technological than artistic. On the other hand, the agents who produce and reproduce the history of digital games and their industry, such as journalists, amateurs, curators, historians and academics with little concern for gender issues, have not been able to recover the narratives of cis and transgender women who are equally important in this history.

In the Portuguese context, the invisibility of women in the local history of digital games can also be caused by the lack of critical analysis, accuracy, and ethics in the collection of narratives and source materials that can contribute to the unbiased construction of women's self-reports published on blogs or their interactive and/or playable digital works created in the initial phase of the massification of the internet are often neglected. As Gouveia [7] points out, "many artistic projects from this historical period are still inaccessible to the public and a huge effort has been made in recent years to leave a legacy for future generations. It should be noted the creation of institutional databases that make the history of these interactive media such as, for example, the ADA, Archive of Digital Art (former Database of Virtual Art), the File Festival Archive, or even the creation of a space for reflection on these topics within the framework of the International Symposium on Electronic Art (ISEA) and the ISEA Symposium Archives".

We have been mapping the evolution of female participation in the digital games sector in Portugal since 2019. We have collected data through different research sources, namely newspapers, magazines and advertising from the 1980s and 1990s, in-depth interviews, biographies, autoethnographies and other personal documents of women who have participated in local gaming culture. [5] In this ongoing research project, we aim to locate and remove from anonymity as many Portuguese women as possible who have participated in some way in the digital games sector, placing them as protagonists of this history and giving visibility to their experiences with the gaming universe. In this way, we want to give visibility to their lifepaths, and to the economic and cultural conditions that allowed them to participate in this sector and to insert their names and works into the history of digital games. We also want to preserve the playable digital works they created (or on which they collaborated in some way) and promote a broader discussion about the micro-processes of women's exclusion in this sector.

We are aware that like all forms of historical discourse, this topic has to be constructed critically, not in the sense of "adding people", but to critically analyse the economic, social and cultural conditions that women lived in and how they related to the technologies of their time and, in particular, to the gaming sector. So, we are not interested in adding women's names to confirm that they did, after all, participate in this sector in different ways. For us, the most important is to explain their historical marginality and critically analyse how intersectional gender is a social

marker that profoundly affects who has (and who does not have) access to these spaces that are still dominated by men. Bringing to light the testimonies of women excluded from the historical canons of digital games can also encourage the emergence of new narratives, breaking with the orthodoxy of the global history of digital games, as Swalwell [1] suggests. In addition, it can promote a network of connected stories about women and other invisible groups, contributing to the work undertaken by the non-profit organisation Women in Games and the Strong National Museum of Play with its "A Brief History of Women in Gaming." It can also open up prospects for future multidisciplinary and interdisciplinary research into intersectional gender and the confluence of economic, political, cultural, and patriarchal dimensions that underpin these invisibilities and the maintenance of the aforementioned "patrilineal chronicle." [3] Last but not least, it can encourage other people (women and men) to tell their stories, revealing the conditions that have silenced them or not given due value to their various forms of participation in this sector.

The main aim of this paper is to present the arts-based research and collaborative work that we have been carrying out as part of the research project called Game Art and Gender Equity, namely two audiovisual creations made by the project's female artists and researchers, the purpose of which is to disseminate the results of the study on the evolution of female participation in the digital games sector in Portugal and to raise awareness among a wider audience about the micro-processes of female exclusion in this sector. Before discussing these audiovisual projects (namely animations), we first argue for the potential of collaboration in arts-based research. We then argue for the specific potential of the animated documentary for addressing the micro-processes of female exclusion. After this, we describe the creative process of the two audiovisual works. The first animation which we will address is called "Women of Timex-Portugal" and was completed in mid-2023. The second audiovisual work is an animated short film called Mnema, which is a work in progress. Finally, we conclude with a critical reflection on these collaborative arts-based research processes and discuss our ongoing and future work toward making visible the contributions of women in the digital games sector in Portugal.

The Potential of Collaboration in Arts-based Research

According to Nooney [3], media archaeology techniques have been inadequate for critically analysing gender in the history of video games. In addition, Laine Nooney and other feminist researchers [8, 9, 10], who consider that power is not a single entity, but a multifaceted process, have suggested some methodological guidelines for analysing how decrees of power fall more heavily on certain types of bodies than on others. Rosi Braidotti [9], for instance,

proposes that we use “cartographic accuracy, with the corollary of ethical accountability, and the combination of critique with creativity, including a flair for paradoxes and the recognition of the specificity of art practices.” After all, artistic practices and objects are wild devices that suggest weird connections and liaisons, evoke ancestry and promote intertextuality. [11]

Also, as Anne Balsamo [8] suggests,

by modeling and improvising in a social setting, participation in collaborative acts of designing new technologies enables people to learn both practices and habits of mind from other collaborators. Furthermore, collaborations that involve people with expertise in different domains provide a more diverse set of practices and frameworks to draw on in a creative endeavour. If indeed the genesis of creativity is the escape from one range of assumptions to another – then the inclusion of people with different backgrounds and varied expertise on a collaborative design team is a critically important source of creative thinking.

In this way, we are guided by a research approach that uses artistic, critical, and ethical elements that seek other ways of looking at and representing the experiences of women and other historically marginalised groups in the digital games sector and, likewise, we are guided by a feminist and transdisciplinary epistemological approach that integrates different areas of knowledge, reconciling knowledge from the humanities, social sciences, multimedia art and technologies. We are convinced that the operational intersection of knowledge from various fields helps us to overcome certain disciplinary prejudices and assists us in the construction of knowledge. In addition, we look to the past and the present as a way of creating alternative narratives about the phenomena we are studying, and as a way of transforming the painful experience of invisibility and non-existence (of humans and non-humans) into relational encounters that generate knowledge and alternative futures [12]. Following these approaches, the arts-based research we have been developing includes researchers from different fields, such as psychologists, designers, multimedia artists and programmers.

In this ongoing research project, we are adopting the following methodological design: i. after data collection, the GAGE project researchers, who are more familiar with qualitative research methods, carry out a first reading of the data. We then categorise it according to our research questions. Generally, we use the Thematic Analysis model [13] to name the categories that will then be analysed in the light of feminist and gender studies assumptions. At this stage of the analysis, we share the collected data with the artist-researchers (either on Google Drive or Miro) and, after discussing and analysing the categories, we define the various ways of disseminating them.

In this collaborative process, each researcher’s view and ideas are considered, since they are all familiar with the object of study and its epistemological assumptions that

lead to a critical and creative reading of the data. One of the great advantages of this collaborative and transdisciplinary process is the holistic understanding of the phenomenon we are researching, which enables us to embrace the complexity of our object of study and have creative insights based on the knowledge that comes from different disciplinary areas. In the next section, we will argue for the potential of animation to address our research topic, and then move on to present in detail the process of creating two collaborative animations created in 2023 by the Game Art and Gender Equity project team.

The Potential of Animation

Nea Ehrlich [14], in her book *Animating Truth*, challenges the idea that animation is not efficient for tackling “serious” and “real” subjects and proposes a more inclusive and enthusiastic vision of the expansion of new media, digital visual culture and the use of animation as a possibility for documenting the real [15].

With new digital technologies, artificial intelligence, and virtual and augmented realities helping to shape the way images are present in everyday life, the debate about what “truth” and “reality” really are has been renewed. Questions are being asked about how, why and by whom reality is being represented. Thus, in the current neoliberal context where democratic ideas are being called into question by a cynical, blind and deaf minority, the truth is no longer just about the facts, but about the collectively constructed truth, about what is thought or felt to be “the” truth. As Gouveia, Lima, Unterholzner, and Carvalho [11] point out, in this debate in which the cynical perspective insists on a kind of blind view where everything is illuminated but nothing is seen, a world of ghosts, zombies, and easy prey of conspiracy theory coexist with scientific and political knowledge that cannot escape the horizon of their own experience any more than embodied ones can, but it does not mean that they are not looking at the same thing and thinking ways to articulate it.

This cultural phenomenon has been significant for its political dimension in times of crisis, as happened with the COVID-19 pandemic, where scientific facts related to the need for prophylactic isolation and vaccination, for instance, were questioned and contradicted worldwide in favour of political and economic agendas, getting public opinion manipulated through fake news, misinformation, advertising or even censorship. [15]

In this context of post-truth [16], digital animation has also opened up space for new forms of documentation, since it is the inconsistencies and contradictions between reality and fiction that give animated documentaries a way of revolutionising narratives. In other words, it is the intertwining of these two concepts (reality and fiction) that is at the basis of the multiplicity of micro-narratives within the social and political contexts of the hegemonic history that is accepted as a basis. [15]

Ehrlich [14] argues three reasons for the potential of the animated documentary: i. “the evidentiary status of animation as documentary imagery”; ii. “the relationship between animation and the prevailing technoculture”; iii. “the aesthetics of ‘the real’ and its representations.” This author adds that the animated documentary, as a genre that is in a transitional and discovery phase, should not be seen as an opposing language to photography, but rather as complementary.

The animated documentary makes use of various other devices, such as photographs, archive footage, or the audio of interviews conducted. Thus, they help to validate the documentary component of the animation, since it is familiar and adds an “aura” of symbolic presence capable of making the work “look/feel more real.” [15] Nea Ehrlich [14] called these “warranting devices”.

According to this author:

The term warranting devices was coined by Steven Lipkin to identify the ways in which docudrama ‘validates... assertions... that warrant’ that what we are watching is (to some degree) true. These ‘anchors to realities’ and/or familiar stylistic documentary conventions increase a sense of truth-value and help steer the viewer into a documentary ‘mode of spectatorship’ or ‘documentarizing lecture.’

Thus, for us, digital animation presents itself as an efficient and powerful visual way of addressing the micro-processes of female exclusion in the digital games sector and, at the same time, serves as a resource for criticising the gaming sector as a mirror of a binary and sexist society, where men have a preponderance in the narratives created and developed.

Digital Animation: The Women of Timex-Portugal

Computer games became mainstream in Portugal in the 1980s, through the widespread use of home computers (mainly the ZX Spectrum) and the intense piracy of game cassettes [17, 18]. The conditions that allowed for the mass consumption of computers in the country were the improvement in Portuguese families’ incomes, the domestic production of Timex Sinclair and Timex Computer computers, as well as the public and media debates surrounding the so-called information technology revolution.

Timex is an American company that was based in Portugal until the end of the 1980s. It was one of a series of multinationals that established themselves in Portugal in the 1970s, taking advantage of the excellent conditions for investment that the country offered before the fall of the dictatorship and the establishment of democracy, namely low wages, a state-controlled trade union movement, investment facilities and lower taxes, among other benefits. It was specialised in the manufacture and assembly of wristwatches. In the early 1980s, it began assembling home computers, namely the ZX 81 model and later the ZX Spectrum, initially manufactured in Scotland. The Timex

factory employed around 2,000 workers, most of whom were women.

The mass production of Timex computers was the first industrial digital electronics operation in Portugal. [18] Although the computers were based on the Sinclair project, and the technology was new to the Portuguese people, its industrial organisation was based on Portuguese know-how and techniques. In this way, the presence of the Timex company in Portugal brought many benefits to the population, both in the training of a first generation of highly qualified specialists in digital electronics industrial operations and in the establishment of the home computer supply chain.

There is a very interesting research proposal by Mona Bozdog [4] called Generation ZX (X). This researcher examined the narratives of women who worked at the Timex factory in Dundee. According to Bozdog, most of these women never understood the impact they had on the development of the digital games sector in Dundee. In Portugal, there are no consistent studies that explore the importance of former Timex workers to the later development of the Portuguese digital games industry. Furthermore, the connection between women’s work on the computer assembly lines of the Timex-Sinclair project and the digital games industry has never been analysed in depth. Faced with this gap, one of the phases of the GAGE project is to identify and interview as many former Timex-Portugal workers as possible. We also want to pay tribute to these women because they are among the many hidden figures in the history of the Portuguese digital games industry.

As we did not know how to find these women, we made a digital animation to draw Portuguese society’s attention to the importance of the former Timex-Portugal workers in the period when the first home computers were produced in the country. The animation also served to reach these women, since one of our purposes is to interview them to identify how they related to the technology they helped produce, as we mentioned earlier.

To create this animation, we compiled records about Timex Portugal’s computers from newspapers, magazines and TV shows from the period we researched. These images and texts, in parallel with the interviews with collectors and hobbyists of Portuguese retro games gathered in the postdoctoral investigation of one of this article’s authors, Luciana Lima, served as reference for the development of the script and art concept for the animation. Some still images from actual footage from Timex factories in Portugal and Dundee have been used in the final animation, which adds some illustrated interventions over the women in the photos. Apart from the historical images, we collected images from 1980s video games, such as *Technician Ted* (1984) and *Geography 2* (1984) which served as visual inspiration and were also sometimes incorporated into the animation.

After the development of the script, written by Lorena Ramos, a PhD student in Multimedia Art at Faculdade de Belas Artes de Lisboa, elaborated the decoupage and storyboard of the animation (see Figures 1 and 2), combining the references and found footage with new illustrations.



Figure 1. Storyboard for the Animation Project “The Women of Timex- Portugal Project”. ©Authors’ Copyright.

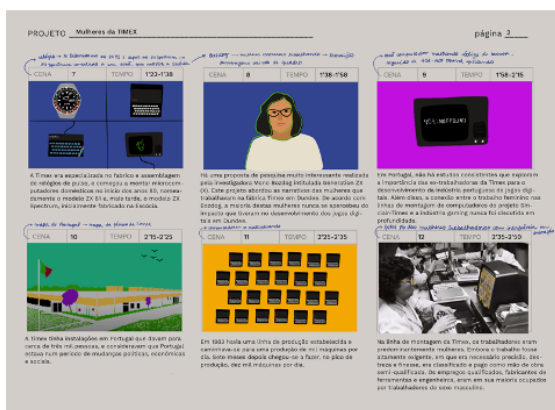


Figure 2. Storyboard for the Animation Project “The Women of Timex- Portugal Project”. ©Authors’ Copyright.

The drawings were created on a tablet with Procreate and the animations were produced on RoughAnimator and Premiere Pro, in a process that took around three months. The manual animation was created in 8 frames per minute, although scenes with computer animation follow a 24-frame-per-second rate. There have been different animation techniques combined, from straight-ahead frame-by-frame animation to simple cycles of illustration over photographs (see Figure 3).



Figure 3. Still from “The Women of Timex- Portugal Project” ©Authors’ Copyright.

The narration was recorded by post-doctoral researcher Terhi Marttila. She made the initial draft of the voiceover, however, it was clear that some parts of the text did not translate well into spoken audio, and also that the text was too long, once this first recording had a total length of six minutes and eight seconds while the animation was planned to be four minutes and 30 seconds. Terhi and Luciana reworked the text in late June, and a second version was recorded, still totaling five minutes and 15 seconds. Terhi recorded the text a few times, managing to reduce the length to four minutes and 25 seconds by accelerating the speed of her speaking, and this third iteration became the final voiceover for the animation. Marttila used Ableton to record the voiceover and a SHURE SM58 microphone connected to the computer using a MOTU M4 audio interface

To construct the audio of the video, alongside the voiceover by Terhi, Lorena Ramos also used audio clips and effects from royalty-free websites, as well as some original audios from the ZX Spectrum system, recorded with the computer using emulators available at the *Internet Archive*. At the end of the video, we have added the animated title card created by artist-researcher Inês Costa.

As above mentioned, one of the goals of this animation is to highlight the role of women in the development of Portugal’s video game industry and make this information more accessible by presenting it in an attractive way that is easy to understand and share. Moreover, in the final part of the animation, we invite women who have worked at Timex to contact us and tell us about their stories, so that we can hear more voices and register them. At the time of writing, the animation had received more than 600 views on GAGE project’s social networks, and a former Timex-Portugal worker has successfully been contacted.

MNEMA: Animated Film in Progress

This audiovisual work seeks to unite the voices of eight Portuguese women who are linked to the gaming sector and who were interviewed by one of the authors of this paper. It received funding from the Atlantic Culture Promotion Agency in March 2023. This agency is a non-profit public benefit association based on Madeira Island, in Portugal. Initially, the project arose from the sharing and analysis of the interview recordings and archival material, essential for analysing the beginnings of gaming culture in Portugal.

Following a global trend, the Portuguese games developed in the 1980s almost always featured male characters and unequivocally represented the Portuguese social and political context in terms of rape culture, hypersexualization of the female body, and racism, such as in the Portuguese games *Paradise Café* (1985) and *Sex Crime* (1985).

By analysing the data collected and shared on the Miro platform (see Figure 4), we also had to find new references to indie digital games and female game developers. The main inspirations range from video games from the 1980s, such as arcade games, to indie games produced in the last decade that still influence us today. Reference elements include the platforming of *Super Mario* (1985), the labyrinthine structure of *Pac-Man* (1980), the linear aesthetic of *Mystery House* (1980), the atmosphere of *Limbo* (2010) and the exploratory nature of *Journey* (2012).

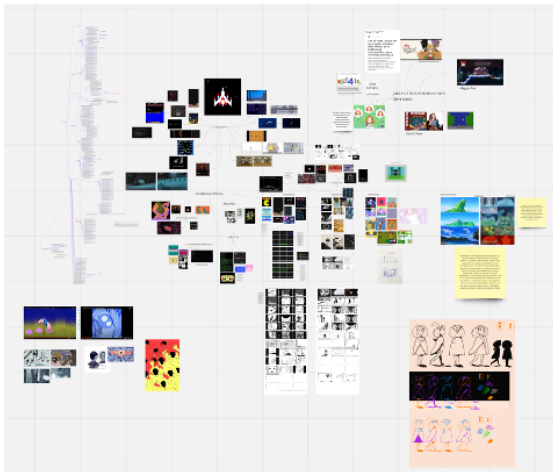


Figure 4. Data collected and shared on the Miro platform
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The way in which Roberta Williams, the creator of *Mystery House* (1980) and a pioneer in the creation of games with computer graphics, developed her first game was one of the inspirations for the conception of a narrative for the Mnema animated film. It starts with the creation of a game within the film itself. *Mystery House*'s tone and language provide a relaxed atmosphere that helps to achieve the film's purposes, which at the same time adopt an informative and motivational tone. So, this approach, which uses gaming language, aims to engage the target audience. This not only makes the animated documentary more accessible, but also creates a deeper connection with gaming enthusiasts. In this way, Mnema immerses itself in the universe of digital games and brings to light the perspective of women in this predominantly male industry. Using the structure of a game, our protagonist, a brave female character, embarks on a journey of challenges, where each obstacle represents the barriers faced by women in the world of games. In this adventure, the protagonist encounters creatures, labyrinths,

walls and mysterious doors that block her path. Each obstacle is an opportunity to learn and grow. On this journey, the voice of one of the women interviewed in the empirical phase of the Game Art and Gender Equity project will help the character overcome the barriers. They are, therefore, the voices of women who have experienced the difficulties of the digital games industry up close.

The process of creating an animated short film is complex and long, as it is a technique that requires many drawings or photographs (between 12 and 24 frames per second) in order to create the illusion of movement. However, creation begins, first of all, with writing the script and developing the storyboard, which will later be transformed into an animatic (a digital version of the storyboard, with set times for each keyframe). It is during this pre-production phase that the first sketches of the characters and sets are made, as well as final art tests that allow us to define with greater certainty the aesthetics and technique to be used in the film. In the case of Mnema, the production of the short film is limited by the project's funding and, as a result, by the reduced team, led by Inês Costa and Carolina Bonzinho. Initially, the short film was going to be developed through digital frame-by-frame animation, using the open-source software Krita, using digital tables. However, due to these limitations, the technique was changed to stop-motion, since the use of cut-outs and articulated characters facilitates the animation process and reduces production time. Now, the production of the film involves manually developing all the sets and characters using cardboard and acetate. These cutouts are then placed in a downshooter multiplane animation stand and photographed with a camera that is directly connected to the computer running the DragonFrame software. The animation is done manually, moving the cut-outs in millimetres and photographing them at 12 frames per second.

To prepare Mnema's script, we carried out an exhaustive analysis of the interviews conducted by Luciana Lima during the empirical phase of the research. Then, using a mind map, we organised these recordings around several key themes to help create the script. These themes include: i. an introduction to the subject; ii. the construction of the problems faced by women in the gaming industry (whether structural or cultural, as well as gender stereotypes); iii. the development of the situations, which range from embarrassing to personal experiences, the consequences and climax which cover fear, giving up, intense pressure and the toxic culture; iv. finally, the conclusion explores the opportunities, the need for representativeness and inclusion, and the recognition of digital games as a form of artistic expression. With the development of the idea and the time constraints of the film, which must be between eight and ten minutes long, we had to reduce the topics to be covered. We realised that it wouldn't be possible to cover them all, so we compiled the ideas to create a narrative line. As mentioned above, the central idea was to create a storyline that would

immerse the viewer in a game and, based on some games we mentioned earlier, we created three phases. In the first phase, we want to convey the feeling of exclusion and oppression that the character faces, without clearly explaining the nature of the problem. This phase has a metaphorical relationship with the theme of deconstruction. Here, the theme of harassment is addressed in a world with a black background and neon colours (see Figure 5), where the character feels watched and judged, questioning the world around her. She enters a labyrinth, where her mission begins and the obstacles she will have to overcome to advance to the next stage. Driven by fear and curiosity, she finds the strength to continue her journey and find out what is going on at that phase.

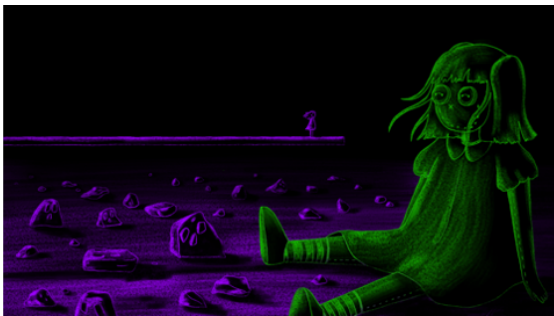


Figure 5. Art study of the animated film Mnema. ©Authors' Copyright.

In the second phase, we emphasise fear and uncertainty, visually represented by the transition from bright colour to black and white. The character feels uncertainty, and has the option of giving up but, gradually, regains control over her world, being able to move the elements on stage and create paths and portals.

The last phase focuses on collectivity and is characterised by more bright colours, conveying a sense of calm and security. The character realises that she has control over her environment and contributes to building that world. It is a moment of creation and flourishing, in which she explores the world she is creating. The idea of group/union comes to the fore, with a more colourful world and the character realising that she is involved in a process of transformation and creation together with other characters like her.

Mnema is a character who establishes a connection between the testimonies of reality and the fiction of digital games, going beyond the limits of the screen. The character was created with characteristics that seek to represent any girl and woman who can identify with this journey, without stereotypical traits of femininity. Like many of us, the protagonist travels through a challenging world and may seem fragile at first glance. However, she walks attentively, always questioning the world around her, proving herself capable of facing the obstacles that arise, despite the inevitable fear. Mnema, in line with her name, demonstrates that it is possible to overcome adversity using your greatest

weapons: curiosity and creativity. The name Mnema comes from Mnemosyne, the goddess of memory in Greek mythology. She is known for giving birth to the nine muses, deities who inspire the arts, ideas and creativity. The characteristics related to memory, artistic inspiration and creativity fit perfectly into the character's context. In addition, the name represents the entire creative process, from the conception of the idea to the artistic work needed to bring the story to life. Finally, Mnema also evokes the importance of memory, a fundamental factor in understanding the present and moving towards possible futures.

A teaser of the film was presented on March 8, 2024, on International Women's Day, in an event that had the presence of relevant stakeholders in the fields of gaming and gender equity. The finalised film will be presented at national and international film festivals.

Conclusion and Future Work

The history of digital games has largely been imagined as a patrilineal timeline. Women, when they do emerge as participants in the games industry, are usually seen as exceptions, or early examples of "diversity" in this industry [3, 19]. In this paper, we present some results of the arts-based research we are carrying out with a team of artists and researchers from different fields of knowledge. In this collaborative work, we are interested in the convergence of knowledge and practices that can address the different layers of power that exclude women from the digital games sector. We also detail how our research team analysed different research sources (such as archival materials and interviews) to produce two animated audiovisual projects. We want to pay tribute to the women hidden in the history of video games in Portugal, encourage more women to enter this industry and inform both the female audience and the general public about the challenges faced in this field.

The entire collaborative artistic research process followed the logic of horizontality, inclusion and, above all, collectivity. In each of the audiovisual works presented here, the process of artistic creation was completely shared between all those involved. We are following the lead of Donna Haraway [20], who says that the tools we have are often historical, retold stories, versions that reverse and displace the hierarchical dualisms of naturalised identities. By retelling origin stories, cyborg authors subvert the central myths of Western culture. We have all been colonised by these original myths, with their longing for consummation in the apocalypse. Feminist cyborg stories have the task of recording communication and intelligence to subvert command and control.

Between 2024 and 2027, we want to continue the GAGE project, mainly because the results show that there are still many issues to be researched, namely the mapping of

female participation in events omitted from the “official history” of digital games and a practical approach that raises awareness among various stakeholders and other people involved in the gaming industry and culture in Portugal. Thus, we intend to map female participation in events related to the development of the Portuguese digital games industry over the years, including ephemeral events that were published in the digital game press, from the 80s until now. With this, we want to contribute to the historic recovery of female participation in this sector, which has been done with narratives that neglect the interest and active involvement of girls and women

We also intend to create a collaborative and interactive virtual platform that will encompass various materials produced within the scope of the project, including a booklet about the women who contributed to the development of the Portuguese digital games industry and the animations that were presented here.

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References

- [1] Melanie Swalwell, *Game History and the Local* (Book Series: Palgrave Games in Context. Palgrave Macmillan Cham, 2021), 5.
- [2] Cheryl Buckley, “Made in Patriarchy: Toward a Feminist Analysis of Women and Design,” *Design Issues*, Vol 3 (2), (1986): 3-14. <https://doi.org/10.2307/1511480>
- [3] Laine Nooney, “A Pedestal, a Table, a Love Letter: Archaeologies of Gender in Videogame History,” *Game Studies*, Vol. 13, Nº. 02, accessed December 29, 2013, <https://gamestudies.org/1302/articles/nooney>
- [4] Mona Bozdog, “Playing with Performance/Performing Play: Creating Hybrid Experiences at the Fringes of Video Games and Performance,” (Ph.D. Thesis., School of Design and Informatics, Division of Games and Arts, Albert University, 2019.)
- [5] Patrícia Gouveia and Luciana Lima, “Convergent Feminism, Gaming, Digital Transition, and Equity,” in *TechnoFeminism: Multi and Transdisciplinary Contemporary Views on Women in Technology*, ed. Renata Frade and Mario Vairinhos (Aveiro University: Coleção DigiMedia, Nº. 3 2023), 125
- [6] Patrícia Gouveia, “Uma Narrativa Possível Sobre os Jogos Criados em Portugal nos Últimos Anos,” *Aniki: Portuguese Journal of the Moving Image*, Vol. 01, Nº. 02, accessed November 30, 2014, <https://aim.org.pt/ojs/index.php/revista/article/view/69>
- [7] Patrícia Gouveia, “From Cyber Feminism to Techno Feminism, Net. Art, and the Spread of Digital Culture,” (paper based on a talk presented at the POR-POL NET, Contemporary Net Art Colloquium, Lisbon University, Arts and Humanities Faculty, June 2023).
- [8] Anne Balsamo, *Designing Culture: The Technological Imagination at Work*, (Durham: Duke University Press, 2011), 56.
- [9] Rosi Braidotti, “A Theoretical Framework for the Critical Posthumanities,” *Theory, Culture and Society*, Vol. 36 (6), (2018): 31-61, doi: 10.1177/0263276418771486
- [10] Amanda Cote, *Gaming Sexism, Gender and Identity in The Era of Casual Video Games*, (New York: NY University Press, 2020).
- [11] Patrícia Gouveia, Luciana Lima, Anna Unterholzner, and Diana Carvalho, “The Expanded World of Invisible Anna Unterholzner’s and Diana Carvalho’s Artworks,” (paper based on a talk presented at the 27 International Symposium on Electronic Art, Barcelona, Spain, June 2022). *ISEA 2022 Proceedings*, <http://doi.org/10.7238/ISEA2022.Proceedings>
- [12] Cristina Sá, Luciana Lima, and Patrícia Gouveia, “Arts and Gaming, Convergent Feminism and Speculative Futures,” in *Journal of Science and Technology of the Arts*, (forthcoming).
- [13] Virginia Braun and Victoria Clarke, *Thematic Analysis: A Practical Guide*, (London: SAGE Publications, 2022).
- [14] Nea Ehrlich, *Animating Truth: Documentary and Visual Culture in the 21st Century*, (Edinburgh University Press, 2021).
- [15] Inês Costa, “Memórias de Pau-Preto e Marfim,” (MSc. diss., Image Design, Fine Arts Faculty, Porto University, 2022.)
- [16] Lee McIntyre, *Post-Truth*, (MIT Press Essential Knowledge series, 2018).
- [17] Luciana Lima, Camila Pinto, and Patrícia Gouveia, “Genesis of a Gaming Culture: A Historical Analysis Based on The Computer Press in Portugal,” (paper based on a talk presented at the DiGRA International Conference, Kraków, Poland, June 2022). *DiGRA 2022 Proceedings*, http://www.digra.org/wp-content/uploads/digital-library/DiGRA_2022_paper_1931.pdf
- [18] Luciana Lima, Camila Pinto, Terhi Marttila, and Patrícia Gouveia. “Home Computing and Digital Game Piracy in the 1980s in Portugal”, *Proceedings of the DiGRA International Conference*, 2023, http://digra.org:9998/DiGRA_2023_CR_7613.pdf
- [19] Luciana Lima, *Pensar o Género a Partir dos Jogos Digitais: Uma Análise Sobre as Assimetrias de Género na Indústria Portuguesa de Jogos Digitais* (Porto: BAND Editora, 2023).
- [20] Donna Haraway, A Cyborg Manifesto. In *Manifestly Haraway* (University of Minnesota Press. Original Work Published, 1985)