



video game art reader

version_1.1.2017



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Volume 1, Number 1

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VGA Reader Mission: The *VGA Reader* is a peer-reviewed journal for video game audiences and video game practitioners interested in the history, theory, and criticism of video games, explored through the lens of art history and visual culture. Its primary aim is to facilitate conversation and exploration of video game art, documenting and disseminating discourse about the far-reaching influence of video games on history, society, and culture.

Cover: *Savior*, "Isle of the Dead," 2017. Image courtesy Josuhe H. Pagliery and Johann H. Almenteros.

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Letter From the Editor: Shall We Play a Game?

Tiffany Funk

Editor-in-Chief, VGA Reader

Shall we play a game?

—*War Games*, 1980

You are standing in an open field west of a white house, with a boarded front door. There is a small mailbox here.

—*Zork*, 1979

I am pleased to present the inaugural issue of the *Video Game Art Reader* (VGAR), a peer-reviewed journal for video game audiences and video game practitioners interested in the history, theory, and criticism of video games, explored through the lens of art history and visual culture. Our aim is to break down the barriers restraining video game discourse. We are not limited to prescribed narrative choices like in a text-based adventure like *Zork*. We don't have to engage in the well-worn debates between narratology and ludology, hardware and software, indie or AAA, lest we be eaten by a *grue*. Our mission is not only to advocate for video games as art, but also engage in a meaningful art criticism of games.

We recognize that it's daunting investigating such an interdisciplinary subject as video games, and even more intimidating recognizing the scope of its global, diversified audiences. A survey of texts regarding video game discourse reveals a dizzying array of subjects and subjectivities, including computer science and information theory, psychology and sociology, post-colonialism and globalization, gender studies and queer theory, not to mention the array of

programming texts encouraging game development through both industry and grassroots methods.

The advantages of VGAR advocating for video games as art is that the art historical and visual culture disciplines are already fundamentally interdisciplinary, and come packed with a long history of analytical tools and techniques for analyzing such diverse cultural artifacts. Video games are both performative and material, and communicate meaning through a complex of visual, audio, and embodied methods. VGAR provides a platform for these insights and experiments, from all corners of the gaming globe.

That is why our inaugural issue celebrates video game culture as inclusive and global. Our opening article is an interview with the art director of the first independent Cuban video game, *Savior*. The following essays from art historians, literary theorists, game designers, artists, educators, museum curators, and programmers all engage with video games as an important part of the global art landscape. Each engages with what makes good game art with special attention to the transnational cadre of gamers that play them.

So, shall we play a game? ➔



Savior, 2017. Image courtesy Josuhe H. Pagliery and Johann H. Almenteros.

***Savior*: Cuba's First Independent Video Game**

Interviewer: Teresa Silva

Director of Exhibitions & Residencies at the Chicago Artists Coalition

Interviewee: Josuhe H. Pagliery

Director, art designer, and screenwriter of Savior

Abstract

Josuhe H. Pagliery is an artist and game developer based in Havana, Cuba. He is one half of the co-creators behind the new and critically-acclaimed video game *Savior*, along with partner Johann H. Almenteros. In this interview, Pagliery discusses the background and influences of *Savior*, as well as his aesthetic approach and efforts to collect resources to make the project a reality. Answers for this interview were provided through an email exchange with Teresa Silva.

TS: First, I want to thank you, Josuhe, for giving me the chance to talk with you about your video game, *Savior*. VGA Gallery and its brand-new VGA Reader feel fortunate to feature your project to a global audience.

I want to start off by mentioning that recent media coverage in the United States for *Savior* has been very positive, though highly focused on certain aspects of the game. Are there more important themes or concepts that are part of the game, which we, the international audience, are missing? Also, what is the intention behind the title, *Savior*?

JHP: *Savior* is a 2D platformer heavily inspired by 16-bit video games. The history comes from the idea of a “game inside a game,” and begins when the main character, Little God, discovers that his whole world is nothing more than a collapsing video game. To reinforce our breaking of the fourth wall, our game starts in the most archetypical way possible: a hero trying to save his world after the mysterious departure of his creator, the Great God. But this sense of familiarity rapidly disappears as you begin to see the true nature of *Savior*, a game that uses its narrative and gameplay to deconstruct the nature of a video game.

The game is rooted in Judeo-Christian mythology, based on the theological principle that God is equivalent to reality. I translated this logic to a video game: if God is equal to reality, then a video game, which is its own self-sufficient reality, could be a literal representation of what God metaphorically is; from this central premise, the tension emerges between reality and fiction, the player and the game. From this perspective, the search for the Great God could be seen as the desperate need of the protagonist to repair the

fiction of the video game while on a self-destructive path toward the annihilation of this artificial reality.

TS: Some younger or general audiences may not be familiar with significant moments in recent Cuban history. Specifically, I am thinking of the “Special Period” that occurred in the 1990s. It forced a new phase of the Cuban revolutionary process. Cuba struggled with the loss of support from the Soviet Union when it dissolved. There was a mass exodus of Cubans from the island to mostly the United States. Is *Savior* a reaction to that era—or the very recent opening up of political relations with the United States—that international audiences should know about? How have these phases affected your relationship to gaming and game development?

JHP: Of course, a clear parallel exists between *Savior* and the socio-political changes currently taking place in Cuba, and, with that in mind, we’re trying to create a sort of generational document to archive this unique moment in the history of our country. If we manage to achieve that with *Savior*, then the line between game and reality will be erased completely.

TS: As I understand it, your partner Johann H. Armenteros is a computer scientist and the programmer of *Savior*, while you created the concept, art, and design. When did you meet Johann and decide to collaborate on this project? What were the steps you took to procure the resources to make it a reality?

JHP: The development of *Savior* started almost two years ago. I always wanted to make a video game, but until a few years ago we didn’t have the technology to try something like this in Cuba. After I started creating the designs and writing the story, I began to look for a programmer and

quickly found Johann, a programmer interested in video games as well. In the beginning, we nearly made the same mistakes that many other startup developers make: a game more complex than what we could produce, constant changes in the story and the gameplay, issues developing a game from scratch...the list goes on. But I always felt, even in the most challenging moments, that we had something special on our hands, and we persevered.

The challenge in the first year was to find a way to finance the game. We started out using the money I'd saved from my art, and later Johann's savings as a web programmer. Our funds quickly dwindled, but we met someone from a US nonprofit that helped us launch one of the first Cuban crowdfunding campaigns on Indiegogo. To our surprise, we funded our \$10k goal in just 6 days. With this campaign came a lot of press—Polygon, Kotaku, PC Gamer, Game Spot—publications that I wouldn't have imagined we could reach in my wildest dreams! Thanks to the international press, while being completely ignored in Cuba, we gained some kind of weird notoriety in the world of video games. Honestly, we got more attention for being Cuban guys who work in isolation without internet than for the game itself; but, thanks to that, our project, *Savior*, is still alive today.

TS: What has the reaction to *Savior* been inside Cuba—both general audiences and the gaming and artist communities?

JHP: Sadly, in Cuba our game is almost non-existent. It's funny, though, that there are more than 50 articles, from all over the world, about *Savior*: articles from the US, Australia, Turkey, China and Russia. However, we still don't have one single article from the official press in our own country. In Cuba, everything has political mean-

ing, and the fact that we are completely independent doesn't exactly fit in with a centralized vision of the Cuban government. So only small and independents publications have spread the word, and the most impressive is that almost daily we receive emails of support. I deeply believe that if our game succeeds that it will create a whole new breed of Cuban indie developers, but we are still far from that point. In the meanwhile, we are just two isolated weirdos with time to spend on something very, very risky and even unimportant, as some think we are making a "Mario kind of game." It's a pessimistic view imposed on us from people we know, as well as those we know from the art world. They say, "you should draw or paint to make real money," and that's the "friendliest" advice I've heard so far.

TS: I understand that you are trained as an artist—you went to art school in Cuba. You also participated in the Havana Biennial. This is significant because the Havana Biennial—in a relatively short amount of time and resources—became successful in bringing Latin American and Caribbean artists and their work to international contemporary art circles. Often, these are artists whose work falls outside the scope of institutions. What did it mean for you to be included in the Havana Biennial? What was your experience? Did it change your relationship to making art or game development?

JHP: That's the biggest achievement a Cuban artist could have inside the country. So, for me, both personally and professionally, it meant a lot. The video game art I showed in the Biennial (which was programmed by Johann) was a non-game called *Destroyer* structured from the Schrodinger cat paradox.



Screenshot from *Destroyer*, 2015. Image courtesy Josuhe H. Pagliery and Johann H. Almenteros.

That work was a real turning point for me, because it helped me to understand (and this is a very subjective view) that even though I feel a lot of respect for this kind of more art-oriented video game, I felt like I was betraying something. In my humble opinion, video games don't need to be associated with other historically established forms of art to gain respect or authenticity from people, including intellectuals. Video games have a very unique form of narrative, structure and visuals, by any means inferior to other artistic or intellectual forms of expression, so I deeply think we don't need to emulate, out of self-pity, another art discipline to gain "high art" status. Of course, that doesn't mean that we should stupidly dismiss all the invaluable experiences we gain from the humanities: philosophy, literature, film, visual arts, science, poetry, etc. In any case, we should include this knowledge into the video game experience and not let it masquerade as something it's not.

TS: What artists, either working in contemporary art, video games, or illustration, do you think you are most in-conversation with?

JHP: *Savior* is structured like a conceptual work of art. The deconstructive narrative is reflected visually in the classic 2D aesthetic; it accentuates the artificiality of the "reality" that is represented in the game.

Many of the visual influences come from symbolist painters like Bocklin or Millet, with touches of Art Nouveau and Art Deco styles in the game's backdrops. I use heavy, dark outlines to emulate both the religious aesthetics of stained glass windows and the classic style of 90's games from Japan, specifically CAPCOM and Konami games, as well as visual artists such as Akiman, Amano, McCarthy, Barney. Also, writers such as Carlyle, Kafka, Capeck, or Cervantes have been big influences on my work.

Strictly talking about video games, I feel very influenced by games such as *Earthworm Jim*,

Castlevania 4, *The Legend of Zelda: Link's Awakening*, *MDK*, *Final Fantasy 6*, the work of Fumido Ueda, and more recently the *Dark Souls* series, and particularly, for *Savior*, *The Legend of Mystical Ninja* or *Ganbare Goemon* in Japan (the 16-bit versions). I always remember that in the third level you could play Gradius inside a fair tent, a game inside a game. That move simply blew my mind!

TS: I want to change gears and talk about some of the aesthetic choices you've made in *Savior* and what they mean to the cultural content of the game. One thing that is striking about the game is that it goes from very lush visuals to harsh, glitched-out moments that can have a really visceral effect on players. What is the intended effect of contrasting a highly-illustrated world with exposed code and glitch aesthetics?

JHP: First I bring the player into this very conventional 2D platform with this never-ending story of the typical hero trying to save the world, and all of a sudden everything starts to fall apart, not only visually speaking but also from

the gameplay narrative. The aesthetic needs to be impressive, very smooth and polished in order for you to really experience the radicalism of the destruction of everything around you later. It's a huge contrast between the world that you know and the destruction that later ensues. I don't want to give away any spoilers, but I will say that the game at the very end will really take you out of your comfort zone.

TS: Why did you choose to resolve *Savior* as a puzzle platformer style game? Or does it not fit the normal conventions of platformers, and if so, why?

JHP: *Savior* is not a puzzle game. To be honest, I don't like too many puzzles games. With *Savior*, I tried to make a "weird" platformer, but its gameplay and aesthetics come from the 2D platformer genre, and still—like in the "old good days"—you will need some skills to get through the whole game.

TS: What's next on the horizon for *Savior* and for you in terms of new creative projects in gaming or art?

Savior, "Isle of the Dead," 2017. Image courtesy Josuhe H. Pagliery and Johann H. Almenteros.



JHP: Next for Johann and I is the launch of the demo at VGA Gallery in Chicago. We come from a place where it is safer and smarter not to look too deep into the future. Once we accomplish a milestone, we will set a new one for ourselves. The only thing is that we don't want to stop. Luckily for us right now, it's been easy to keep moving forward and not look back.

TS: Thank you very much for your time and generosity in sharing your thoughts, Josuhe.

JHP: Thanks again for this interview. ➔

Bios

Josuhe H. Pagliery (b. 1981, Havana, Cuba) graduated in Painting from the National Academy of Fine Arts San Alejandro and later from the University of Arts (ISA) with a degree in Visual Arts. He also has been a teacher at ISA and gained experience as an animator in the Cuban Institute of Film, Radio and Television (ICAIC). For many years, he did performance art with the group *La Teoría Dorada de Popeye*. His artwork has been exhibited in Cuba and internationally in Germany, US, UK, Spain, Canada, among other places. More recently, Pagliery was officially invited to the 12th Havana Art Biennial and is currently working with the programmer Johann Hernández Armenteros to create the first Cuban independent videogame *Savior*.

Teresa Silva is a writer, curator, and the Director of Exhibitions & Residencies at the Chicago Artists Coalition. She is a member of the artist-run spaces VGA Gallery (Chicago), Tiger Strikes Asteroid (Chicago), and Exgirlfriend (Berlin).

Game Levels as Works of Art, Architecture, and Design

Christopher W. Totten

Game Artist in Residence, American University

Abstract

Games have become a novel medium for appreciation of the arts. Many herald their interactivity as a brave new art form, but game makers and fans know that games are more than just their mechanics. This article examines several points of view on games as art, not discussing whether they are, but rather how they are. It also digs deeper to explore how elements of games—artwork, sound, music, and so forth—can themselves be artworks. The article then uses the potential curation of such game elements to explore how game levels—the spaces that players explore as they play—may be considered artistic works. It does so by finding common ground between game levels and works of architecture and establishes several frameworks for understanding designed space: affect, storytelling, and symbolism, occurring in both games and architecture. Lastly, it describes how such game worlds may be curated and included in exhibitions, inviting new comparisons between games and other art forms to further expand our understanding of interactive media.

INTRODUCTION

In the past several years, conversations surrounding games have shifted from whether games are art, to *how they are* and *are not* art.¹ Game designer and curator John Sharp divides games with artistic intentions into the categories “Game Art,” “Artgames,” and “Artists’ Games,” based on formal aesthetics: Game Art subverts the goals of games through borrowed subject matter, tools, and processes, Artgames engage subjects—poetry, painting, literature, or film—games often do not, and Artists’ Games provide a synthesis of the previous two goals respectively.² Critics like writer Cara Ellison focus on the human element of games as art: personal views of game creators, their approaches, and contextualizing their communities as “scenes.”³ The question of whether games are art is gloriously fragged like so many *Doom* opponents by game designer Anna Anthropy, whose influential work champions games as a medium for expressing personal experiences and sounds a rallying cry for new creators.⁴ Indeed, museums around the globe exhibit games with increasing frequency, with institutions such as the Smithsonian American Art Museum and the Museum of Modern Art acquiring games for their permanent collections.⁵

Philosopher Brock Rough takes a different view regarding games and their classification as “art,” arguing that games themselves are not art when they act as systems players can master and win. However, he also argues that artistic works are defined by their relevant features, the elements contributing to a work’s appreciation and understanding.⁶ Fan communities show that a game’s assets—the visual art, animations,

music, audio effects, and designed worlds—may be considered independently, providing inspiration for fan art or musical covers. Game studios within the industry promote games via exhibitions of a game’s concept art—the artwork made to determine the visual identity of a game—and concerts of incidental game music performed by live orchestras.

These views differ from those of Sharp and game industry historians like Tristan Donovan, who discuss the aesthetics of games based on *game design* factors such as interactivity, mechanics, rewards, and other rule-based elements.⁷ Regarding curation, the notion of games as collected works opens the possibility of showcasing game-related media such as concept art, two-dimensional game sprites, three-dimensional models, game music, and even fan art inspired by games. This mindset is already pervasive in fan-focused events like the annual Music and Gaming Festival (MAGFest), an event showcasing fan artists and bands covering popular game music, or galleries like iam8bit that collect and showcase fan art.

Curatorial practices may also help game designers better classify areas for which they struggle to find descriptive language, such as *level design*, defined here as the creation of environments and contexts where players interact with a game.⁸ Industry veteran Rudolf Kremers declares level design to be its own field related to, but separate from, game design.⁹ Other authors go further, defining critical terms for the design of game levels and the creation of experiences for players through visual assets and architectural means.¹⁰ This article discusses the elements that define

level design as its own creative field within the game medium and proposes methods for exhibiting game worlds as works of art and design.

HISTORIC PRECEDENTS FOR GAME WORLDS AS WORKS OF ART

As a part of game design, level design has been lauded as “the most important job”¹¹ on a development team and “where the rubber hits the road”¹² because levels are the primary spaces in which players interact with all the game’s mechanics. Kremers calls levels “applied game design” for this reason, but this description fails to distinguish levels from the games in which they live.¹³ Looking to Rough’s argument—that elements composing games are themselves individual works—one can find comparisons in art and design influencing game asset creation. As a field focused on the creation of interactive digital spaces, parallels may be found between level design and another discipline focused on the design of inhabitable spaces: architecture.

In the mainstream game industry, many environment artists and designers acknowledge the influence real-world architecture has on their own work. Many utilize the sculptural elements of famous buildings or styles to create epic backgrounds for their games, setting them in a specific period.¹⁴ Rarer are the designers utilizing spatial and organizational principles of architecture in their work, using methods for ordering spaces and directing occupants’ experiences within.¹⁵ These principles help architects create powerful and evocative spatial experiences, and it is common practice in architecture and other design fields to analyze the work of previous designers as a basis for their own decision-making.¹⁶ Level designers who have learned these

techniques have found powerful tools for both creation and analysis, generating works deserving critical consideration outside of their encompassing games.¹⁷

For both purposes—level design and the analysis of level design—histories of past works are invaluable resources for defining aesthetics and critical language. Level design, seen popularly as a part of game design rather than its own field, suffers from a lack of this sort of recording in ways that games themselves do not. Many games have what may be deemed “good level design,” but with few exceptions, individual levels are not curated to be precedents for future designers.¹⁸ In this way, the connections between architecture and level design become increasingly important.

ARCHITECTURE AS FINE ART AND DESIGN

Though there is some dissent over whether architecture is more art to be enjoyed for its own sake or as design meant for public utility, there is little debate as to its significance in the fine arts.¹⁹ Richard Meier, a recipient of the prestigious Pritzker Architecture Prize, considers architecture a superior art form for its relationship with the people inhabiting it.²⁰ Considered as design, architecture has the potential to make aesthetic contributions transcending utilitarian purposes, just as the Constructivist propaganda posters of El Lissitzky contributed to the canon of Suprematist “art only for art’s sake” works. Sociologist Richard Sennett puts this in more philosophical terms, stating that the built environment facilitates a unity of humans’ inner “subjective experience” with their “outer physical lives.”²¹ Of ancient cultures, he argues that their architecture was built to represent not only

their practical needs, but also spiritual and political ideals, a claim supported by evidence found in ancient tombs and monuments.

Like other forms of art and design, architecture has found its way into gallery exhibitions and curated collections. While many museums are themselves important architectural works, it is difficult to allow entire buildings to travel with an exhibition or store them away for preservation. Instead, institutions like the National Building Museum in Washington, DC and the Museum of Modern Art in New York exhibit models, drawings, and photographs from built projects, as well as furniture and other architect-designed objects.²² Institutions such as the National Holocaust Museum are themselves immersive environments meant to evoke emotions, stage encounters with the space, and provide resources for user-led storytelling through their arrangements of space and use of vernacular architecture.²³ In many ways, such museums blur the line between real-world space and gamespace in terms of the ways in which their construction creates designed experiences for users.

ARCHITECTURE AS LEVEL DESIGN

Finding comparisons between level design and architecture can add both legitimacy to level design as a cultural form and provide much-needed precedents from which a critical discourse of level design may be distilled. Many game designers express skepticism that level design can have a unifying body of theory due to the spatial gameplay requirements of different game genres, but how humans interact with space can influence how we understand the diversity of game world design.²⁴ While it is outside the scope of this article to provide a full history of

architectural pieces that might provide a critical language for level design, spatial elements common in architectural works throughout history may help establish the discourse. The elements covered here will be architecture as affect, storytelling, and symbolism.

The ancient Roman architect Vitruvius considered *venustas*, or delight, to be among the most vital elements of architecture.²⁵ More recently, architect Grant Hildebrand outlined spatial elements that create pleasurable and comforting feelings in occupants, such as covered “refuge” spaces, protection from heights, and so forth.²⁶ Alternatively, game designers Salen and Zimmerman argued in *Rules of Play* that much of the pleasure of games comes from overcoming dangerous situations, experiences designed through the creation and placement of enemies and elevated environments providing no protection.²⁷ In these ways, delight can be created via a blending of functional forms and “subjective experience,” as described by Sennett.²⁸ For example, architect Philip Webb cast ordered form aside in building his Arts and Crafts architectural icon Red House, designing the structure for the lifestyle of the building’s occupant, William Morris. Decades later, Louis Sullivan, the creator of the modern skyscraper, unknowingly foreshadowed Kremers’ game mechanics definition of level design in a now-famous quotation regarding how the shape of a design should be derived from its use: “Form ever follows function.” Franco-Swiss architect Le Corbusier would later call the house a “machine for living in,” to which one level designer, alluding to Salen and Zimmerman’s “pleasure from danger” concept, added “living, dying, and creating tension by exploiting everything in-between.”²⁹

Architecture and level design may have different methods for achieving pleasure and delight, but both do so with spatial compositions meant to affect occupants. These are elements of what I am calling “architecture as affect,” where space design is a response to experiential goals.

Story, or the construction of functional spaces created for religious or cultural significance, relates to the third part of the taxonomy, “architecture as symbolism.” Following from Hildebrand’s assertion regarding architectural pleasure, noteworthy historic architecture creates experiences we might associate with modern game environments. Throughout history, architecture has been used for purposes of storytelling, symbolism, representation, calibrating to the habits of owners or building astonishment in inhabitants.³⁰ In this way, built space takes on a narrative purpose of the kind found in story-heavy games, becoming “architecture as storytelling.” For example, Gothic churches taught an illiterate populace Biblical stories through ornament and images in stained glass. Japanese gardens mimic natural landscapes in miniature via meticulously-arranged features, such as carefully-placed stones representing mountains, taking visitors on philosophical and aesthetic journeys meant to cleanse them of the outside world.³¹ Mesopotamians desired much of the same, the building design of their temples and ziggurats symbolically elevating inhabitants to become nearer to their gods and characterize the mountains from which city dwellers migrated. Ancient structures in what is now the United Kingdom were constructed with specific sightlines and lighting conditions in mind; letting light into a tomb at a specific time of day gave occupants the best view of astrological phenomena. The self-same Gothic

churches embedding narrative information in relief sculpture and stained glass also utilized linear elements to draw visitors’ eyes upward, towards the heavens. Stained glass created an ethereal lighting effect known as *lux nova*, meant to evoke the kingdom of Heaven.

Given that all game levels, even those representing natural environments, are designed spaces, all methods found in architectural works can and have been used in digital game worlds. Game assets are themselves digital representations of real objects, and with the rise of expressive games, they take on more symbolic significance; in works like Heart Machine’s *Hyper Light Drifter* (2016), certain assets evoke part of the creator’s life.³² In level design, assets are arranged and manipulated to create spaces providing narrative context to the actions of players. In a more visceral way, stealth games like Arkane Studios’ *Dishonored* (2012) or IO Interactive’s *Hitman: Absolution* (2012) utilize Hildebrand’s notion of safe “refuges” and unsafe “prospect” spaces where players are exposed to enemies to create tension.³³

LEVEL DESIGN: CONTRIBUTIONS AND CURATION

We are just beginning to see proposals of how players may engage with the assets comprising games—art assets, musical compositions, audio design, levels, and so forth—as self-contained artworks.³⁴ Where critics previously focused on the expressive power of games’ interactivity, we now see them take larger interest in things like the evolution of visual styles in games and other aesthetically-driven aspects of game production.³⁵ In the case of level design, we have seen that game environments have much in common with the aesthetic and experiential factors of

architecture. While previous sections have outlined their similarities, it is also worth exploring the ways in which *differences* between architecture and game levels reveal levels as potentially engaging exhibition objects.

The difficulty of exhibiting architecture is both in its physical size and experiential nature; viewers need to inhabit works to truly understand the experiences they create. In many ways, a similar challenge is faced by games in the museum environment, as galleries such as the Smithsonian American Art Museum struggle with whether to let visitors play their games.³⁶ Exhibitions of game levels may begin with the way that architecture has answered such questions. As the Museum of Modern Art and National Building Museum display the models and construction documents for architecture, galleries can display game levels similarly: visitors may gain insight into the game-making process and learn how levels are made from gameplay-focused prototypes made of gray boxes to compelling interactive worlds filled with interesting artwork.³⁷

Art of Video Games curator Chris Melissinos highlighted another aspect of game worlds that differentiate them from real-world architecture when he said games were “literally an alternate universe behind glass,” describing game worlds existing as data on computers.³⁸ For displaying game worlds, this has important implications. First, it means that unlike architecture, game worlds can be easily collected and transported. While design documents can be a useful supplement to the works themselves, game worlds benefit from being interacted with and inhabited by players. Game levels in museum exhibits may be shown and interacted with freely via either interactive or video formats. Game historian Daniel Greenberg also suggests that modi-

fied versions of games may also aid the effort of curating games, allowing game level portions to be replayed multiple times in quick succession to highlight specific content.³⁹ As many popular games are the work of studios still in operation, these types of modifications could be developed in concert with the game creators themselves.

Likewise, game worlds exist in spaces not governed by real-world considerations like physics or time. Game industry veteran Ernest Adams discusses how game worlds such as the version of Chernobyl seen in *S.T.A.L.K.E.R.: Shadow of Chernobyl* (GSC Game World, 2007) might be an important work in its own right by preserving a physically inaccessible location of historical significance.⁴⁰ The work of Atelier Ten Architects in *Second Life* (Linden Lab, 2003) features structures built without the restrictions of gravity and other natural forces. Showcasing these interactive worlds emphasizes ways these works are impossible outside of games contexts, providing new contributions to art and design not otherwise possible. ➔

Bio

Christopher Totten is a game design professor and the founder of independent developer Pie for Breakfast Studios. He is also the founder of the Smithsonian American Art Museum Indie Arcade and an advocate for bringing games to museums and cultural institutions. Totten is an active writer in the game industry, author of two books: *Game Character Creation in Blender and Unity* (Wiley, 2012) and *An Architectural Approach to Level Design* (CRC, 2014) and editor of *Level Design: Processes and Experiences* (CRC, 2016). He has a Masters Degree in Architecture from The Catholic University of America in Washington, DC.

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Thekla, Inc., *The Witness (Untitled 1)*, 2016. Image courtesy Thekla, Inc.

Toward a Ludic Literacy: Procedure, Imageword, and Metaphor in Digital Games

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Abstract

With the rise in popularity of video games and gamification, it is more necessary than ever to establish how play creates meaning and shapes persuasive and expressive thought. This paper utilizes games studies theory and visual rhetoric to develop a ludic literacy which allows for a greater understanding of how play engages limits and conditions to create a specific message. Through a close reading of *The Witness* (Thekla, Inc., 2016), I show how ludic literacy enables an understanding of how games differ from traditional media forms in their creation and use of *imagewords* breaking down the boundaries between words and images through symbolization.

There are no words in the world of *The Witness*. Designer Jonathan Blow and studio Thekla, Inc.'s 2016 puzzle and exploration video game exists in a world without traditional, printed texts. From the starting tutorial to the final credits, there is not a single written word. Nonetheless, the game is rich with language. *The Witness* creates a world and a semiotic system that the player must learn through play. However, the game's stark lack of traditional language systems and its reliance on perspective and visuals creates problems for both players and scholars attempting to navigate and distill meaning from the game. Interpretive models relying on narratology, for instance, fail to accurately sum up the experience playing a game devoid of story and character, and yet, methodological approaches examining the procedures and formal systems of the game do not adequately account for the expression and persuasive influence the sights and (lack of) sounds the game provides. For narratologists, issues of choice and agency become cumbersome and cannot account for the difference in experience between a player using a warp whistle as opposed to a player who grinds out the content. For ludologists, the formal systems of a game cannot account for how perception would shift if Princess Peach were to rescue Mario. How, then, is one to derive meaning from a video game like *The Witness*? This question is important to more than just players of *The Witness*: it is central to how players experience games, how games create meaning, and how games move beyond their forms and bleed into our experiences and identities.

If we are truly living in "the ludic century," as posited by games studies scholar Eric Zimmerman, then uncovering how players construct

meaning in games like *The Witness* gives the careful reader a glimpse of the importance of play to this process.¹ With the meteoric rise of video games in education and the gamification of everything from the workplace to environmental protection, it is more important than ever to understand the myriad ways in which games produce meaning and promote connectivity. Zimmerman suggests we focus our energy and resources on promoting games literacy, consisting of systems thinking, play, and design.² Because systems thinking identifies relationships between parts and the whole, its applicability to games remains too broad; while a games literacy encourages thinking about the ways systems work at both the virtual level (such as in coding) and analog level (such as political policy), it elides what makes games special: their ability to create fun and simulate agency. Similarly, focusing on the way games encourage fun or promote innovative thought fails to explore how video games represent an embodied way of being in the world, a powerful way of simulating our lived experiences. One needs only to get a group of friends in the same room with four controllers and a copy of *Mario Kart 8* (Nintendo, 2014) to see how this is true: some players move their bodies along with their controllers to stay on the track; others will sweat with focus and determination. Still others will grit their teeth and unblinkingly stare at the screen. How, then, to account for all this manic magic?

Scholars have attempted to define the term ludic literacy in a variety of gaming contexts: most notable are James J. Bono and Ben McCorkle's use of ludic literacy to discuss how players talk about games, and Zagal's term ludo literacy, used to explain how learning takes place

in digital games.³ However, what is needed is not a deeper understanding of the language of games—a games literacy, as put forth by Zimmerman—but rather a deeper understanding of the ways in which play can be both expressive and persuasive. Ludic literacy operates through the corporeal, cultural, spatial, and temporal dimensions; it can illuminate how play works with our world and through our bodies to create meaning, engender experience through performance, and cultivate memory.

Games studies scholar Brendan Keogh describes the necessary properties for a ludo-critical methodology to analyze how video games construct meaning and move people. He claims video games are best understood when the critic or player considers “the player’s proprioceptive awareness of the both the video game’s material form (controllers, screens, rumble motors, etc.), the audiovisual signs (characters, a projected world, music, menus, etc.), and the various interrelations between all three. To analyse a video game text is to analyse this entire textual network.”⁴ This is a steep task: the scholar must analyze the “cybernetic ebb and flow between the player’s body, the video game hardware, and audiovisual and haptic representation,” both in the virtual and actual worlds.⁵ This would demand superhuman levels of cognition by an expert trained deeply and yet broadly in art, literature, psychology, emotion, computer engineering, user-centered design, dance, and more. If the critic focused on the essence of play instead of the form of games, it may offer more accessible and successful alternatives. A ludic literacy constitutes a profound understanding of the way play uses signs, responses, and emotions to construct modes of discourse and meaning-making.

Cultivating a ludic literacy necessitates not only an embodied approach to criticism, but also an understanding of the way literacies are embodied. Traditionally, scholars have focused on the many different elements that combine to create the ecology of the cybernetic system, such as the system described by Keogh. Instead, emphasis should be placed on the combination of images and words—the *imageword*—and the logics employed by these two modes in cooperation with the logics of play. Literary theorist Kristie S. Fleckenstein’s formulation of the imageword breaks down the binary between the symbolic nature of words and the representational nature of images.⁶ She argues that an awareness of the contextual surroundings of a text allows us to simultaneously conceptualize objects while distancing ourselves from them. For example, we can understand a picture of a redwood is not all trees; likewise, we also implicitly understand a text describing a redwood, even in meticulous detail, can never fully encompass the scope and detail of an existing redwood. Imagewords refer to the underlying meaning of a symbol—be it graphic or textual—to contextualize and further understand its implications both connotatively and denotatively.⁷

Understanding the imageword as an embodied experience demands an investigation of the underlying logic driving play. Scholar Anne Frances Wysocki advocates an embodied approach to media and game studies, in which “our bodies—our primary media” allow us to experience the world.⁸ She uses the idea of embodiment to highlight the various ways our bodies allow us to relate to the world in a contextual way, one continually grounded in the realities of place, time, physiology, and culture.⁹ An under-

standing of the ways in which much of the media we experience is filtered through the body sheds light on the reasons why certain aspects of games, such as their design and systems, are emphasized, while play, the embodied part of games, is ignored. The lack of attention paid to this sense of embodiment has contributed to a simplification of seeing, one that assumes “everyone sees in the same ways and so will be affected in the same ways by what they see, everywhere and at all times, ahistorically, aculturally, apolitically.”¹⁰

The question remains: what is gained by forcing considerations of embodiment onto video games and specifically onto play? In their book *Rules of Play*, Katie Salen and Eric Zimmerman note that imposing rules does not suffocate play, but rather makes play possible in the first place; play then becomes a way of navigating a set of rules.¹¹ In *Literary Gaming*, media scholar Astrid Ensslin traces the critical study of play through Kant, Schiller, Heidegger, and Wittgenstein to arrive at a definition of play focused on the way in which spaces are marked off, allowing for interaction and creation of new forms of meaning and expression. These new forms are created through the ergodic: non-trivial, but also non-utilitarian movement.¹²

Movement is a central aspect of play, whether it is the swing of a foot to kick a soccer ball or the tap of a button to make Mario jump; however, movement, or use of the body as a medium, does not immediately make play embodied. Play becomes embodied because, in addition to the requirements of physical movement, it is always contextual. It is “enmeshed” in the culture, time, space, and place in which it is created. In his book *Play Matters*, Miguel Sicart writes, “play

too is a contextual appropriation of a situation with the purpose of creating new values, expressions, or knowledge.”¹³ In addition to the need for rules to be established in either a social or formal manner, play can take over spaces—virtual, actual, and social—and depends on those spaces to create meaning. An example of the way play is contextual can be found in the simple game children play where the floor is lava: the players of the game depend on the social creation of the expectation that no one will want to touch the lava. They use their bodies to jump and maneuver around the “lava” and depend on their senses as feedback to see if they have touched the floor. The penalties for touching the lava are dependent on the players and their expectations. Some children may writhe in pretend pain when touching the lava while others may be deemed “out” and barred from playing for a short time. Whatever the specifics of the game may be, the play is established in an embodied way relying on the physical movements of their body in cooperation with the social, physical, and cultural context in which the game is being played. If we view play in this matter, we can begin to see the ways in which the senses construct a system that can be used to understand play.

I argue that a logic based on recursive and conditional semantics, coupled with an understanding of imageword and embodied play, can be used to cultivate a ludic literacy. Fleckenstein argues that image operates under the “is logic” and seeks to establish connection between groups of objects and experiences; language operates under the “as if logic” of metaphor and allows for articulation between groups of objects and experiences.¹⁴ If image operates under the “is logic” and language operates under the “as

if logic,” play operates under the “if-then-else logic” of McCarthy Formalism. In computer science and recursion theory, John McCarthy’s explanation of “formalism” allows for computation by expressing complex operations as simple true/false statements and then positions them in a flow chart where the answer to the previous question (for example, “if [answer] = true”) leads to a new set of processes (“then perform x function”).¹⁵ This logic can be interpreted to operate through temporality and embodied experience. “If-then-else logic” allows for the passage of time in a way static image does not. Scott McCloud illustrates this effect in his book *Understanding Comics*, explaining how time is perceived to pass in static images.¹⁶ McCloud uses the simple example of a clock shown in four consecutive panels with the minute hand moving in five minute increments across each panel. The reader easily intuites the sensation of passing time. If in one of the panels the minute hand moved more than five minutes, the reader would feel something was off. If we close our eyes and focus on an image, we can focus not only on the visual element but also the emotive aspects, the sensory aspects that are central to what Fleckenstein means when she evokes the word image.

Ludic logic allows for the inclusion of time in a way image does not. It is not only an understanding of the influence of time, but also a way of moving through time. Following “if-then-else logic” allows for subjective movement through time by constantly referring to previous experiences to allow for new possibilities. In Fleckenstein’s formulation of the imageword, she focuses on its dual aspects of creation and destruction, the ability for image to absolve boundary and language to create division. Movement across

the boundaries and various embodied literacies of imageword happens through the logic of play embedded in “if-then-else logic.” However, as previously mentioned by Salen and Zimmerman, play does not simply arise from conditional “if-then-else logic,” but also from the introduction of rules.¹⁷ For a game of soccer to be played, the limit of every player except the goalie being unable to use her hands needs to be established. Once the limits are in place (goals, side lines, no hands, etc.), then the recursive logic of “if-then-else” can be applied to induce play.

This understanding of ludic logic combining a condition with a limit echoes other game studies scholars’ approaches to play. In “The Rhetoric of Video Games,” Ian Bogost describes the prevalence of procedurality in the modern world, where constraints create “possibility spaces, which can be explored through play.”¹⁸ This conception of modernity closely resembles Zimmerman’s systems-theory definition of the “ludic century.”¹⁹ In his text *Persuasive Games: The Expressive Power of Videogames*, Bogost emphasizes the ubiquity of procedurality in society by relating a hypothetical interaction involving returning a non-functioning DVD player to a store without a receipt: a clerk follows procedures and denies the return, but after the customer complains, the clerk and supervisor invent new procedures to accept the DVD player return to maximize customer satisfaction.²⁰ In his most recent text *Play Anything*, Bogost positions limits as a source of pleasure, again combining with conditionals to inform ludic logic. Using the example of a stick—a recent inductee into the Toy Hall of Fame—he explains how the shapes, materials, and context of the piece of wood help create limits as to what it can be. In this way, imagination

shapes its use and meaning: a long stick can be a sword, a short stick becomes a knife, a flexible stick becomes a sort of spring, while a stick with a Y-shaped fork can become a slingshot.²¹

While recursive “if-then-else” logic and context applies to the procedural rhetoric of store returns and imaginative flexibility of stick play, it doesn’t offer insight into the embodied process of play making a game such as *Donkey Kong Country* (Rare, 1994) fun. The contact between a player and the limits of a system, when coupled with a conditional statement, are the basic elements of a ludic literacy: while ludic logic allows for the inclusion of limits, and the imageword remains grounded in the recursive “if-then-else” conditional, ludic literacy combines these logics to further explore ways in which play can be both expressive and persuasive. Furthermore, ludic literacy reveals how the embodied nature of play through the structure of games allows for persuasive and expressive potential.

This definition of ludic literacy contrasts with other attempts to formulate a literacy of games or play. Composition scholars Jamie Bono and Ben McCorkle have used the term ludic literacy to define how the subculture and affinity groups of gamers establish discourse communities to talk about games and about play.²² Their definition of ludic literacy focuses on a more colloquial definition of literacy, such as being able to talk competently about a subject. Similar to Zimmerman, José P. Zagal argues for a “ludoliteracy” grounded in the principles of understanding the semiotic system of games necessary to play, understand, and create games.²³ While ludoliteracy is productive and capable in its execution, it is still a literacy focused more on the medium and discourse of computer-based games than an actual

understanding of the expressive potential of embodied play. In his article “Exploitationware,” Bogost warns of the current gamification of society and the ways in which corporations exploit games to further their brand and develop more sophisticated methods of personal data collection. He warns that readers should not confuse the goals, leaderboards, and high scores with the magical, less obvious aspects of games that make them enjoyable.²⁴ I argue the magic Bogost refers to is play itself, and games are merely one way to facilitate play. An understanding of ludic literacy highlights what it is that makes play special. It is useful to think about the connection between play and games through an understanding of Zagal’s formulation of a games literacy, grounded in psycholinguistic researcher James Paul Gee’s definition of literacy, which necessitates a command or control of secondary uses of language.²⁵

One way to approach an understanding of ludic literacy and the importance of image-words to play is to think about the possibilities that could be present in the game. Play is the semiotic domain in which games operate. In other words, play is the language of games. An understanding of ludic literacy provides the same level of depth needed to understand how words comprise the material existence of novels, enmeshed in an ecology of meaning. Ludic literacy then sheds light onto some of the more obscure functions of games. A particularly illuminating example can be seen by comparing *Super Mario Bros.* and *Super Mario Bros. 2*. In the latter, the player is given the choice of choosing between Mario, Luigi, Princess, and Toad. Each of the playable characters has a different way of moving through the world. Controlling Luigi,

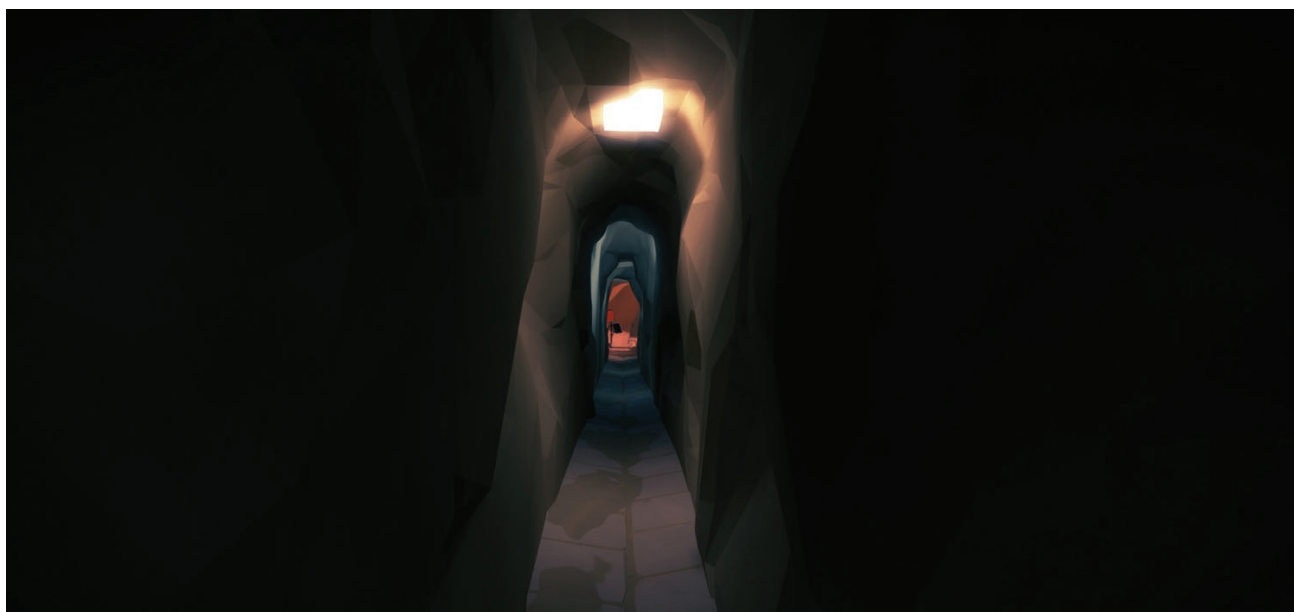
for instance, feels slippery, as if running on ice. Changing directions is hard for the player using Luigi, but the green plumber can reach heights inaccessible to all other characters. Princess moves slowly and can jump almost as high as Luigi. However, her special ability allows her to float in the air momentarily with each jump. The floaty feeling of controlling Princess changes the experience of play, resulting in the creation of unique imagewords owing to the specific “feel” of each character. This “feel” does not change the game—the goal-driven play put forth by the game’s rules and systems remains, even if it does allow players to explore alternate paths or techniques. These changes and considerations seem obvious, owing to the embodied nature of play; we “feel” the game being played differently.

The original *Super Mario Bros.* provides a less obvious example, as the game does not allow players to pick their character. Consider how changing the avatar of Mario to the Princess might change gameplay. The imageword of the

player’s avatar has changed, providing the player a different play experience even though the game itself—the end state of each level the player strives for—has not changed. The narrative becomes something new with Princess rescuing the knightly plumber, but some formal aspects of the game become less obvious such as why Princess, who is not a plumber, explores pipes. This is even more evident in *Super Mario Maker* where the player is given access to hundreds of costumes, from Mario, to Link, to a pigeon, but each controls like the Mario avatar from *Super Mario Bros.* Again, the game remains the same, but the experience of the game, the act of play, has changed because the imageword has transformed.

With an understanding of both ludic logic and imageword, we can build toward a ludic literacy of recent, more multifaceted video games. Jonathan Blow and Thekla, Inc.’s *The Witness* is a difficult game to classify, occupying a space somewhere in between auteur art game and industry

Thekla Inc., *The Witness* (Untitled 4), 2016. Image courtesy Thekla Inc.





Thekla Inc., *The Witness* (Untitled Banner 3), 2016.
Image courtesy Thekla Inc.

heavyweight AAA release. It was made by a small independent team with a specific, unique vision for their game, yet it took seven years and several million dollars to produce. *The Witness* stays true to traditional puzzle games that feature little story and character development, and puzzles increase in difficulty as the player progresses. Within this traditional framework, several aspects of ludic logic make thinking about the game in terms of its procedurality and rules productive. *The Witness* is a game obsessed with rules, placing emphasis on knowledge and logic. Each set of puzzles and the cryptic symbols forming the puzzles' logic must be deciphered and completed to gain access to new areas. However, no amount of analysis in this mode can capture the magic and sense of play *The Witness* induces in players. The game encourages the player to form, observe, and reflect on new and creative imagewords. The user must become an active participant in the static environment surrounding them. While the game seems open-world, there are many gates and enclosures blocking progress. In the game's central town, the player encounters the first of the island's many statues: a concrete figure stands with arms outstretched above his head, a look of woe on his face. If the player follows the statue's line of sight, they see a large windmill. At this point in the game, most players will be unable to access the windmill, but once returning to town, astute players will notice while the statue of the man has remained the same, their perception of it has changed greatly. Approaching the statue from the opposite way forces players to encounter the statue's shadow before the statue proper, and what was once a man in great pain becomes the shadow of a man juggling rocks: his outstretched hands are transformed into those of a juggler, complete

with several stones on the ground to act as balls.

The process of revealing a shadow clues the player in to one of the game's more powerful lessons: it matters where you stand. Perspective becomes an important theme, and indeed the key to the game's final area is to resituate the perspective between the player character and the statues that surround the puzzle. This is not necessarily a concept essential to success in the game, but it is crucial to the way the game is experienced. Whether a player notices the play between juggler/pitiful man shadow/statue has no effect on game progress. However, this is but one of the many perspective illusions the game has in store for the observant player.

Examining a game's ludic literacy gives insight into a game's idiosyncrasies, systems, procedures, and player progress, not just its goals. One way to examine these aspects is to analyze the meanings underlying the optional tasks the game privileges. In *The Witness*, there are dozens of clever perspectival tricks such as those

mentioned above, but the game establishes this method of playful communication to suggest the presence of an entirely optional way of playing the game embedded in its original structure. Every puzzle in the game begins and ends in the same manner: a large circle with a small branching line eventually ends in a rounded section. After playing through many of the game's 523 puzzles in this manner, it becomes almost impossible to miss these simple designs outside of their walled-off panels. This is a process called pareidolia, where the mind perceives patterns where no intended pattern is meant to exist. Other examples of pareidolia include the man in the moon, and the "Paul McCartney is dead" conspiracy. *The Witness* makes use of this phenomenon by repeating the same set of symbols, making players see patterns where there is only coincidence. Once players see enough of these patterns, they may be tempted to click on one of the large starting nodes, just to see what happens. If a player does this, the game responds

Thekla Inc., *The Witness* (Untitled 4), 2016. Image courtesy Thekla Inc.



with an uncharacteristic burst of audio and a flaming cursor. If the player successfully traces a path from starting node to rounded endpoint, say, perhaps, on one of the island's drainage pipes or train tracks, they will be rewarded with a shower of sparks and confirmation from an in-game obelisk that they have found a secret. That is the only reward. The game can be completed without the player ever completing a single environmental puzzle. This is a form of play entirely dependent on the creation of imagewords, and it is one that does not stay confined to the game itself: entire Tumblrs and subreddits are devoted to documenting examples of *The Witness's* pareidolia effect outside of the game. It manifests itself through the ludic literacy the game establishes. This carryover between virtual and real worlds gives further credence to the positioning of play as embodied, allowing for the play fostered by games to be used in creative ways.

What the game establishes as metaphor—the paneled line puzzles forming its core mechanic—takes on exogenous meaning using both the game's environmental puzzles and the intentional use of pareidolia. In studying how the brain processes metaphors, psychologists Eduardo Santana and Manuel de Vega conclude that we experience metaphors in a way analogous to their literal parts.²⁶ Their experiments show that whether it is a literal or metaphorical “rising,” the same areas of the brain are used. Because of this, they state that metaphor is embodied, as are its literal counterparts. A walkthrough of *The Witness* demonstrates the many ways the game attempts to communicate non-verbally with the player. Because of the recurrence of panel after panel of puzzles, and then the presence of the puzzles throughout the game's environment,

the player's perception through the act of playing, and specifically through the act of constantly scanning for playable puzzles. There is no in-game goal related to this; it simply highlights the importance of seeing to the game. Without a ludic literacy, this important aspect of the game is completely missed or glossed over.

This brief examination of *The Witness* has developed a ludic literacy, in which play takes on expressive potential in the ergodic creation of new imagewords within the limits of a conditional system. Exploring limits through these conditional operations, coupled with the resulting imagewords, creates a ludic literacy that more thoroughly explains the embodied play experience of video games such as *The Witness*. Indeed, when play allows for imagewords to be rapidly and creatively constructed, a game is more likely to be embraced by an audience primed to engage in making meaning through embodied, productive play. This engaged concept of ludic literacy facilitates an understanding by both players and creators of how play is essential to constructing meaning, constituting a step toward wider appreciation of video games as more than just the sum of their narratives and systems. ➔

Bio

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Notes

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Gone Home, 2013. Image courtesy of The Fullbright Company.

Ludic Voyeurism and Passive Spectatorship in *Gone Home* and Other “Walking Simulators”

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Abstract

Walking simulator video games are a comparatively new genre comprising those games that offer little to no ludic interactivity and agency to their players other than moving through virtual spaces to discover fragments of narratives that may or may not form a coherent story. To understand this genre better, this study focuses on its emergence, relation to the medium in general, and possible engagement appeal for its players. Walking simulator video games construct *passive spectatorship* roles for their players contrary to more action-centered video games, limit their ludic agency, recount past events rather

than offering simultaneous storytelling, and utilize *tabula rasa* main characters. Derived from the definitions of voyeurism in film and theatre, the concept of *ludic voyeurism* is further defined to explain the kinds of pleasure a passive spectatorship role can offer to video game players.

On a stormy summer night in 1995, college student Kaitlin Greenbriar returns to her home in Oregon from a long stay abroad to find her family home completely empty. The house feels like its dwellers left very recently, and Kaitlin learns her parents, Carol and Terry, as well as her sister, Samantha, are nowhere to be found. Kaitlin puts the clues she finds in her family home together to try and discover where they have gone. This is the main premise of The Fullbright Company's video game *Gone Home*, released in 2013 for home computers and then in 2016 for video game consoles. The video game's official website characterizes its genre as "a story exploration video game," and yet the dominant player tag for the video game on the popular distribution platform, Steam, is that of a "walking simulator"—initially used as a derogatory term of ridicule, but later transformed into an established genre.¹

In this article, I discuss the issues regarding this video game genre: how it emerged, how it utilizes interactivity in ways that differ from the rest of the medium, and finally how it engages its players. For this final point, I argue that in its ludic participation—a general concept describing playful interactions and gameplay—the relationship between walking simulator video games and their players is based on two main elements: 1) the obliviousness of the video game world toward the players, thus assigning them a position that will be called here a *passive spectatorship*, trapped between the temporality when the narrative takes place and when it is being discovered, and 2) the exchange of pleasure of control, or *agency*, for another attraction in this article called *ludic voyeurism*: an experience I describe as existing between the voyeurisms of cinema and theatre.²

The term "walking simulator" originally emerged from Steam's player tagging system, introduced in early 2014 with controversial results. One of these results was the widespread tagging of *Gone Home* as "not a game."³ This tag was later removed from the system by Steam along with other offensive tags like "hipster garbage."⁴ Considering that the Steam platform accounts for almost 75% of all video games sold for home computer platforms, it is clear how crucial any representation of a video game on it can be.⁵ Initially the name "walking simulator" was devised as a derogatory term to ridicule those games whose sole interaction was typically the exploration of a narrative through movement in space; however, the term was eventually neutralized through widespread adoption.⁶ As of January 12, 2017, Steamspy—an unofficial website using Steam's officially-provided real-time data to report the system's statistics with self-reported error margins—noted 210 games with this tag.⁷ Upon manually digging through this list, one sees that some of these tags are still used as insults; for example, video games like *The Elder Scrolls V: Skyrim* and *Mechwarrior Online* also have this tag, when clearly the scope of each game is much more extensive. Ironically, a tag devised to mark those video games not considered "proper" video games now requires more digging to dissociate them from the "true" walking simulators. My own manual analysis revealed that only 54 of these video games had the walking simulator tag in the first position of their definition on the Steam platform.⁸ Indeed, a video game can have many tags, but only the most dominant five are shown on the video game's page in the order of the number of players using the tag to define the experience. The

other dominant tags used for these video games are indie (41%), adventure (35%), exploration (14%), casual (9%), atmospheric (7%), horror (7%), female protagonist (6%), and first-person (5%). The 6 leading walking simulators also had 5000+ user reviews with 17% on average marked as negative by their reviewers: *Firewatch* (20,487, 13%), *Gone Home* (14,127, 23%), *The Way of Life* (6,893, 24%), *The Vanishing of Ethan Carter* (6,582, 10%), *Dear Esther* (5,767, 24%), and *Layers of Fear* (5,640, 7%).

Upon its release, *Gone Home* sparked discussions about whether it was a “proper” video game: after many popular gaming websites published pieces debating its game status, *Gone Home*’s writer and designer, Steve Gaynor, defended the “gameness” of the product in a talk at the Game Developer’s Conference in 2014.⁹ At the height of the debate, a video by satiric fan website Dorkly detailed how *Gone Home* could become a “real” video game: in this video, Kaitlin’s sister was kidnapped, and to get her back, she had to fight Nazi soldiers that had invaded her family home in first-person, shooter video game style.¹⁰ This perspective, lampooned by Dorkly but espoused by others, derides *Gone Home*’s non-gameness due to its lack of action, conflict, fighting, or other forms of excitement. Despite Polygon naming *Gone Home* its 2013 “Game of the Year,” it was still criticized for lacking the kind of interactivity to which gamers were accustomed.¹¹ The video game obstructed active agency, relegating gamers to positions of mildly passive spectatorship, thereby causing resistance from them in turn.

Earlier video game studies offer interactivity as an indispensable feature of the medium and

occasionally even a synonym for gameplay.¹² Justifiably, interactivity became a central pillar in video game analysis.¹³ However, interactivity is not a monolithic phenomenon; instead, it can operate in various layers within the medium. Michael Sellers proposes five ways interactivity is experienced in video games: 1) perceptual and physical interactivity governing repetitive game actions like walking, jumping, shooting, etc.; 2) short-term cognitive interactivity facilitating the overcoming of short-term puzzles and objectives; 3) long-term cognitive interactivity allowing players to devise long-term strategies in long or consecutive gameplay sessions; 4) social interactivity emerging in online games between players; and finally 5) cultural interactivity establishing cultural norms and long-term perception changes from the video game experience.¹⁴ Among these layers, the first form of interactivity that may be offered is an immediate perception of gameplay. The feeling of video game control, once merged with the instant feedback on the screen, is defined as a dominant pleasure offered by the medium.¹⁵ The obstruction and emaciation of this familiar pleasure in general may also have the potential of complicating the players’ feelings toward the video game, and thus a reluctance to categorize the experience as a “game” emerges.

Consider another experimental video game called *4 Minutes and 33 Seconds of Uniqueness* by Kloonigames, which won an innovation award in 2009 at Nordic Game Jam.¹⁶ In this video game—named after the experimental composer John Cage’s famous piece *4’33”*—the “players” are allowed no interactivity. The way to win the game is to be the only person online in the world

who is playing it for 4 minutes and 33 seconds. If another player starts playing while someone else is already counting down, they will both lose, and the system will disconnect them both. The visual output of the game is just a full-screen black and white progress bar. A similar discussion of the putative gameness of *4 Minutes and 33 Seconds of Uniqueness* has also taken place.¹⁷ However, this was a relatively easy argument to address, since the game was not a commercial product, but rather a free experimental indie art game. Commercial versions of such video game categories often meet with resistance and hostility in various gamer groups.¹⁸ When *Gone Home* was released as a commercial video game and praised by various news outlets for its innovative storytelling approach, its status as an isolated, experimental, and quirky project within a marginal game genre transformed into a standard-bearer for an audience seeking visibility and recognition.

Another video game, *Dear Esther*, gained positive feedback in 2008 when it was released as a free product.¹⁹ In 2012—the year before *Gone Home* was released—*Dear Esther* was commercially released by developer Thechineseroom. Upon its commercial release, this game was also tagged as a walking simulator on the Steam platform. In *Dear Esther*, the only agency given to the player is walking a predetermined path on a desolate island, listening to non-sequential narrative audio fragments adding up to obscure and dissociative narratives of a man who is suffering from the loss of his wife in a car accident, an 18th century shepherd who lived on the island, and an explorer named Donnelly. On each play through, the recorded narrative fragments randomly change, offering the player more

and more details of each story. Other than that, the video game contains no other objectives or achievements.

Both video games paved the way for alternative forms of textual pleasure wherein the ludic power of the player is diminished to privilege the game's authorial vision. In defining the video game as a media text to be read, I follow the literary theory of Roland Barthes, who has described a text as that which is "*experienced only in an activity of production.*"²⁰ Video game texts like these and the subsequent walking simulators that followed are not experienced with the intensity identified with traditional game play, but rather as an activity of meaning-making. They fail to integrate with the medium in terms of ludic agency, but not in form. In this sense, they contrast with Cage's *4'33"*, wherein musical form is upended ("silence" becomes music) and audience agency becomes paramount; frequently the piece is identified with the sounds of an orchestra turning pages, the noises of the venue environment, and an audience shuffling, coughing, talking, or walking out of the performance.²¹ It is even possible to compare walking simulators to amusement park rides, where participants move through space triggering events, animations, and story fragments without the ability to perform meaningful interactions either with the story or with the space. These experiences could be considered *environmental storytelling*—a concept previously used for theme park industry, but later adapted to video game discourse.²² Walking simulators appropriate the form of video games, but disrupt participant agency with this kind of environmental storytelling.

PASSIVE SPECTATORSHIP USING THE TABULA RASA DEVICE

Jesper Juul asserts that there is an inherent inconsistency between narration and interactivity.²³ Previous theorists have defined narratives as the recounting of past events, and they include the appeal of inevitability and invariability in their definitions.²⁴ Using this viewpoint, the term “interactive narrative” is an oxymoron since it is not possible to have narration and interactivity at the same time; the narrated events have already happened in the past, and having the ability to make choices to change their flow is a disruption of the concept. A possible solution to this dilemma might be the application of Genette’s (*histoire*, *récit*, and *narration*), Stierle’s (*geschehen*, *geschichte*, and *text der geschichte*), or Rimmon-Kenan’s (*story*, *text*, and *narration*), each of which outline triple structures of interactive storytelling.²⁵ In these triple structures, the first part points to a signified narrative content (*histoire*, *geschichte*, or *story*), the second points to a signifier narrative statement or text (*récit*, *text der geschichte*, or *text*), and the third to the production of this text, mainly to the process of transforming a signified narrative into a signifier text (*narration*, *geschehen*, or *narration*). After adapting this structure to interactive narratives, the whole universe of narrative possibilities in an interactive story (or video game) becomes the *histoire/geschichte/story* which encapsulates all the narrative pieces players can discover and explore. *Récit/text der geschichte/text*, on the other hand, becomes the happenings of a single play session within a whole universe of possibilities. This focus encapsulates the consequences of all choices made by the player during that session, namely how the story has progressed, and,

eventually, how it all ends. The final piece of the puzzle is *narration/geschehen/narration*, which is the story of the player playing in that specific session—the creation process for the *récit/text der geschichte/text*. This final piece historicizes why the players made their choices, how their ludic performances interacted with the overall story, and how their play processes became the components of this single play session.

Walking simulators present a different approach to this dilemma. Players may have a certain degree of interactive agency in deciding how to move through the video game space and in what order they interact with objects to reveal narrative pieces; however, they remain mainly passive in the actual flow of the story. Players are not expected to make choices and participate in the formation of a narrative. To the contrary, after a short time they become aware that the events in the video game space have already transpired, and possibly even finalized. Their role is only to find the pieces and bring them together to learn and understand the story, not change or decide how it ends. This characteristic of walking simulators is a solution to the conflict between narration and interactivity. The story they present is not interactive; however, the process of discovering that story is.

Compare this approach with two different examples. The first is *The Stanley Parable*, a critically-acclaimed video game designed by Davey Wreden released in 2013; the second is the Nobel Laureate author Orhan Pamuk’s *The Museum of Innocence*, which is both a novel and a physical museum in Istanbul that hosts the objects and memorabilia existing in the novel. Although *The Stanley Parable* is a walking simulator in definition (the only agency afforded to the player is

movement through space and simple interactions with certain objects), when checking the Steam webpage of this video game, it was not tagged as such as of January 2017.²⁶ Its top five tags are comedy, narration, indie, first-person, and satire. This departure from the walking simulator genre is possibly because, during gameplay, players can make choices between different walking paths that result in different endings.

For both the players and the themes presented here, such a simple form of interactive agency during the story seemingly pushed *The Stanley Parable* out of the bounds of walking simulators. Even though the puzzles and path selections are relatively straightforward, the forking narrative changes the genre. It is also possible to mention similar simple puzzles in *Gone Home*, such as finding papers with safe codes written on them, or checking maps to find secret passages. However, these clues are merely there to guarantee your discovery of the narrative in its correct order, so they fail to create a feeling of another genre. If *Gone Home* had alternate story paths and endings, would it still be popularly understood as, and tagged as a walking simulator? When crudely comparing it with *The Stanley Parable*, the answer is seemingly “no.” It is also significant that the latter video game has very different subject matter and storytelling techniques and is often referred to as a meta-video game about video games.²⁷ Still, this comparison only makes sense in terms of the genre form, not its context.

Similarities might also be drawn between *Gone Home* and Orhan Pamuk’s 2008 novel *The Museum of Innocence*. A museum of the same name was inaugurated in 2012, and it displayed the fictional house and objects part of the nov-

el’s narrative in Istanbul as a distinctive mode of novel interactivity.²⁸ The physical *Museum of Innocence* offers a complementary narrative to the novel, augmenting the visitor’s understanding of that story, but not changing it. Visitors to the museum cannot intervene in events of the novel that have already happened; rather, they experience events from an augmented perspective. This focus is like visiting the family home in *Gone Home*: players can only observe or discover the story, but not intervene in its outcome.

A comparison between the experiences constructed by *The Stanley Parable* and *The Museum of Innocence* reveals important differences. In *The Stanley Parable*, all choices performed by the player are recounted through a voiceover as if they are the experiences of the main character, Stanley. Moreover, even when the distinction between Stanley as the character and the game player as the choice-maker emerges, the narrator maintains the façade of a connection between the two. In *The Museum of Innocence*, the readers become aware of the main character Kemal’s pain over the years through his obsession as voyeur and collector of memorabilia belonging to his lost love, Füsun. Conversely, in *Gone Home*, the main character Kaitlin is a *tabula rasa*, a character with little to no background story, dialogue, monologue, or development throughout the story. Although Samantha, Terry, and Carol all have interesting and multi-layered stories, there is no story or character-building about Kaitlin in the narrative components found inside the house. Knowing almost nothing about Kaitlin invalidates her experience solving the mystery of her family, flattening the experiences of *récit* and *narration* layers, thereby making the experience of discovery not hers, but ours as game players.



Gone Home, Bedroom, 2013. Image courtesy of The Fullbright Company.

Players know nothing about her feelings as they are exploring the sexual identity of her sister, the out-of-marriage relationship of her mother's, or the sexual abuse her father endured as a child in this same house: her personality and her feelings are absent, the character functions only as a *tabula rasa* for players' experiences.

Gone Home's dominant story is Samantha's coming-of-age and coming-out narrative. This marks the video game as part of the historiographical archive of queer politics.²⁹ Ian Bogost offers the video game as a coming of age for the medium itself.³⁰ To explore the story of Samantha, players must discover the secret hiding places in the house that thematically coincide with Samantha's hidden identity. Whenever the visible parts of the house are transgressed and the player uncovers secret rooms, passages, and boxes, the sexual identity of Samantha hidden under her depressed adolescent moods become visible. With each discovered mixed tape, fan-

zine, letter, note, and voice recording, the player is drawn deeper into the story of Samantha and her girlfriend Lonnie. The players do not discover this love story as the older sister Samantha, but as themselves—save for the single instance when Kaitlin refuses to read a letter describing Samantha's first sexual experience with Lonnie. In this moment, Kaitlin's role as a *tabula rasa* is temporarily forfeited and her presence reasserts itself.

The stories of Kaitlin's parents are not as central as those of Samantha's, but they are engaging and well worth discovering. The outcome of Carol's out-of-marriage relationship is not resolved in the game, but since Terry and Carol seem to be at a couple's holiday resort, players might reason they are trying to revive their marriage. Terry's story is the hardest to put together, not due to the video game's mechanics, but rather how the presented pieces need more interpretation and exposition. A coherent timeline



Gone Home, TV Room, 2013. Image courtesy of The Fullbright Company.

of Terry's abuse as a child by his Uncle Oscar explains his obsession with the year 1963, when the abuse took place, justifying his failed venture as an author of novels about special agents returning to that specific year to prevent the JFK assassination.³¹

As players progress deeper into these storylines, the role of Kaitlin as a *tabula rasa* character becomes ever more critical. What emotions would a young woman experience while revealing secrets belonging to her abused father, her cheating mother, or her sister whose sexual identity she should have been aware of probably earlier and whom she hadn't been there to support? This lack of character-driven exposition provides players with the freedom to reflect on these themes without being bound to a single perspective. An even more alarming prospect would be the chance to meet the family members. This kind of encounter would potentially force players from their voyeuristic positions and into active roles in which they must make

decisions and judgments about events from Kaitlin's (or their own) perspective. This encounter would also disrupt the temporality of the video game; these events have already happened before the summer of 1995—the timeline of the game—and not during game play in real time. Thus, suddenly being torn from the role of passive spectator and pushed into a decision-maker role for possible dialogue options confronting family crises would disrupt player experience. Thankfully, this encounter never happens.

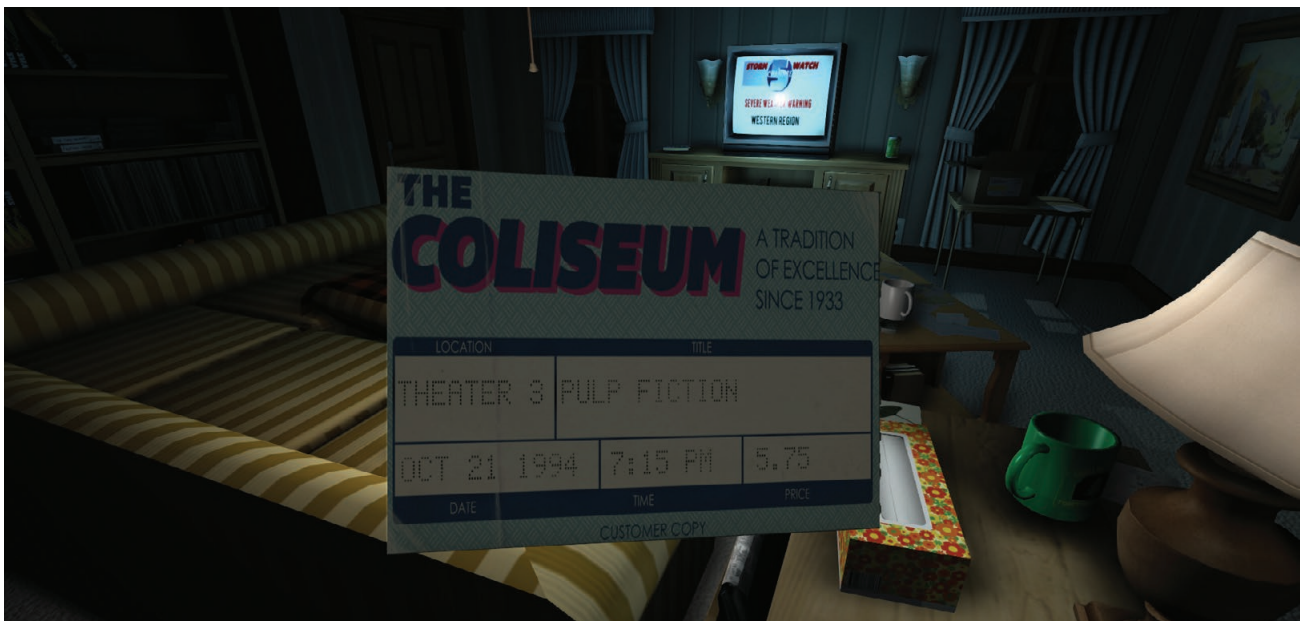
LUDIC VOYEURISM AS AN UNLIKELY VIDEO GAME ENGAGEMENT

To understand the concept of voyeurism and how it operates within the walking simulator genre, it is fruitful to examine the similar concept of voyeurism in film theory. The concepts of a voyeur and exhibitor exist in close dualities as "*active/passive, subject/object, seeing/being seen*": Christian Metz asserts both cinema and theater are exhibitionist forms displaying dif-

ferent characteristics in terms of the experiences they offer to their voyeurs.³² Cinema exhibits its content, but typically refuses to acknowledge its exhibitionism and the presence of voyeurs since there is an inherent temporal and spatial distance ever-present between the form and its audience—a notion also called *cinematic voyeurism* or *fetishism*.³³ This type of voyeurism is offered as one of the main reasons why characters on screen rarely interact with the audience or look directly at the camera. In theatre, however, the direct contact between the audience's voyeurism and the physical reality of the stage is one of the important factors constructing theatrical pleasure.³⁴ Here pleasure is enhanced by both proximity and distance operating at the same time. The performers, the set, and the objects on the stage are very close, but touching them is not allowed. This rejection of what one might personally possess creates *spectatorial dissatisfaction* both producing and maintaining desire.³⁵

I position *ludic voyeurism* between these voyeurisms of cinema and theatre. Storytelling video games rarely acknowledge their status as fictional narrative engines, but instead construct cinematic voyeurism through camera-like viewports into the story worlds they simulate, their creators frequently obsessing over issues like realism and high-technology presentation for even greater pleasure.³⁶ However, these video games build a feeling of proximity and interaction with the objects of desire they portray, be it objects, characters, or the storylines. The players can possess and interact with them, but only from a ludic proximity governed by the video game developer—in effect, it is the developer who decides what kind of actions are allowed. In many cases players are encouraged to possess and experiment: players can climb, break, move, even kill, and each time the video game is reloaded, it resets for further alternative experiences. However, they cannot possess or interact with other

Gone Home, MovieTicket, 2013. Image courtesy of The Fullbright Company.



elements out of reach (or more precisely, designed to be out of reach by developers) unless they cheat or reprogram the software code. The same relationship can be extrapolated to video game narrative: players can only choose and observe outcomes of narrative paths allowed to them—they remain distanced from paths they can imagine but cannot undertake. This satisfaction / dissatisfaction relation between the game world and players forms the basis of ludic voyeurism.

In *Gone Home*, players can pick up objects of importance and revolve their 3D models to discover more details about them. This is a selective possession, as not every object can be interacted with, and not every kind of interaction is possible with every object. This aspect is painfully apparent in *Dear Esther*, where no interaction is allowed with any object in the game. The island is not a performance stage; the *tabula rasa* male character walking through it is simply a cinematic camera, and the video game never acknowledges any fictionality. The family home of *Gone Home* is a limited theatre stage offering a selection of interactive objects and portions of the house that reveal secret locations. The peak of spectatorial dissatisfaction emerges with the discovery of the letter detailing the sexual life of Samantha and Lonnie, and Kaitlin refuses to read it.

Still another component of ludic voyeurism operates on the contextual and ideological level. Players are invited to interactively snoop inside the life stories of an ordinary American family. The video game exhibits these underlying themes and thus is transformed into a critical performance of concepts like gender identities, family values, monogamy, and the abuse of chil-

dren—both the sexual abuse Terry experienced as a child and the psychological abuse Samantha endured as a non-heterosexual individual. Players experience this performance voyeuristically; they may touch and fiddle with objects presented in the house as a part of the nostalgic narrative, much like someone inside a museum featuring an American family.³⁷ However, they cannot “touch” and experiment with that narrative; they can only reveal it step by step.

As a result, ludic voyeurism operates on three distinct levels: 1) within the video game world wherein players engage with selected items, characters, and locations to predetermined extents, which both facilitates and inhibits voyeuristic fetishisms; 2) within the video game narrative wherein players experiment with different paths to alter outcomes; and 3) within the contextual level wherein authorial power facilitates players’ immersion regarding social themes through their actions.

CONCLUSION

Initially, walking simulators were recognized for their lack of interactive and ludic agency, thus causing strong resistance from some video game players. However, these video games present new ways to experiment with narrative by utilizing *tabula rasa* characters who engender passive spectatorships in which players discover past narratives rather than engaging in real-time play. This article presents the concept of *ludic voyeurism* to define the combination of cinematic and theatrical voyeurisms in walking simulator video games, where players interact with the performance space and feel the pleasure of possession, while at the same time remaining at a distance from the actual narrative.



Gone Home, Basement, 2013. Image courtesy of The Fullbright Company.

More broadly, any critical outlook into the emergence of a new genre like walking simulators can contribute to our understanding on several levels. Firstly, a critical assessment can anticipate and interpret the reasons causing player resistance and thus expand our cultural understanding of the player base and industry mechanics. Secondly, examining the different ways of engagement the genre offers in contrast to the already-established video game engagement studies broadens our understanding of audience engagement. Thirdly, it gives scholars and critics the opportunity to revisit the concepts of interactivity and agency in new contexts. Finally, it allows us to draw on the riches of other disciplines and discover counterparts from other media, like voyeurism, that also exist inside the video game medium in different ways. As this article is a current snapshot of walking simulators, future developments in the genre will prompt additional discussion of participation and agency that shape creation of, and engagement with lu-

dic voyeurism. Video game genres will continue to emerge from new modes of narrative interaction, propelled by game creators who challenge normative player immersion to facilitate audience confrontation with social issues and movements. ➔

Bio

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Fig. 1. Kieran Nolan, *Arcade Operator*, Title Screen, 2017. Image courtesy Kieran Nolan.

Arcade Operator. An Art Game Experiment About Arcade Repair

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Abstract

Arcade Operator (Test Rom Edition) is an experimental art game where the player takes on the role of a video game Arcade Operator. Instead of playing the coin-ops present in the diegetic space of the onscreen arcade, the player must interface with the game cabinets as both operator and technician. *Arcade Operator's* style of interaction is closely based on the side-scrolling brawler sub-genre of arcade gaming, switching the user context to a non-gameplay mode of interfacing with arcade video game platforms, albeit in an abstracted form through an arcade play mechanic.

PROLOGUE

This Book will not, nor is it intended, to:
Make you a technician
Turn you into an engineer
Fix all your game problems
Repair printed-circuit boards, or
Make coffee.

Overall, we hope this book helps you feel more confident with the techniques, tools and terminology associated with coin-operated electronic games. We wish you good luck and good troubleshooting!

—Atari, Inc., *Coin-Op Field Service*, 1980

INTRODUCTION

Arcade Operator (Fig. 1) is the sequel of sorts to *Control* (Nolan, 2013), an experimental art game about interface constraints. While *Control* articulated the limitations of physical game controllers through a down-sampled onscreen representation of the hand-to-joystick and gamepad link, *Arcade Operator* uses arcade-brawler gameplay conventions to abstract the act of manually interfacing with arcade circuitry. *Arcade Operator* is also a critical artifact, a metagame using the medium of the arcade video game interface to reflect on the software and hardware of game interfaces. Specifically, *Arcade Operator* reflects on the context of user interfaces by articulating the non-play actions of an arcade operator through the control schema and visual interface conventions of a side-scrolling, arcade-brawler aesthetic.

THE ARCADE, CRITICAL PLAY, SELF-REFLEXIVITY, AND THE METAGAME

Arcade Operator is a self-reflexive critical play artifact, a metagame meant to investigate user context and interface conventions in arcade video

games. The term *arcade* is used throughout this paper to describe both the situated space of the video game arcade as well as the genre of arcade games, whether home system conversions, or arcade-style games developed specifically for home consoles.

In *Metagaming*, Stephanie Boluk and Patrick LeMieux present several definitions of the term *metagame*; they refer to a 2011 blog post by Andy Baio in which he describes metagames as “playable games about video games.”¹ *Arcade Operator* further focuses this definition as it extends the concept of metagaming to consider the physical upkeep of video game hardware, and not just game software.

Regarding *critical play*, Mary Flanagan states that it “means to create or occupy play environments or activities that represent one or more questions about aspects of human life.”² This definition of critical play relates to philosopher and game designer Stefano Gualeni’s definition of self-reflexive games as “video games that are deliberately designed to materialize, through their gameplay and their aesthetic qualities, critical and/or satirical perspectives on the ways in which video games themselves are designed, played, sold, manipulated, experienced, and understood as social objects.”³ Though the occupied environment in *Arcade Operator* is the diegetic space of the arcade-brawler genre, the game critiques its tropes and limitations to examine game software and hardware by investigating the role of the *Arcade Operator* as facilitator of arcade gameplay. By taking the arcade interface and simultaneously presenting it as an enabler of both play and non-play, *Arcade Operator* subtracts several core elements from the

brawler mechanic, namely the enemies and the brawling. In doing so, the game emphasizes the repetitive nature of the operator's task, and reimagines enemies as time and resources.

LAYERS OF INTERFACE

The role of the interface is to facilitate communication, whether between a human and machine, between two or more humans mediated by a machine, or between machines or the internal mechanisms inside a single machine.⁴ An effective interface naturalizes this link, with the most functional solutions ensuring that the conversation flows effortlessly.⁵ The abstraction of the machinic, binary processes provided by voice-driven and graphical user interfaces (GUIs) allows multinational technology companies access to the widest markets possible; user-friendly interfaces welcome customers uninvolved or uninterested in hardware and software development, thus ensuring maximized sales.

The interface level marketed to the pay-to-play arcade video game player is an intentional extension of this consumerist ideology; however, video game usability and playability are not mutually inclusive. Playability demands a certain amount of challenge: enough to frustrate, but not enough to deter continued engagement. The player-level interface is only one of many layers possible with each gaming platform, and the level of accessibility is always dependent on the context of the specific user.

INTERFACE CONTEXT

While current game developers and engineers construct game environments through software interface contexts, the arcade operator who runs the arcade and maintains the machines has a

unique, non-play level of interaction with the arcade cabinet hardware. Operator-level interfacing with the arcade platform ranges from routine tasks, such as emptying the coin-tray and configuring game values via dip-switches, to more complex tasks, such as installing, troubleshooting, and repairing game printed circuit boards (PCBs). To the playing and paying public, arcade video game cabinets represent closed-off, black box computing systems. An arcade cabinet's inner workings are strictly utilitarian, right down to the unadorned, exposed nature of the cathode ray tubes and PCBs. *Arcade Operator* is an experiment in taking the repair and maintenance tasks of the *Arcade Operator* and making the associated processes and platform components visible to the arcade player.

ARCADE IN ARCADE

One of *Arcade Operator*'s inspirations is the end sequence for *Golden Axe*, released by Sega in 1989 as a response to *Double Dragon* (Technōs, 1987). It took the established side-scrolling, beat 'em up game and fused it with the magic and sword elements associated with the fantasy genre to create a barbarian-themed, hack-and-slash finale. Its ending sequence initially plays out as expected: after Death Adder is defeated and both the King and his daughter Yuria are released, players are congratulated with the completed world map, signed off "fin" with a quill pen. It's a brief, but suitable moment of closure.

The screen then fades to black, transitioning to a scene at a Sega amusement arcade where three children are gathered around a video game coin-op cabinet identified on a poster as "Great Axe." Smoke erupts from the screen as one by one, the villains of *Golden Axe* jump out of the

machine and chase the kids outside and down the street, followed in hot pursuit by the heroes.

This representation of the normal situated space of the *Golden Axe* arcade machine within its own game world humorously brings the game characters into the universe of the players; game immersion normally entails players immersing themselves into the world of its protagonists, but in this case, the game characters emerge into the world of the player, reflected in a detached third-person view through the visual and diegetic interface of the arcade video game itself.

ARCADE AS PSEUDO-SIMULATION

Arcade Operator offers a low-resolution approximation of a real-world task via the arcade interface. It uses the 16-bit arcade video game aesthetic as a vehicle for its simplified take on modelling a real task and environment.

Yu Suzuki's Sega arcade titles including *Hang On* (1985), *Outrun* (1986), and *G-LOC: Air Battle* (1990) delivers the immersion of motorcycling, driving, and flight to the amusement arcade space. Each game is accompanied by enhanced action aesthetics, minus the steep learning curve associated with their real-world equivalents. Their bespoke arcade cabinets provide a bolstered sense of connection by basing the arcade control system around the literal, real-world machine interface the game is modelled on.

During the 1980s and early 1990s, Codemasters published a series of budget-priced games for 8-bit and 16-bit home microcomputers using *Simulator* as the title suffix. These titles included *BMX Simulator* (1986), *SAS Combat Simulator* (1988), and *Pro Tennis Simulator* (1989). The use of "simulator" in the title suggested a level of re-

alism on par with industry level flight simulator systems. In truth, the titles are lo-fi arcade-style abstractions. *Pro Tennis Simulator* is described by comprehensive game database MobyGames as "bare bones action for 1 or 2 players."⁶ Devoid of first-person immersion, let alone any remote resemblance to their real-world inspirations, their gameplay is primarily characterized by reflex-driven action and basic audiovisuals.

REPAIR IN ARCADE GAMES

Another point of reference for *Arcade Operator's* design is that of repair as gameplay, exemplified by Lucasfilm Games' *Night Shift* (1990). *Night Shift* is a game in which the player character, Fred or Fiona Fixit, must maintain a factory by jumping from platform to platform, ensuring all the switches and levers are at the correct setting. All factory operation tasks are reduced to a single action button, and four arrow keys move the character around the gamespace. While not an arcade-born game, it does share several gameplay characteristics with arcade platformers.

In the context of arcade genre repair games and *Night Shift* specifically, it is difficult to ignore *Fix-It Felix Jr.*, the faux-classic arcade game invented for the 2012 Disney Movie *Wreck-It Ralph*. As with *Night Shift*, gestures associated with manual labor are reduced to a single action button control. Each successful repair action produces a chain of visual feedback as *Felix* moves frantically, partly obfuscated by an animated cloud of smoke and building debris.

DESIGN CONSTRAINT CONSIDERATIONS

It was necessary from the outset to implement several constraints, since there were so many possible directions that the game build could

take. Parameters were set not only in terms of the game's audiovisual look and feel, but also regarding the gameplay aesthetics and interface style. *Arcade Operator's* gameplay constraints were modelled on those of the side-scrolling brawler arcade sub-genre mechanic. Typically, this style of gameplay features a character traversing a scrolling playfield from left to right, using well-timed attacks and jumps to overcome enemies and progress onwards. For *Arcade Operator's* take on this action genre, two main constraints were implemented: the first of these self-imposed limitations was the omission of any enemy characters. This condition was inextricably linked to the second constraint, which was to include no combat or violence. Power ups and weapons are replaced with spare parts.

Anthropomorphizing the arcade cabinets was ruled out to strike a balance between real-world

authenticity and 16-bit abstraction. The static cabinets don't move around, and they don't attack. Instead of damaging them, the player *undamages* the cabinets by using the action button to engage in repair tasks. Successful repairs are reflected by the repair bars for each coin-op component moving from red to green. Fully-repaired cabinets change visually from plain blue to full color. When all cabinets on a level are repaired, the game progresses to the next level.

VISUAL INTERFACE

Arcade Operator's static interface comprises of a level timer, score, icons representing each coin-op repaired, and repair bars for each individual cabinet component. A composite repair bar summarizes all repair progress across the level (Fig. 2). The game world is presented in a slightly off-perspective pseudo-3D style, inspired by the

Fig. 2. PCB repair operation in-game. Kieran Nolan, *Arcade Operator*, 2017. Image courtesy Kieran Nolan.



aesthetic of *Double Dragon* and other popular brawlers, allowing the player to move around the arcade cabinets needing repair.

Arcade Operator's initial concepts were rendered at 320 x 240 pixels, the base resolution for the JAMMA arcade cabinet interface standard.⁷ These graphics were then scaled up by 400% and modified from 4:3 resolution to widescreen to accommodate modern displays. The low-color resolution is a nod to the visual constraints evident on home computer ports of arcade titles during the 1980s and early 1990s. The home-conversion style aesthetic was also chosen for expediency as well as clarity.

SOUNDTRACK AND AUDIO EFFECTS

The *Arcade Operator* soundtrack was composed with *Little Sound DJ (LSDJ)*, a tracker-based music sequencer designed for the 1989 Nintendo Game Boy Dot Matrix Game (DMG) console. It

allows the user to harness the Game Boy's four-channel chip (one wave channel, two pulse channels, and a noise channel). *LSDJ* isn't an official Nintendo software product, but has been hugely influential in the development of the chiptune music scene over the last decade.

All voice samples were recorded live and then processed with a bit crusher effect in Audacity to replicate the muffled low-bitrate sound characteristic of 1990s arcade sound hardware.

CONDENSING ARCADE REPAIR TO AN ARCADE CONTROL SCHEME

In arcade fighting games, a single button push can represent numerous actions, including attacking an enemy, picking up a weapon, opening a door, breaking a crate or barrel, administering first aid—or in the case of *Final Fight* (Capcom, Creative Materials, 1989), eating a roast turkey randomly found on the street to

Fig. 3. Level introduction screen displaying the arcade cabinet's anatomy. Kieran Nolan, *Arcade Operator*, 2017. Image courtesy Kieran Nolan.



placing the wrong part in the wrong place will register damage. For example, placing the coin-door into a cabinets screen region registers damage on the monitor repair bar.

CONCLUSION

Like Atari's field operations manual suggests, *Arcade Operator* doesn't claim to make the player a professional engineer or technician, but aims to provide players a basic familiarity with the role of the arcade operator and basic terminology of arcade repair and maintenance.

While design processes were used to produce *Arcade Operator*, the result is not a solution to a problem, but rather an opportunity to pose questions regarding video game genres, interfaces, and player contexts: can the arcade gameplay interface experientially articulate the non-gameplay side of interfacing with arcade technology? Specifically, how can the arcade brawler mechanic and its diegetic environment act as an abstracted pseudo-simulator, balancing arcade play and operator-interface contexts?

At the time of writing, the game exists as a demo "test rom" level, and is undergoing constant revisions. To download the game visit: <http://kierannolan.com/arcadeoperator>. ➔

Bio

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Arcade Operator Video Trailer: <https://vimeo.com/217395627>.

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Ludography

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SAS Combat Simulator, Codemasters, UK, 1988
Pro Tennis Simulator, Codemasters, UK, 1989
Night Shift, Lucasfilm Games, US, 1990
Fix-It Felix, Jr., Disney, US, 2012



INSIDE, 2016. Image courtesy of Playdead.

“Who Did I Jettison into Space?” Complicity as a Tool for Narrative Expression in *INSIDE* and *The Swapper*

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Abstract

This article explores complicity as a tool for narrative expression in digital games. Complicity is defined as the moment in which the player is required to do something they find morally or ethically repugnant in order to continue playing the game. Direct and indirect forms of complicity exist in multiple digital games, but two recent titles, *INSIDE* and *The Swapper*, use complicity to explore player/character identity in structurally and mechanically complex ways. Ultimately, they show how the digital game as an art form can present players and audiences with meaningful experiences that are unique to the medium of games.

The first few minutes of Playdead's *INSIDE* (2016) offer the following potential deaths: shooting, drowning, strangulation, mauled to death by dogs, falling, shot by darts, and drowning (again). As these deaths happen to a small, vulnerable boy, and as each one is animated in substantial, visceral detail, this is a potentially off-putting start for the average player—even one inured to the casual, comic-book-style violence of many other games.

As an art object, *INSIDE* has a great deal to offer players in terms of meaning-making, personal reflection, and aesthetic experience, much of which depends on the numerous awful things that can happen to the small boy, its player character. The developers of *INSIDE* have carefully chosen and deployed its violent content, as well as the substantial number of disturbing situations in which the small boy finds himself. For players to experience and understand *INSIDE* as an art object, they must take part in these disturbing, violent situations, most of which they are required to interact with or even directly cause.

The question of whether games qualify as an artistic medium has unfortunately endured, to the point that designer Tim Schaefer, when asked whether games were art in 2007, replied, "Here we go again."¹ As the Museum of Modern Art in New York added fourteen digital games to their permanent collection in 2012, the question "Are games art?" has been replaced by discussions regarding worthwhile artistic expression in games, as well as aspects of the medium that best lend themselves to that expression.² I consider games to be a primarily interactive medium with great potential for expression through visual aesthetics, sound, and narrative, as well as through the player's unique aggregate experience.

Digital games are unique for the ways in

which audiences must make their way through them, most commonly through the act of interactive play. For many digital games, much of a player's in-game experience revolves around bettering their abilities, acquiring new skills and resources, or improving their strategies to overcome increasingly difficult or complex challenges. Developers and creative practitioners are accustomed to difficulty as a barrier for their audience, most often in areas of skill such as precision, timing, strategic ability, or even simple muscle memory. If a player can't simply overcome the challenges presented, they will stop playing the game, meaning that the entirety of the experience is blocked to them—a concern that presents its own challenge to developers of deliberately difficult games such as *Super Meat Boy* (Team Meat, 2010) or the *Dark Souls* series (FromSoftware, 2011-2016).³

Fewer games present moral or ethical barriers to their players. Players are accustomed to thinking "I can't do that" or "I don't know how to do that," with the understanding that the game's structures and scaffolding will help them overcome each successive challenge. More rarely does a player think, "I don't want to do that," particularly while simultaneously thinking, "But I want to keep playing this game." Additionally, the interactive nature of games means we aren't simply watching something awful happen, but are engaged in making it happen. This may occur by our direct actions and choices, or by allowing something to happen through deliberate inaction, choosing the lesser of two evils, or lack of skill.

This presents an opportunity in that a player with two competing impulses—"I want to keep playing, but I don't want to perform this action"—can be pulled out of immersion for a moment of reflection on the content and events

of the game. Subsequently, their choices in and after such moments carry greater weight, and can allow for substantial meaning-making in digital games. I define this notion as *complicity*: the moment in which the player is required to do something they find morally or ethically repugnant in order to continue playing the game. Alternatively, complicity can be defined as the moment in which the player's moral or ethical stance is at odds with that of the protagonist character, even if their goals are in harmony.

In a medium in which “fun,” with its multitude of definitions and meanings, is still often seen as the most important metric by which we define a worthwhile game, complicity allows developers and creators to explore storytelling in games from two primary angles.⁴ First, the inclusion of moral or ethical ambiguity allows for a wider spectrum of storytelling structures. In addition to the coming-of-age tales and heroic archetypes that currently dominate the landscape, digital games have the potential to tell stories with moral and ethical complexity; characters diverse in age, background, ethnicity, and gender and sexuality; a variety of scopes, including games about the small, the personal, and the banal; and mature, complex themes that are engaging for a wider variety of adult audiences. Secondly, as complicity depends entirely on the interactive nature of digital games, it presents an opportunity to tell stories that are best told, or perhaps only able to be told, in the medium of games.⁵ Complicity can therefore be considered a useful tool for narrative expression in digital games, and can help designers and creative practitioners explore new structures for creating narrative art in digital interactive media.

COMPLICITY AS A TOOL FOR ARTISTIC EXPRESSION

Questions about the relationship between games and narrative have fueled a great deal of scholarship, from Jesper Juul's notion of the “half-real,” in which he posits that games are simultaneously real experiences and imagined fictional worlds;⁶ to Clint Hocking's discussions of ludo-narrative dissonance, harmony, and parity;⁷ to Chris Crawford's argument that interactive storytelling is an entirely new expressive medium, more than “video games with story superglued on,” and that an interesting story does not necessarily engender an interesting interactive experience.⁸ A full investigation of the relationship between narrative and games is beyond the scope of this article, but it's worth noting that digital games are not, fundamentally, a narrative medium, but are a fundamentally interactive medium with great potential for narrative expression. Digital games are also in a constant state of change, both in terms of their underlying technologies and in the expansion of what, as art objects, they are able or allowed to do.

There is no established set of best practices for digital game development, but it's worth noting that players choose to play games for a multitude of complementary reasons and there are many reasons players may be willing to overlook flaws in narrative or storytelling in favor of excellence in mechanical gameplay.⁹ Additionally, it's generally agreed that developers want players to remain fully immersed in their game for as long as possible, or at least for an appropriate duration of game time. Any elements that break players out of that state of flow, from aesthetic glitches to badly-tuned gameplay, are detrimental and

should be revised or eliminated if possible.¹⁰ Deliberately breaking players out of immersion is extremely risky, but can be rewarding if handled correctly. Nearly twenty years after its initial release, the horror title *Eternal Darkness: Sanity's Requiem* (Silicon Knights, 2002) is infamous for its insanity mechanic, which usually presented the player character with grotesque hallucinations, but under specific conditions broke the fourth wall by feigning that the game console had crashed and the player's saved game had been deleted. More recently, games that break the fourth wall, such as *Undertale* (Toby Fox, 2015) and *The Stanley Parable* (Davey Wreden, 2011), do so within the context of the game's narrative, often by acknowledging openly that the player is part of an interactive story, which arguably keeps players immersed in both the game and the narrative.

Complicity, as an aspect of narrative design, requires not only that the player's immersion is broken but that they engage in a moment of reflection on the events that have occurred. An example of direct complicity can be found in the original *God of War* (SIE Santa Monica Studio, 2005), a straightforward but viscerally-rewarding action game in which combat challenges and puzzle challenges are often aligned, such that the player must handle both at once. The game includes a puzzle in which Kratos, the game's anti-hero and only playable character, must burn a caged soldier alive in order to progress. There is no alternative solution, and no other way to continue playing the game, meaning that the crying, begging non-player character (NPC) must be sacrificed—in relatively gory, on-screen detail. Up to this point, the player-as-Kratos has killed hundreds of enemies, mostly monsters

and fantasy creatures that initiate combat with the player. This moment, in which a terrified, unwilling human must be painfully and arbitrarily killed, can give the player pause, particularly as this single death sits outside the context of strategic challenge or visceral enjoyment. That said, the soldier's death is a rare, arguably unique moment in *God of War*, and one that ultimately has little impact on the player's experience, as the game never returns to this theme.

The same cannot be said for *Spec Ops: The Line* (Yager Development, 2K Games, 2012), a squad-based third-person shooter that reimagines Joseph Conrad's *Heart of Darkness*, by way of Coppola's *Apocalypse Now*, in a contemporary version of the Middle East.¹¹ The game builds on a series of increasingly questionable decisions to subvert its ostensible "heroic American soldiers in the desert" narrative, unfortunately common to many other modern-day shooters. Unlike *God of War*, in which the player must make a questionable decision immediately, *Spec Ops: The Line* presents choices to the player with incorrect, ambiguous, or incomplete information, such that the player is pulled out of immersion not in the moment of decision, but in response to that decision's revealed consequences. One of the clearest examples is the "white phosphorous" mission, in which players must deploy a chemical weapon against enemy combatants, who are later revealed to have been forty-seven civilian refugees, including women and children. Ultimately, the developers of *Spec Ops: The Line* use escalating moments of complicity to ask their players to question the nature of heroism itself, particularly as it exists in wartime.

Similar structures exist at the end of *Braid* (Number None, Inc., 2008), in which the play-

er discovers they have been not the hero but the aggressor over the course of the game; the late-game revelations in *The Last of Us* (Naughty Dog, 2013) and *Shadow of the Colossus* (Team ICO, 2005) are also intended to cause players to question a morally ambiguous choice and the entire series of choices that led them there. A related concern for developers, particularly in the case of *Shadow of the Colossus*, is that some players focus on gameplay to the exclusion of narrative content, and therefore may overlook or ignore a game's subtler cues toward complicity. Regardless, when crafted with an eye toward intentionality, moments of complicity can be devastatingly effective as an emotional touchstone for the player.

To understand the spectrum of complicity in games, one must also understand how identity theory works in the context of game studies. Multiple models of identity are used consistently in both academic game studies and professional game development, from James Paul Gee's hierarchy of identity with its performative aspects to Matthias Worch's "identity bubble" in which player, character, and person must be in sync.¹² For the purposes of this article, suffice it to say that players must *relate* to the player character and be the player character simultaneously, and that this entanglement makes the question of who is responsible for each decision and its aftermath particularly fraught. There are decidedly complex layers of identity, agency, and performance involved, especially in the moment of immersive gameplay.

Ultimately, complicity depends on the moment in which a player steps back and considers the game, however briefly, as a fictional object. As a tool for designers, it affords a new way to express meaning in an interactive medium, par-

ticularly for narratively-focused games with mature, morally ambiguous content. Structurally, while complicity commonly depends on moral or ethical choice, it can be employed in the service of other themes, including the political, the philosophical, and even the spiritual. Most recently, two games, Playdead's *INSIDE* and Facepalm Games' *The Swapper* (2013), have used moments of complicity to explore questions of identity, otherness, and self. In a medium in which the player and the player-character are entangled, this is both a worthwhile ambition and a substantial challenge.

COMPLICITY, ETHICS, AND IDENTITY IN *THE SWAPPER*

Digital games can have a profound effect on players for many reasons, not the least of which is how completely they can put you in someone else's shoes. Science fiction can have a profound effect on audiences for a very different reason: if art is about exploring what it means to be human, then science fiction is one of the few narrative genres that can do so from outside humanity's perspective. Authors and creative practitioners constantly strive to conceive of worlds, cultures, and life forms that are fundamentally not human, often to shine a light on the complexities of human existence. Gary Wolf notes that science fiction provides audiences with "mythic reflections of themselves and their potential environments," and as a genre is uniquely suited to a technological society in that it explores "the mythic aspects of reason itself."¹³ It follows that science fiction digital games have great potential for artistic expression, particularly when dealing with human reasoning and the implications of new technologies.

The Swapper, originally developed by two students at the University of Helsinki, is clearly a work of science fiction, but one with overt references to Greek mythology. Early in the game, players are introduced to a ship named “The Theseus,” a doomed expedition named “Project Sisypheus,” and a group of potentially intelligent rocks dubbed “The Watchers” that communicate through vaguely philosophical questions about the nature of identity, humanity, and self. In the first few minutes, players gain control of the Swapper device, which allows you, the player, to create up to four clones of yourself, resulting in five total “selves” on screen at any given time. (It’s worth noting that, in writing about this game, the semantic difference between “me,” “you,” and “the player” is especially tricky.) These five bodies are simultaneously controlled, and move identically based on the inputs of the player’s controller, unless limited by the game environment. You can swap your consciousness—here represented by the clone on which the camera centers—between any of the five bodies, unless your line-of-sight is limited by the environment. The game only ends with “your” death if the clone you are currently embodying dies.

Very early on, players discover that clones must invariably be left behind or killed. Leaving a room causes non-embodied clones to dissolve, as does walking through the white lights serving as level markers. Clones that touch dissolve into each other, meaning that all five can be reconstituted into a single body with relative ease. Falling from too high a height will kill a clone, but consciousness can be swapped between clones in midair, meaning that you can cross large chasms or scale great heights—in essence, flying—by creating a clone high above yourself, swapping

into it, and repeating as necessary until you’ve reached whatever ledge or platform you want to reach, leaving a pile of broken bodies beneath you. This maneuver and others like it become second nature quite quickly. For players who might initially feel some guilt over the growing number of corpses, the game’s swapper mechanic lends itself to a simple justification: “That wasn’t me.” As the game remains ambiguous on whether each new clone constitutes a person, one can argue that dead clones were simply empty vessels rather than people, and go on killing them with impunity for the duration of the game.

The paradox of the Ship of Theseus, a thought experiment in classical metaphysics, is particularly apt here: in short, if every part of a physical thing is replaced over time, is it still fundamentally the original thing? Additionally, if the replaced parts are kept and gradually reconstituted into a second thing, which of those two things is now the “real” thing?¹⁴ To some, the paradox illustrates an argument between an object’s history and its physicality. In context of *The Swapper*, it may be better described as an argument between physicality and consciousness, in that by inhabiting multiple, presumably identical bodies, the player has almost certainly left their original body far behind, but is presumed to still be the same person by the game’s logic. Looking at the game’s references to Greek myth, one can pair the Ship of Theseus with the myth of Sisypheus—the man doomed to spend eternity trying and failing to roll a heavy rock to the top of a hill—and the game’s narrative thrust starts to take shape. Players must grapple with identity in that their history with the player character over the course of the game conflicts with the physicality of each abandoned or dissolved clone. The

constant tension of trying to get back to “you,” but not being sure which of your clones, if any, is the original, paired with the trial-by-death nature of many of the game’s puzzles, ensures that the player is constantly striving toward this impossible goal. The two myths are joined in the mechanical structure of the game, creating an increasingly uncomfortable narrative experience for the player.

In terms of complicity, players must choose to swap their consciousness multiple times, or else not play the game. Swapping is the core mechanic, after all, and arguably the main draw for many players. The relationship between player and player character is complicated by the swapping mechanic, such that our identity as the player is immediately entangled with the evolving identity or identities of the main character, which makes the game’s ending scene that much more impactful.

The last moments of *The Swapper* present a choice between identity and survival. Our intrepid explorer and her clones have escaped the doomed station and reached a rescue ship. Through an environmental contrivance, four of the clones have already been left behind, leaving the player embodying the last clone, which without the ability to swap feels less like one of five and more like “you.” The rescue ship is perched conveniently on the other side of a chasm, and its captain exits to inform you that, unfortunately, they have arrived without the proper decontamination equipment and you won’t be rescued after all. As the captain turns to reenter his ship, it is heavily implied through the game’s interface that, should you choose to do so, you can swap into the captain’s body and survive.

Observant players will have noticed by this

point that person-to-person swapping, rather than person-to-clone, is a fundamentally bad idea, as it either fries both brains or merges them to the point that “you” no longer exist, and likely now suffer from serious amnesia as well. Even unobservant players will have interacted recently with non-player characters that attempted a person-to-person swap, with dubious results. Either way, it’s clear that survival will require the destruction of your identity as a person. Alternatively, you can choose not to swap and remain yourself, at which point the ship will depart, and your only remaining choice—apart from turning the game off then and there—is to jump into the chasm. In other words: stay yourself and die, or sacrifice yourself and live.

In digital games, inspiring players to care deeply about their survival is a substantial challenge, particularly given the prevalence of save points, respawn systems, and a culture that expects a certain amount of trial and error. The developers of *The Swapper* have made an unusual choice in that, unlike the majority of games, the choice you make at the end of the game is effectively irrevocable. Whether you chose to swap into the captain or not, you can no longer revert to your most recent saved game, meaning that experiencing the other ending requires a second full playthrough of the game – or at least a few minutes of searching through internet videos. Regardless, the developers have made a concerted effort to present the final choice to the player as much as to the character, further complicating their already entangled identities.

This is a clear moment of complicity in that the player, presented with a direct choice, is pulled out of immersion and asked to reflect on the moment, and on the nature of identity, be-

fore making that choice. Unlike similar moments in which progression depends on choosing to take one specific action, such as sacrificing the doomed soldier in *God of War* or the final choice in *Shadow of the Colossus*, *The Swapper* presents two options and two consequences. By framing the last choice in the game around a question of identity, rather than as the beginning of an ethical slippery slope, *The Swapper* presents a narrative climax that is personal in its presentation, in that the player's own identity is fundamentally entangled with the player character's already fractious selves. Digital games are uniquely equipped to deal with these issues of identity because the interactive nature of the medium, particularly its interfaces of control, ensures that the player's own identity is inevitably caught up with that of the playable character. In the moment of sacrifice, following hours of immersive play, we can't help but conflate the character with ourselves, and the choice becomes a refer-

endum on our personal ideas about identity versus survival.

COMPLICITY AND CONTROL IN *INSIDE*

The aesthetics of *INSIDE* will be immediately familiar to anyone who has played Playdead Studio's first game, *Limbo* (2010). As in *Limbo*, players of *INSIDE* control a precisely animated, continuously imperiled little boy who runs, jumps, swings, and puzzles his way through moody black-and-white environments heavily reminiscent of German expressionist film. In retrospect, the similarly dark *Limbo* feels like a prototype for *INSIDE*, particularly in the second game's expansion on some of the first's core mechanics. Both games successfully inspire players to care about these vulnerable little boys, who are immediately subject to a variety of gruesome, painstakingly animated deaths.

Unlike *Limbo*, it quickly becomes apparent that *INSIDE* is principally a game about control,

INSIDE, 2016. Image courtesy of Playdead.





INSIDE, 2016. Image courtesy of Playdead.

both as it relates to the game's narrative theming and the interactive relationship between the player and the game's few playable characters, many of which are controlled indirectly. A number of early scenes are narratively ambiguous but thematically clear on this point: a seemingly dead pig attacks, but only until a wriggling worm is removed from its body; baby chicks flock after the player for unclear reasons until fed into a benign wind-blowing machine; some humans move under their own impetus, while others stumble zombie-like under a set of ambiguous orders. An early puzzle requires the player match the small boy's movements to a line of zombified humans in order to escape detection by the real humans and their children, who are apparently inspecting them.

It doesn't take long to discover a headpiece with a yellow light that, when attached to the boy's head, allows you to control multiple zom-

bie-like humans in order to solve puzzles. As in *The Swapper*, zombified humans move identically to the boy, unless hindered by environmental obstacles. Unlike *The Swapper*'s clones, the zombies in *INSIDE* seem to have minimal personalities in their animations, and maintain a strong attachment to the boy himself. They crowd painfully close around the boy any time he stops moving, and a cluster of hands and arms lift or toss him upwards when he needs to reach items and ledges. Mechanically, this structure of control evolves in complexity over the course of the game, such that a later puzzle requires you to collect twenty zombified humans to open a door, one of which is a literal corpse that must be dragged to the exit. A particularly noteworthy puzzle requires you to use humans that are missing arms, legs, heads, or are otherwise malformed, as if they are products of experiments gone wrong. In these moments, players should

start to feel uncomfortable with what they are forcing the small boy and his unwitting companions to do in order to keep playing the game. The brief moments of respite between puzzles, built in as mental breathing room for the player, also allow for these moments of reflection and concern.

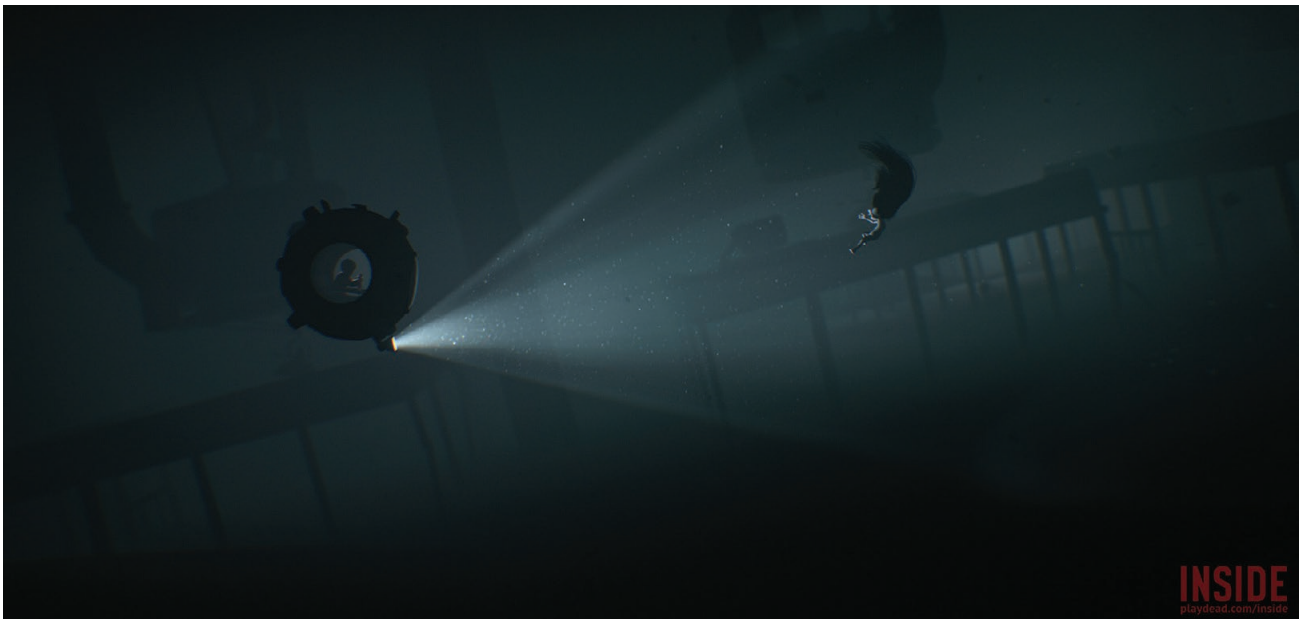
The last section of the game, in a moment that invokes decades of body horror cinema, begins once the boy has reached a large water tank surrounded by human observers who are, for once, uninterested in killing, neutralizing, or otherwise devoting any attention to the boy.¹⁵ At the center of the tank, constrained by four control headpieces, is an amorphous blob of humanoid flesh, arms, and legs. In the absence of any other possible interactions, the boy removes the four devices and is seamlessly absorbed into the fleshy mass, at which point control of the mass is given to the player. The transition is handled quickly and skillfully enough to allay any potential shock players might feel upon becoming this horrific, if beautifully animated, thing, not

to mention the bizarreness of the situation.

What follows is a surprisingly raucous, even joyous, romp through the facility with the mass, destroying furniture, windows, and walls; scattering and potentially killing humans in your way; and searching for some means of escape. While most of the remaining humans run, hide, or attempt to recapture you, a few actually help you along your way, until you break out of the facility, roll down one last hill, and come to rest on a grassy overlook. The game ends with the fleshy mass resting, exhausted, in a field of gently waving grass as the sun rises quietly over the sea—an astounding, jarring image, but one well earned by the events of the game.

Even in this cathartic moment, the issue of control between player, character, and narrative world, is pervasive. Given *INSIDE*'s consistent ambiguity, even the most attentive player won't be quite sure who has done exactly what to whom, and for what purpose, even after the credits have rolled. The boy is initially presented

INSIDE, 2016. Image courtesy of Playdead.



as imperiled and defenseless, and one can argue that we are naturally predisposed to feel sympathetic toward the character we control. The flesh mass, however, is monstrous and off-putting, more akin to the demons, mutants, and genetic experiments gone wrong that appear as enemies in countless other digital games. *INSIDE* presents the mass as sympathetic also, despite the boy's fate, both by giving the player immediate control and by the circumstances and aesthetics of its escape. At no point is the history of the mass, the boy, the facility, the zombified humans, or their relationship to each other made explicit, leaving the player to draw substantial conclusions based on the game's atmosphere and its structures of control.

In terms of complicity, the ethics of the situation are deliberately unclear, although one can argue that liberating the flesh mass from the facility is at least a good thing for the flesh mass. Contextually, it's unclear if the boy was originally part of the flesh mass and wants to return to it, or is being called to it for some other reason, or is a fully-aware, non-zombified human that is ultimately sacrificed, or chooses to be sacrificed, to it. It is abundantly clear that the player's role in controlling the boy gets him there. While we as players identify first with the boy and then with the mass, once one has been absorbed without choice or control into the other, questions of player-character identity abound. Complicating matters, there exists a "secret ending" in which, if a certain number of devices have been found and deactivated, the boy can be directed to an underground facility in which something that looks suspiciously like a master control headpiece can be deactivated as well. If the player chooses to do this, the last image of the game

is the boy slumping to the ground, much like the zombified humans do when control is relinquished by the player.

Playdead Studios has used a fundamentally interactive medium to raise substantive questions about the nature of control. The player must engage with the game, as with any piece of interactive art, to understand it, and the quality of that engagement necessarily involves the player in the morally ambiguous choices that follow. As a purely narrative experience, *INSIDE* may be somewhat inaccessible to many players, due to its more cryptic qualities. As an artistic expression, however, its impact cannot be ignored, in that even the most mechanically-focused players will certainly have questions by the game's end. The discomfort that the game's mechanics and setting gradually develop, paired with the shock value of the last twenty minutes of gameplay and the jarring image of the flesh mass resting peacefully on a grassy overlook, encourages questions of control, identity, and how much the player is responsible for the bizarrely moving things that have taken place.

WHY COMPLICITY MATTERS

Amid discussions about identity theory and ambiguous moral choice, it is easy to overlook that both *INSIDE* and *The Swapper* are fun. In the moment of play, they present thought-provoking puzzles, satisfying feedback, and the pleasure of overcoming increasingly challenging obstacles within complex, detailed, and aesthetically unique worlds. By the judgment of most game critics and reviewers, as well as the overall gaming community, both are generally considered to meet the standards of good games—meaning that they are more likely to be played, finished,



INSIDE, 2016. Image courtesy of Playdead.

and considered by a wider audience.¹⁶ Designers and critics of digital games must reconcile the more enjoyable aspects of their medium with the seriousness of their themes, a conversation that has been ongoing in development and academic circles.

INSIDE and *The Swapper* depend on interactive play to explore identity and control, and both successfully cause the player, through their choices, to become complicit in those explorations. In other words, the audience isn't observing a character making a difficult choice or regretting an action, but is coerced into taking those actions, directly or indirectly, and subsequently experiencing the consequences. In both cases, the player's immersion in the game environment, as well as their perceived control over the environment, characters, and experience, are important parts of the experience. In her essay on positive discomfort in *Spec Ops: The Line*, researcher Kristine Jørgensen notes that "the game oversteps the sense of safety created by detach-

ment, but by positioning the player as somehow responsible, the sense of safety connected to the fact that this is "play" also threatens to break."¹⁷ She also stresses that her study focuses on a game that is narratively subversive, and therefore most useful for "understanding situations where emotional drama in games is appreciated." Both *INSIDE* and *The Swapper* may be described in the same terms, presenting situations and structures in which a player, understanding the single-player game experience to be at least partially fictional, gradually becomes uncomfortable with the responsibility felt towards the characters and events that unfold through their actions, and is therefore open to a richer, more complex experience than might otherwise be possible in a non-interactive medium.

In the simplest of terms, complicity matters because it is a tool for creating powerful narrative experiences that are potentially unique to digital games. A better understanding of how complicity, identity, and immersion intertwine to

create these experiences for players will help artists and designers take one more step forward in understanding, utilizing, and ultimately pushing the boundaries of this constantly evolving medium. ➔

Bio

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Eddie Lohmeyer, *Super Metroid: Nightmare Edition* installation view, 2016. Image courtesy Eddie Lohmeyer.

“Please *Do* Touch (and Disrupt) the Art”: Glitch-Kinesthetics and Spectator Agency in *Super Metroid: Nightmare Edition*

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Abstract

This essay explores theoretical approaches to my recent video game art installation *Super Metroid: Nightmare Edition*, exhibited at the Visual Arts Exchange in Raleigh, NC. The installation permits patrons to interfere with a player’s experience of *Super Metroid* (Nintendo, 1994) by touching sculptural objects and disrupting technical attributes, such as game speed and sprite layers. Through this work, I propose an avant-garde strategy in video game art called glitch-kinesthetics, a technique of collage that resituates the glitch as a machine error generated from the spectator’s agential presence and re-materialization

through haptic interaction with the player, whose skills are decentered through the unfolding of play.

INTRODUCTION

Super Metroid: Nightmare Edition (SM: NE) is a recent installation in a continuing series of video game art exploring sensory and political reconfigurations of the body at play through hacks and modifications to game controllers and peripherals. Unlike my previous works involving remapping game controls to “readymade” sculptural objects through haptic feedback, *SM: NE* allows onlookers to interfere with a player’s experience of the Super Nintendo game *Super Metroid* (Nintendo, 1994) by touching sculptural objects that manipulate technical attributes of the game: game speed, background and sprite layers, and transparency levels. Through these dynamics, I explore the ways in which spatial and social dimensions of play unfold from a de-centering of the player by affording spectators an agential presence in the ability to technically disrupt the game in real time. I address the political stakes for a co-situated interaction between onlookers and player and the undermining (or conversely, facilitating) of play to deconstruct conventional understandings of expert play, particularly a primary player’s mastery, gratification, and affective flow within a game.

As a gaming intervention, *SM: NE* offers one political avenue for game art in the contemporary avant-garde through *glitch-kinesthetics*, an expanded technique of collage comprising the human and non-human assemblage of gaming bodies at work in an ecology of play through glitch and participatory aesthetic practices. Glitch-kinesthetics provide a way to think about glitch as a type of machine error—the generation of noise within the system placing the game in a non-normative, compromised state—produced

through an imbrication between the machine’s current gamestate and the spectator’s exploration of sculptural interfaces through touch. Glitch-kinesthetics reframes glitch as a co-constituted relationship between bodies and system: the re-materialization of the spectator and their haptic interaction with the player subject, one whose skills and expertise are decentered through the unfolding of play. In rematerializing the agency and embodied presence of “non-players,” I employ *SM: NE* to consider how glitch-kinesthetics transform player and game into a space of play in which the spectator’s gamic actions take place within a continually evolving field of heterogeneous gaming bodies: found objects, sensors, player, onlookers, and gaming apparatus. This production of glitch within the social field and the agential re-positioning of non-players allows us to consider the broader political and formal stakes of art modding in relation to the aesthetic experience of an onlooker who is co-situated with the player and gives us one potential direction for video game art in current discourses of the avant-garde. An exploration of glitch-kinesthetics through this artistic intervention also places a critical focus on the embodied actions of the spectator, which has received limited attention in game studies.

SM: NE AND ART MODDING

I place *SM: NE* within the tradition of game art that John Sharp describes as the appropriation and repurposing of game artifacts, iconography, cultural tropes, or material techniques, often through subversive tactics.¹ Matteo Bittani elaborates on this definition by defining art modifications (“modding”) as an aesthetic practice in



Fig. 1. Eddie Lohmeyer, *Super Metroid: Nightmare Edition* installation view, 2016. Image courtesy Eddie Lohmeyer.

which artists hack existing software to deconstruct their entertainment value and to intentionally affirm non-normative modes of play. Modding often produces unplayability while simultaneously foregrounding the formal abstraction of glitches generated by disrupting normal system operations. Art modding begins with and reuses the technical and material affordances of video game media—game engines, software, hardware, peripherals, interface, maps, source code—for formal and political avant-garde strategies.² Art modifications are parasitic in nature, to borrow curator Anne-Marie Schleiner's term; they stem from conventional game technologies but re-contextualize them as radical aesthetic confrontations with players and participants.³

As a site-specific art mod upending technical aspects of gameplay to generate a specific mode of glitch aesthetics, *SM: NE* parasitically appropriates not only software, but also the tropes associated with hardcore and competitive gaming.

First shown at a pop-up arcade at Kings in Raleigh, NC, and then at the Visual Arts Exchange in Raleigh, the *SM: NE* installation demands the player stand before a television monitor to play an emulated ROM of *Super Metroid* using an original Super Nintendo game controller (Fig. 1).⁴ On either side of the player are two gallery pedestals with sculptural assemblages of found objects stereotypically associated with competitive gaming culture: a small pizza, empty cans of energy drinks, preserved bowls of Cheetos and Doritos, pill bottles of stims, as well as an Xbox 360 controller broken in a fit of rage-quitting (Fig. 2). Each sculpture has been coated in a Warholesque, Pop Art-inspired Cadmium red conductive paint and attached with hook-up wire to a microcontroller with sensor electrodes programmed for capacitive touch. The microcontroller has been programmed for increased sensitivity to pressure when spectators touch a sculpture; however, only one sculptural input



Fig. 2. Detail of damaged controller, Eddie Lohmeyer, *Super Metroid: Nightmare Edition*, 2016. Image courtesy Eddie Lohmeyer.

can be activated at a given time. Still, increased sensitivity to touch produces an intended erratic response among different control inputs. As the spectator touches individual sculptures in rapid succession, they can quickly activate and deactivate certain technical parameters during run-time. When touched, each sculpture controls a specific quality of the ROM's technical performance. While viewers watch the player preoccupied with *Super Metroid* emulator, they may choose to touch the sculptures and increase or decrease game speed, remove background layers, or remove the game's protagonist, Samus Aran, entirely from view. There are no cues indicating which sculpture disrupts which technical parameters of the game; however, with practice, an active spectator can learn to manipulate the sculptures to intentionally hinder (or facilitate) the primary player's experience.

I chose to appropriate *Super Metroid* for a couple of reasons, many extending from my own sense of nostalgia. Not only did I grow up

playing the game, but I remember first being introduced to *Super Metroid* at a friend's house by watching him play and eventually beat the game. I was fascinated by his mastery of the game's power-ups, when and how to use Samus' mechanized skills and weapons to beat bosses, and quickly advance through levels. Much like many early side-scrolling action shooters, it is a game in which player success and gratification are grounded in precision movement, aim, timing, and, perhaps, some luck. It is no surprise that the game has become quite popular in speedrunning communities over the years.

SPECTATORSHIP IN GAME STUDIES

As mentioned, scholarship in game studies rarely focuses on the agential and embodied work of spectators. Holin Lin and Chuen-Tsai Sun have examined how the situational presence and skill level of onlookers—their status as experts, apprentice gamers, or newbies—configure social interactions among players in Taipei's *Dance*,

Dance Revolution arcade scene through subtle gestures such as the placement of token bags and in-game song choices.⁵ Similarly, Nick Taylor's work observes the embodied actions of spectators at e-sport tournaments, particularly the way affective labor among circles of competitive players—sharing strategies, giving encouragement, talking trash—develops meaning within an economy of established audiences in the industry.⁶

Focusing on the agency of onlookers or “secondary-players,” James Newman suggests that a player does not need to control the game to gain a level of ergodic pleasure from acts of play. For instance, an onlooker might assist the primary player controlling the game by giving them advice or warnings, helping them figure out in-game tasks, or acting as an extra pair of eyes to attentively scan the game environment for clues or objects.⁷ Like Newman's concept of a secondary-player, *SM: NE* considers the significance of a spectator's agency within the space of play. Spectators are co-situated with a primary-player, yet their agency is rematerialized through haptic interaction with the technical parameters of the game.

In this sense, I was curious to see how spectators would choose to interfere with the precision gameplay in *Super Metroid*, which is often dependent on power-ups. The installation itself does not necessarily require a player or onlooker to have previous experience with *Super Metroid*. Instead, it presupposes a heterogeneous field of gaming subjects: those with *Super Metroid* experience who possess a given technicity toward early platformers or side-scrolling shooters, or spectators with little to no experience with games who might find more interest

in spontaneously exploring what each sculpture does when activated. Would someone assist the player by slowing down gameplay and allowing Samus to direct her plasma beam at a boss enemy? Would they use her grapple beam to swing across open sections of a level? Or would a spectator playfully work against the player by speeding up the game when Samus uses her morph ball or hi-jump boots to avoid enemy fire? *Super Metroid* is a game in which fun (and conversely, frustration) derives from the freneticism of play, controlling Samus as she frantically fires high-powered weapons or uses power-up abilities to avoid fire. I was curious as to how spectators would respond to this in-game chaos when given a rematerialized position of agency through technologies altering gameplay in real time.

Samuel Tobin's recent work on the social operations of the American video arcade during the 1980s also turns a critical eye to the activity of non-players, or what he calls “hangers.”⁸ For Tobin, the hanger is an individual in the arcade who is transient in nature: they may play a few cabinets, watch others play, loiter inconspicuously to avoid the watchful eye of arcade workers, or simply cruise the arcade floor looking for new machines or other players to join. Tobin describes these dynamic characters as “...hangers-on, and hanging-out, but also lurkers, lingerers, wallflowers, delinquents, and most of all loiterers. Hanging also describes a relation to things that is contingent, dependent but still essentially autonomous. What hangs on something is shaped by it but only temporarily.”⁹ Thus, the hanger is materialized in a coming together with other bodies in the social space of the arcade, notably players, but also staff members on the patrol for suspicious activity.

Unlike Tobin's hanger character, the non-player is activated within the *SM: NE* gamespace through their co-constituency with an active player. I see this co-constituency as framing the spectator as a political subject who, through the aesthetic practice of glitch kinesthetics, participates in new embodied modes of play. The subjectivity organized in *Super Metroid: Nightmare Edition* is one in which the active spectator is aesthetically and politically bounded by what Jacques Rancière refers to as "the distribution of the sensible."¹⁰ To Rancière, the distribution of the sensible describes the system of societal rules and laws constituting sensory perception and shape the conditions of possibility for what can be seen or said, or what is possible to do or make. It delimits what can be perceived and sensed, divided into specific perceptual regimes delineating who is included and excluded in forms of sensory experience within society.¹¹ Rancière argues that this distribution of the sensible produces the possibility for common experience, yet at the same time partitions experience through the circulation of temporalities, spaces, and movements arbitrating ways in which groups or individuals participate in modes of sensation and perception.¹² Within this political distribution, Rancière relates aesthetics to a specific sensory regime of experience produced through a relationship among artistic production and the modes of visibility they generate, as well as the possibilities for thinking through the connections between making, doing, and seeing.¹³ The articulation of politics to aesthetics does not describe a type of radical politics through a particular aesthetic practice, but instead examines the participatory roles a population may take up within a work of art. Rancière's

definition of a political-aesthetic subject allows us to think about the ways that the technical and material dimensions of *SM: NE*—sensors, micro-controller, haptic interfaces, emulator—generate new possibilities for the spectator to participate in an aesthetic experience of play. As I argue, this political subjectivity of onlookers results from a decentering of a single player's expertise of *Super Metroid* by interacting with the sculptures. The sculptures provide a spectrum of potential methods by which a spectator can interact with a primary player and offset their gaming experience; through this process, political subjectivities are produced. As I've mentioned, a spectator might spontaneously touch the sculptural interfaces, sending the game into a critical, abnormal state, or in a more experiential and controlled approach may opt to, for instance, guide the player through a particularly difficult boss battle by intentionally slowing down the game speed, allowing the player to better avoid enemy fire. The non-player is transformed from passive bystander to *active* spectator, who through glitch-kinesthetics alters the technical aspects of play in unison with a player's performance.

GLITCH-KINESTHETICS AS COLLAGE

I define glitch as the generation of a machine error forcing the game into a non-normative state of disruption. Olga Goriunova and Alexei Shulgin suggest that a software glitch is the unpredictable rupture in a system's normal operations; it is "when *something obviously goes wrong*."¹⁴ Glitch is a singular event of disruption, giving us a look at the internal, material structure of the system; in this moment of disorder the system unveils what Goriunova and Shulgin call "the ghostly conventionality of the forms by which digital

spaces are organized.”¹⁵ In his discussion of both machine and player video game actions, Alexander Galloway examines what he calls “non-diegetic machine acts,” or processes performed by the machine that are integral to the experience of play but not included within the gameworld itself.¹⁶ These actions can be power-ups, stats, and goals expressed, but also crashes, glitches, or freezes. He refers to these as “disabling acts,” where the system impinges upon the game world in a destructive process.¹⁷ Galloway examines certain disabling acts in the context of what he calls “counter-gaming,” an avant-garde strategy of subverting gameplay using software mods and hacks to undermine normative operations of play.¹⁸ This often includes modifying the mechanics and rules of play to politically reshape the player’s expectations and disrupt the flow of play as designed by the developer. Rosa Menkman also discusses glitch as an unpredictable event through the production of noise artifacts, the result of a technical interruption to the system or internal errors in feedback and encoding/decoding processes. Menkman points out that noise is often an unwanted element in technical systems. Yet, she suggests that we can consider these disruptions in transmission as a positive result, producing creative possibilities, or what she calls a “destructive generativity.”¹⁹ This could be the creation of new technical patterns and algorithmic possibilities making the inner workings of the system transparent.

In the case of *SM: NE*, the destructive generativity of glitch and the combination of errors the interactive sculptures offer—changing game speeds, removal of layers—arises experientially and aleatorically through the social dynamics of watching someone play. The individual strolls into the gallery space and is confronted by sculp-

tural interfaces that prompt a series of questions regarding their relationship to the game: *Can I touch the art? What happens when I do touch the art? What is happening to the game when I gently prod a bowl of Cheetos or smashed controller?* The non-playing spectator is re-politicized through haptic feedback, co-situated with the player in an embodied act of play. In this way, the experience of the player controlling Super Metroid within the gallery becomes the site upon which the non-players’ touch is inscribed and through which glitch is generated.

Art modders often employ glitch aesthetics to foreground the materiality of the system and reveal otherwise invisible processes of the game’s inner operations. For instance, artist duo JODI’s art mod *Ctrl-Space* (1996) consists of a hacked version of the first-person shooter *Quake* (id Software, 1996), in which software code has been altered to reduce the game world to black and white noise reminiscent of a distorted TV signal continually undulating with the player’s navigation. The mod is designed so the player has no weapons or visibility. The only diegetic cues left intact are in-game sound effects. JODI’s game is unplayable from the standpoint of conventional gaming practice, making apparent the formal abstraction of glitch. In my own work, glitch is the result of the unpredictability of these interruptions to the system as they unfold with spectator interaction which occurs when they touch a sculpture to see what aspect of gameplay it disturbs. *SM: NE* is thrust into a series of critical game states when the spectator introduces certain errors—flashing sprite and game layers, variable game speeds—by touching sensor points on the sculptures. I interpret the participatory aspect of glitch-kinesthetics as an aesthetic strategy of collage. Here, I define collage as the

organized, holistic assemblage of seemingly disparate fragments that generates often allegorical, and at times politically radical meaning through material construction. In contrast to traditional art historical definitions of collage describing pasting fragments of readymade objects onto a surface, I consider collage a rhizomatic process, a grouping of heterogeneous bodies through which political meaning is constructed; collage is the inclusion of the spectator's body in the discourse of minimalist sculpture from the 1960s to 80s. The aesthetic constraints defining minimalist sculpture are explored through contemporary avenues of video game art through participatory interaction with the spatial dynamics of gameplay. Hal Foster argues that minimalist sculpture presented a crucial paradigmatic shift toward postmodern modes of reception through the inclusion of the spectator in the space of the work.²⁰ Thus, minimalist sculpture defined itself against late modernist work that stood separated from the viewer, redefining sculptural spatiality; the space of minimalist sculpture and the body's movement through this space becomes its fundamental aesthetic component. As Foster argues, minimalism shifts the epistemological nature of artistic reception to "the perceptual conditions and conventional limits of art more than on its formal essence and categorical being" and the ways it produces a new type of formal autonomy of artistic practice.²¹ *SM: NE* draws from these concepts of collage and minimalist aesthetic: the spatial experience of play within the gallery through the grouping of players, spectators, and sculptures—the way in which the sensible is distributed within the space, to borrow Rancière's term—produces collage within a social field in which new political subjectivities can participate.

Interpreting *SM: NE* through this definition of collage also suggests the neo-avant-garde tradition of appropriating mass commodities and re-arranging them to destabilize and dismantle their commercial value. A bright red bowl of Cheetos is no longer an edible snack for a gamer who has stayed up all night, but is instead a haptic gateway for offsetting the technical parameters of a video game. Here glitch functions as a type of collage in which the artist arranges discrete units of a computational system to interfere with its formal and technical expectations at the level of bytes and pixels. In this way, the glitch patterns in *Super Metroid: Nightmare Edition* also reference the pop-aesthetic collages of neo-avant-garde artists like Robert Rauschenberg. Rauschenberg's combine paintings, composed of found commercial objects and strokes of paint, challenged the viewer through a creative deconstruction of post-war America's commodified urban landscape. Branden Joseph argues that Rauschenberg's use of collage—appropriating commercial images from the spectacle of American consumerism and combining them with painted surfaces—produces *difference* as a positive force. Joseph defines the concept of difference through the philosophy of Gilles Deleuze and his criticism of representation; for Deleuze, difference is traditionally understood as a thing's identity, appearance, and relationship to similar things in the world, or how objects are categorized and discursively framed based on their "sameness" compared to the organization of other objects. To consider difference through an object's sameness denies the possibility of its uniqueness. Instead, Deleuze asks us to consider difference through what he calls "difference-in-itself," an affirmation of a thing, concept, event, or perception, and the individual singularities

composing it.²²

Rauschenberg's combines introduce the viewer to difference as an experience dissociating them from concrete, habitual understandings of social reality predicated on commodification and mass conformity. As Joseph points out, Rauschenberg's work achieves this affirmative sense of difference through the continuous multiplicities emerging from his seemingly random arrangements.²³ In Rauschenberg's combines, difference emerges from the *instability* of his arrangements; the lack of a coherent, signifying complex between image and language creates a sensory-perceptual disordering. To Joseph, meaning arises from the instability of collage; the combines open signifying fragments to something beyond signification, difference outside of visual signifiers lacking a stable form.²⁴

In *SM: NE*, collage operates through the appropriation of a commercial video game via the commodity aesthetic of a major entertainment industry, transforming the experience of gaming into an affirmative, non-signification through the anxiety-inducing instability of glitch. Much like Rauschenberg's combines, we are confronted with a sense of affirmative difference through in-game signifiers that are disrupted to take on an asignifying presence in the way activity from non-players is inscribed onto the space of play. It is the random arrangements of recognizable gamer commodities that, when touched, activate glitch patterns and deconstruct audience expectations of the standard gamer's conformity to normal play. When players touch these sculptures, glitch-kinesthetics emerge as a collage of familiar in-game cues —Samus, weapons, power-ups, mechanics, backgrounds—with the procedurally-generated noise of the non-diegetic

operations of the system glitched-out by onlookers. The assemblage of appropriated gaming commodities and the “something apparently wrong” of the game provide multiple potential meanings that were never realized in their previously stable relation to one another.

KINESTHESIA AND PARTICIPATORY AESTHETICS

Certainly, glitch is one aspect of *SM: NE*, but what describes the “kinesthetic” component of the work? I use the word “kinesthetic” to indicate the haptic investment of the spectator who is invited to explore the possibilities of glitching out gameplay through the motor capacities of the body. Kinesthesia describes the muscles and tendons of the body feeling weight and pressure through the nerve endings of the hands as they touch an object. Seth Giddings and Helen Kennedy suggest that kinesthesia in gameplay relates to the early 18th century concept of aesthetics as *aesthesis*, or sensory experience as an imbrication of both cognition and corporeal feedback from the body. In this way, kinesthetic pleasure derived from gameplay is the result of a “recombinatory aesthesis,” emerging from the interaction between game system and players, or non-players.²⁵ We might consider a kinesthetic response the affective sensation of touching a control peripheral and producing in-game mechanics and physics empathically reciprocated within the body. When onlookers touch the sculptures in the installation, the weight felt by their nerves is transduced into potential spontaneous glitch patterns onscreen, especially if multiple sculptures are touched at the same time. In *SM: NE*, glitch-kinesthetics refers specifically to collage in which the participation of players and

spectators produce the spatial dynamics of play through an affirmative conception of difference that introduces new modes of interaction to the social field of the gallery.

This relationality between player, spectators, sculpture, and system refers to what Claire Bishop calls *participatory art*.²⁶ This type of aesthetic practice throughout the 20th century has taken the form of social interventions, educational projects, and installations. To Bishop, participatory art goes beyond interpersonal interaction between two people and certain interventionist protest actions we often see in the mass media. In participatory aesthetics, people *are* the artistic medium, much like the inclusion of spectatorial perceptual experience within the space of minimalist sculpture. The artist is not the sole creator, but rather an instigator of events in which the audience collaborates as equals. This disrupts the conventional understanding of art in a capitalist economy in which art is a commodity: a stable, tangible object.²⁷ The social turn toward participation emerging from neo avant-garde movements suggests participatory action does not produce commodities for the art market or institution, but instead produces social change through a type of “symbolic capital.”²⁸ It essentially carries out a specific mission of the historical avant-garde to integrate art into the praxis of everyday life, carrying out an affirmative deconstruction of the institutional status of the work through the reframing of participants as the work itself.

How does this participatory aesthetic relate to video games? Historically, participatory art has its roots in avant-garde concepts of play, introducing people to often whimsical and unexpected situations. For example, the Dadaists of

the early 20th century often produced situations that prompted people to “play” and interact with artists. The Dada Season of Spring 1921, a series of experimental participatory events taking place in public spaces in Paris, underlined the Dadaist project of negating the bourgeois autonomy of art and pushed aesthetic experience into the social sphere. Artists such as André Breton and Tristan Tzara produced fliers with nonsense slogans inviting the public on guided tours, absurdist “excursions” not of historically significant sites, but instead as a conceit for introducing the public to nonsensical situations. At the end of each tour, participants were given “parting gifts”: envelopes with word play, scraps of cloth, defaced money, and erotic drawings. As these tours progressed, people began to playfully (and occasionally violently) interact with the artists, at times playing musical instruments to drown out the tour or throwing eggs, cabbages, and other food items at the guides. The audience became the very medium through which the anarchic manifesto of the Dadaists was actualized. [29] Like the playful excursions of the Dadaists, video games are a social event predicated on playful interactions. They require not only the participation of a player (or multiple players), but often include someone watching the player’s skills and mastery of the game. The player reacts to the presence of spectators, just as spectators are equally responsive to fluctuations of a player’s abilities. Spectator and player are co-dependent, and social interactions continually re-emerge through dynamic relationships during play.

In *SM: NE*, glitch-kinesthetics as a process of collage resembles an active, embodied participation through what Seth Giddings has called

microethology in gameplay. [30] Drawing from Deleuze and the concept of *ethology*—the study of animal behavior and the affective capacities of animals within their ecosystems—Giddings proposes microethology as a means to observe gameplay, defined as a play event in which bodies at work on each other (human players, technologies, observers, in-game objects, characters, and forces) constitute an assemblage through which the dynamic structures of play are unveiled. In a microethology of play, the material and aesthetic dimensions of embodied interaction, affect, and machinic circuits of feedback emerge through the relation of heterogeneous bodies.³¹ In *SM: NE*, collage is a participatory aesthetic, manifest as a microethology of players, spectators, sculptures, electrodes, ROM, Samus, Hyper Beam, and so forth. To expand Giddings' concept, I propose that a microethology is both a way to study and document acts of play, but is also an already-existing material assemblage in the world, simultaneously an active intervention and perceptual-sensory event.

In my work, a microethology unfolds between human and non-human agents, producing variations of gameplay through glitch that positions spectator, player, and machines as co-constitutive. The body of the spectator is politically repositioned to take on an active, embodied role in the success, ruin, enjoyment, or frustration of the player through experiential chance encounters with the sculptural interfaces. Through this emergent play, a very skilled player attempting a speedrun could easily have their attempts botched by audience members exploring glitch patterns enacted by the sculptures. A player with no experience with *Super Metroid* may be given assistance by a cooperative gallery-goer

who has intuitively figured out how to control game speed, slowing down gameplay during a particularly hectic boss battle. Most importantly, a consideration of glitch-kinesthetics shakes up the social construct of the lone gaming subject who showcases her mastery and expertise to a passive audience; collaboration (or opposition) among players and watchers is a co-situated process that occurs at the level of machine operations.

SM: NE explores the emergent possibilities of play when the spectator is politically re-centered and rematerialized through a collaborative interaction with a primary player. Glitch-kinesthetics as an aesthetic strategy foregrounds these emergent variations through what I see as a potentially significant trajectory for contemporary video game art within the cultural imagination of play.



Bio

Eddie Lohmeyer is an artist and PhD student in the Communication, Rhetoric, and Digital Media program at North Carolina State University. His work explores the intersections between affect theory, animation, and histories and theories of the avant-garde. His YouTube channel, including videos of *Super Metroid: Nightmare Edition*, can be found at: <https://youtu.be/WZ7ija2EPPM>.

Notes

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The Enemy Of Expression: Production Notes on the Simulation of an Endless Place

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Video games, past and present, simulate freedom like a hall of mirrors simulates infinity. Reaching beyond the mirror, while perhaps an empowering gesture of player-agency, breaks the illusion, shattering the developer's intentions. This is not to say we should shy away from probing at the edges of an experience, but to suggest that, as thoughtful players, we can evaluate the diegetic worth of a game or game-like experience in its dealings with freedom—not in the easy binary of achievement, but through the much more nuanced avenue of negotiation. Can an interaction make its limitations valuable to a player through context?

In the future, we may see human experiential freedom redefined through games. Algorithmic art and procedurally-generated content may well render the following words obsolete. I hope they do. But for now, we should be wary of games boasting the infinite: infinity is a promise on which we cannot yet technologically deliver. We do not come to a hall of mirrors truly believing in the glimpses of an unending space—we go to find ourselves, reflected, multiplied, and changed in limitation. A successful game will teach players how to appreciate a defined space and contextualize the value of player agency through that constriction. This is what the video game world is beginning to learn from the history of art and communication.

Let us back up for a second and talk about what art is, but from a communication theory

perspective. In 1948, mathematician Claude Shannon proposed a clinical way to explore the sending and receiving of information, and it's from his model that I adapt the following: at its most basic level, communication is the ability of an expresser to encode an idea into a transmissible medium, send it, and have it be viably decoded by the receiver.¹ This is how most language works: I think of a dog, I say the word "dog," you hear the word "dog," and think of a dog. Our two mental-image dogs may be different breeds, but it still allows for the game of language to continue. Communication is just lo-fi telepathy—putting into your head what was once in mine. It is when the expresser wants to send something difficult, something that does not fit discreetly into easy language, that art happens. The conveying medium, as a technology, imposes constraints on the authorial idea, requiring it to be formatted for distribution. Paintings have frames, songs have beginnings and endings, and statues obey physical laws. A thoughtful artist does not seek to obliterate these constraints, but sees the medium as an unavoidable collaborator.

A modern game is a series of compromises—some are implemented as the developer's ideas become encoded into the experience, and some are byproducts of the medium itself. No matter how open the world might seem or how many endings a game's narrative boasts, there are always boundaries keeping players on track, the

platform's memory from bleeding, and the experience centered on the author's original parameters.

The psychologist Barry Schwartz suggests we are now plagued by a freedom of choice.² In his TED Talk "The Paradox of Choice" he posits that while a fish in a fishbowl may be constrained, to smash the fishbowl would be to suffocate the fish. The lens of agent-inability allows us to recognize agency when we have it by offering us opportunities to contemplate scenarios where we do not. In gaming, the pursuit of a valuable experience must be developed through the inexact language of limitation. If I can do anything in a game, then of what value is the game itself?

As gaming technology evolves, it will become easier to simulate more and more player freedom—to offer more choices and to have them resolve faster and faster. The day is coming where players may literally be able to do almost anything in-game. As developers, we should take a hard look at what this genuinely offers. The Dictionary may contain all the words, but it is hardly an interesting read. Specificity makes for value. This is the biggest lesson gaming can learn from the arts: scarcity and imperfection allow for a more meaningful user experience than vast, unending artificial possibility. Don't just make it big: make it specific.

Every semester, I see my video game students motivated by the desire to remake the infinite and it's always born of an altruistic spirit. What greater gift can a designer give to a player than freedom? But over the years, I have begun to see this pursuit as a cop-out. A game with an infinite landscape doesn't have to have any landmarks. The developer can hide behind procedural generation and emergent gameplay. They

don't have to offer anything of themselves in the process. Art demands a sacrifice. It requires the imperfections of the medium (and dare we say of the artist) to be made public. Designing complete freedom denies the user a chance to engage in specific dialogue with the game, and denies the designer an opportunity to provide it.

The future of gaming and game-like art may well be an endless virtual space. One just hopes that we will have bumped into enough walls before we get there to truly appreciate it. ➔

Bio

Evan Meaney is an artist, writer, and developer who teaches gaming and new media practices at the University of South Carolina. Meaney has been an artist in residence at the Wexner Center for the Arts, a founding member of the international GLI.TC/H conference, and a contributor to *the Atlantic*. He has previously worked with high performance computing teams at Oak Ridge National Laboratory on art and science projects made possible through the National Science Foundation. His time-based, experimental artwork is represented by the Video Data Bank of Chicago.

Notes

1. Claude Shannon, "A Mathematical Theory of Communication," *Bell System Technical Journal*, 27 (1948): 379-423.
2. Barry Schwartz, "The Paradox of Choice," *TED Talk* video, 19:37, July 2005, https://www.ted.com/talks/barry_schwartz_on_the_paradox_of_choice.

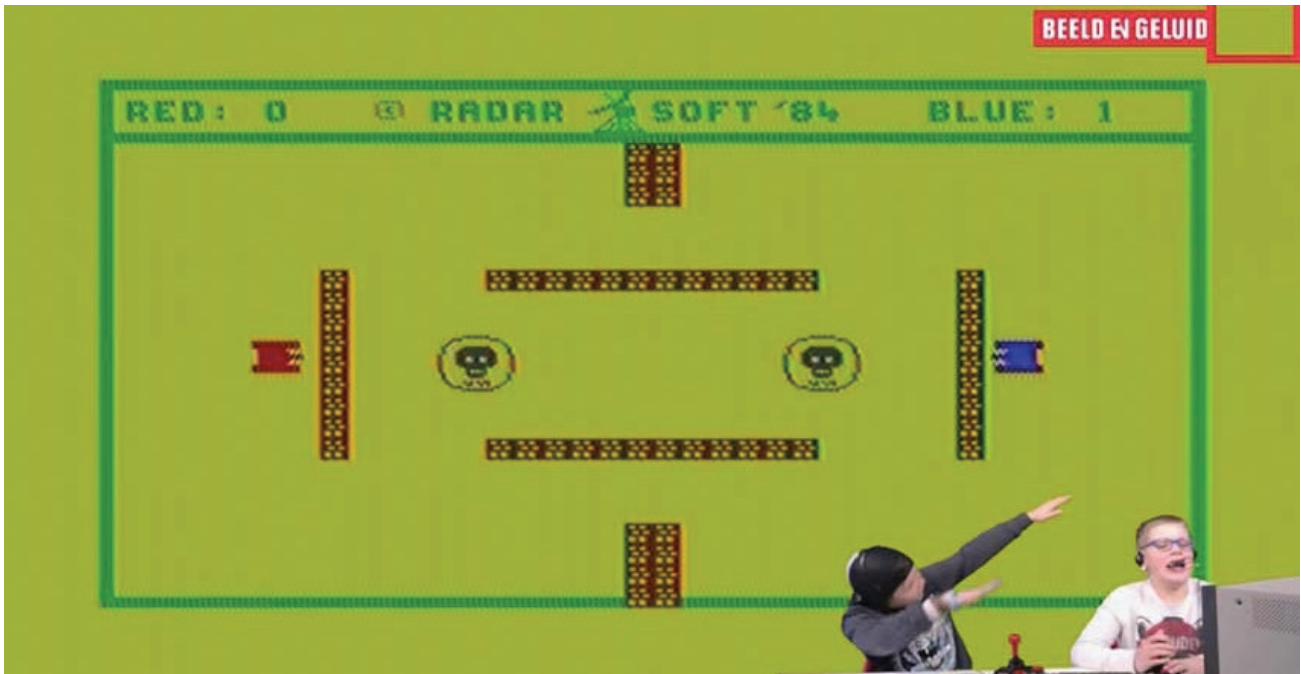


Fig. 1.0. Screenshot from YouTube video “20 -11-2016 Let’s Play 62,” Channel Let’s Play @ Beeld en Geluid, <https://youtu.be/5VMBR0eHI6s>.

Let’s Play Game Exhibitions: A Curators’ Perspective

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Abstract

The Netherlands Institute for Sound and Vision is home to The Experience, a museum exhibiting the history of media in the Netherlands. For ten months in 2016 and 2017, The Experience hosted a temporary exhibition entitled Let’s YouTube. During the Let’s YouTube game month, we programmed a ten-day exhibition with a focus on video games as Dutch cultural heritage. The games were selected along two axes: popularity in the Netherlands, and made in the Netherlands. To connect this exhibition to the YouTube theme, we used Let’s

Play videos as a contemporary phenomenon to engage younger visitors with “old” and often obscure games. For the Let’s Play installation, we selected games from our archives, produced in the Netherlands, and to which we had made agreements with the makers about the rights for online distribution. Over ten days, approximately 5,100 people visited the exhibition, mostly families with children, the museum’s target demographic.

INTRODUCTION

"This is so cool!" a ten-year-old boy shouts to his younger brother and "dabs" at the camera (Fig. 1). Of course, many kids find playing video games cool, but in this case the excitement is noteworthy: this boy is playing an obscure Dutch Commodore 64 game from the 1980s. In fact, these brothers have been playing it for more than ten minutes, commenting on both the game and their play while doing so.

Museums that exhibit video games as a contemporary art form and an essential part of our audio-visual cultural heritage seem to face a relatively straightforward task: make the exhibition playable. However, to encourage visitors, both young and old, to look beyond the surface of video games as just a fun, ephemeral activity, is a challenge. Here, a museum's mission to reconstruct history, invoke critical reflection, and create a deeper understanding of the world

and a visitors' place in it requires a more elaborate approach. Making playful exhibitions is an increasingly popular practice in the museum world.¹ But if games *themselves* are the focus of an exhibition, play can and should be much more than just a way to draw in audiences.

Here we aim to present one way of engaging museum audiences at a deeper level with video games: the use of *Let's Plays* as part of video game exhibitions. In our own exhibition of classic Dutch games at the Netherlands Institute for Sound and Vision, entitled *Let's Play!* (see abstract), visitors were invited to sit down and capture their gameplay on video while commenting on their engagement with the game in progress.² Here, we share both our findings through four main arguments for the practice of recording *Let's Plays* in a museum context, as well as the process of exhibiting these recordings as part of a game exhibition. Through this process, we

Fig. 1.5. The *Let's Play* live streaming setup, photograph included in Hugo Zijlstra's internship report, 5585120 Internship, Beeld en Geluid University.



argue for a more prominent place for play as a reflective act which should be part of any effort to exhibit video gaming as art, as culture, and as shared cultural heritage.

THE WHAT AND WHY OF LET'S PLAY VIDEOS

In less than a decade, Let's Play videos (LPs) have been thrust to the foreground as a prominent way to record and present gameplay. Several dedicated LP channels have among the most subscriptions on YouTube. In contrast to videos that offer game instructions or show off gaming prowess, an LP video generally offers a looser approach to play where failure, creativity, exploration, and transgressive play come to the fore, accompanied by running commentary by the player. The combination of commentary and an approachable playing style provides a sense of vicarious play to the viewer—a sense of being part of the experience.³

In our project, we created an LP setup as part of an exhibition centered around a nascent archival collection of Dutch games from the 1980s and 90s. The LP installation consisted of a chroma key setup, a Commodore 64 console, as well as webcams and a personal computer (PC) for recording gameplay.⁴ With consent from both the participants and the original creators of the games, the recording sessions were also streamed live and made accessible on YouTube.⁵ A few different strategies were tested as part of an internship project headed by research assistant Hugo Zijlstra. Sometimes visitors were only given minimal instructions on how to play and were simply encouraged to comment on their experiences. In another case, visitors were asked a few scripted questions by the museum staff supervising the exhibition. Staff asked about the perceived age of the game (e.g. “Do you think this game is older or younger than your parents?”), the difficulty

Screenshot from YouTube video “Let's Play test 7 Tempo Typen,” Channel Let's Play @ Beeld en Geluid, <https://youtu.be/MjPMCPQ91DU>.



of the game (e.g. “Is this game harder than the games you play these days?”) and, with older visitors, questions pertaining to memories (e.g. “Do you remember the first game you played?”). We also encouraged interaction, reflection, and enjoyment by inviting visitors to play together rather than by themselves to see what the social element would add to the situation of playing these older games.⁶

Based on these experiments working with LP videos, we distilled the following four lessons learned about the potential of LPs in a museum context.

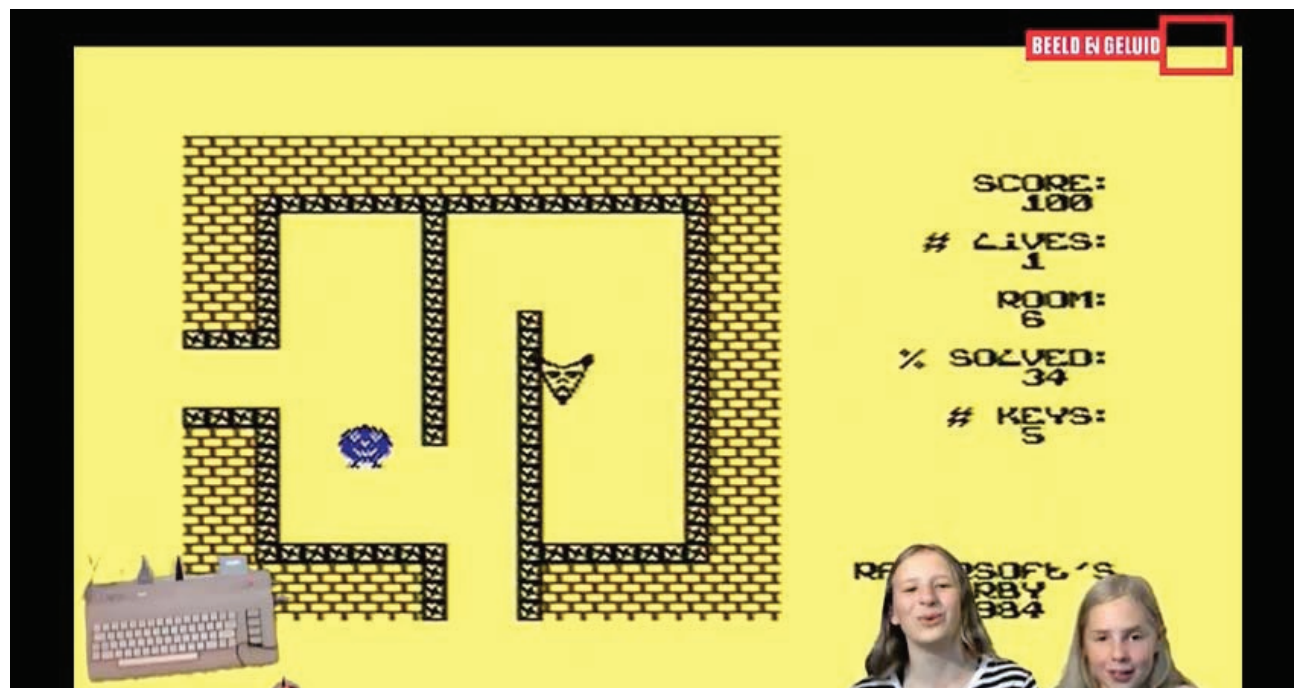
1. LP EXHIBITIONS ARE INVITING AND ENGAGING.

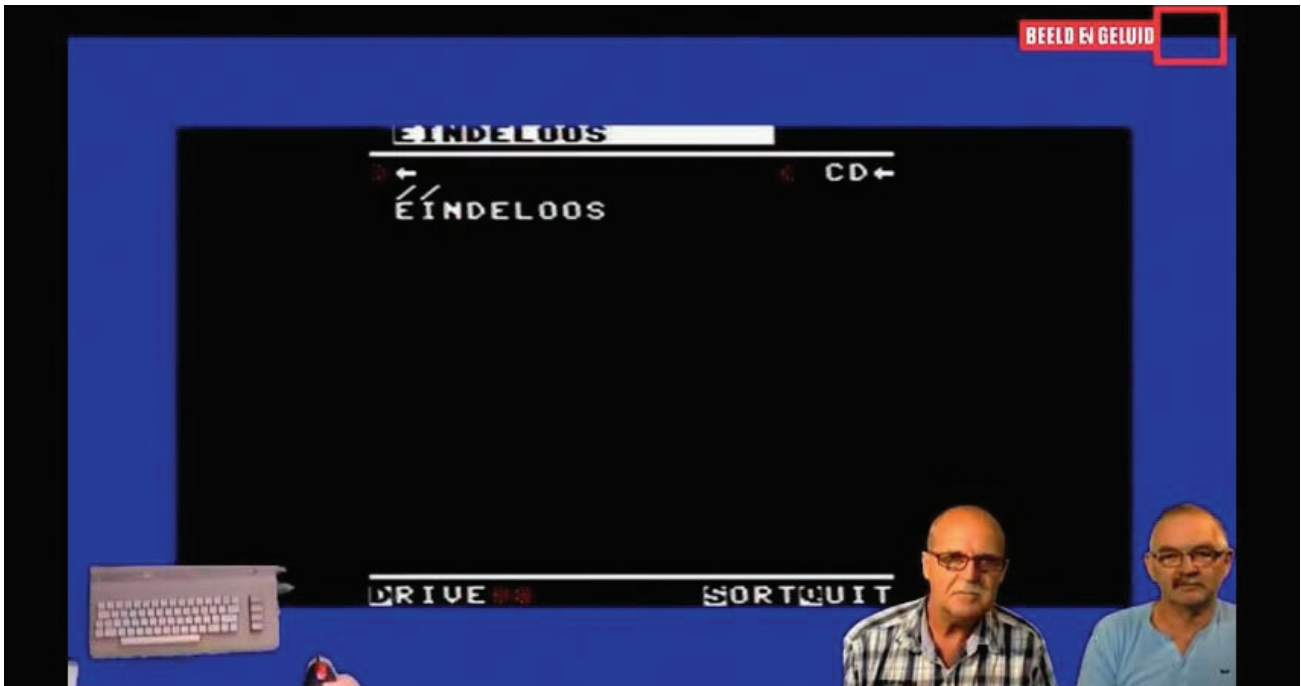
Given their popularity, LPs have the potential to act as a kind of recruitment and engagement tool in museum exhibitions. Especially for younger generations, making and watching

LPs of video games is already recognized as a pleasurable experience in and of itself. In our exhibition, we found that younger visitors were especially motivated to partake in making an LP, thereby following in the footsteps of their heroes on YouTube. Furthermore, their familiarity with the form allowed these visitors to engage in the technical aspects of these recordings without detailed instruction. Although we anticipated younger visitors to be well-adapted to actively commenting on existing material and make it their own—aligning with a larger participatory aspect we expect of youth culture—these visitors often required guiding questions from museum staff to break long stretches of silence.⁷ Familiarity with the phenomenon therefore does not always make for skilled LP-ers, but a little push usually helped.

Although drawing an audience is not the only task of a museum, in our experience, pro-

Screenshot from YouTube video “Lets Play test 16 17 Herby,” Channel Let’s Play @ Beeld en Geluid, <https://youtu.be/-7OeS1Tc4qM>.





Screenshot from YouTube video "Lets Play test 3 Eindeloos," Channel Let's Play @ Beeld en Geluid, <https://youtu.be/BHKeOINikLA>.

longed interaction is a precondition for further engagement. LPs can play a role in achieving this precondition. We noticed that while visitors of the exhibition spent an average of less than two minutes with "retro" games in their regular playable setup, the videos recorded at the LP setup are on average close to ten minutes in length. It seems that in this case, LPs added an extra satisfying layer of "show-and-tell" to the gameplay experience, whereby players did not only enjoy seeing their own imposed effect on the virtual environment of the game, but also enjoyed seeing themselves perform actions imposing that effect. Seeing oneself play puts players into a double feedback loop whereby enjoyment was experienced by having agency not only in the game space, but also in making a video.

2. LP EXHIBITIONS INVOKE REFLECTION.

A second reason to employ LPs in the exhibition of games is that engaging with games in this manner seems to invoke more reflection on both

the game, its context, the experience of play, and the visitor as player. If we acknowledge games to be capable and meaningful art forms, it is desirable for the museum to encourage players to reflect on games within culture, as well as games *as* culture.

We noticed that the promise of a potential audience to one's playing encouraged players to, with a little nudge and guidance, try and be as articulate, original, and funny as possible. This meant that our LP-ers were pulled out of the more immediately satisfying feedback loop of ludic progress and gaining high-scores (i.e., playing to win). Instead, they took note of the way that these games constructed narratives or made references to other media and the world around us. So, rather than engaging with games as a self-contained and self-referential system that distinguish between successful and unsuccessful player actions, our LP-ers came to recognize the broader cultural phenomenon of gaming, acknowledging its existence within a longer



Screenshot from YouTube video “lets play test 1 Eindelooos,” Channel Let’s Play @ Beeld en Geluid, <https://youtu.be/uTp-BxOVDmk>.

tradition of game and media development within a Dutch historical context.

Furthermore, we observed that the potential of being seen whilst playing, as well as seeing oneself play on the screen, made play a more performative act. This performativity also led to more self-reflection, heightened by the fact that players tended to put far more time into the *Let’s Play* setup. For example, several of the visitors commented on their own potential to cope with the difficulty of the game and noted how their own game literacy level had significantly changed over the years. The challenge for curators will be to see how LPs can contribute to the specific ways in which their museum presents a space for self-reflection—where visitors can reflect on the world and their place within it.

3. LP EXHIBITIONS CONNECT PEOPLE ACROSS GENERATIONS.

Third, we observe that the activity of recording

LPs in a museum setting fosters intergenerational connections amongst visitors. Because we invited visitors to record LPs in groups of two or more, the activity also became inherently social. Given the fact that mostly younger generations were familiar with the LP phenomenon, we encountered many videos in which younger visitors introduced the format to their parents or grandparents. In return, the (grand)parents would tell their memories of the older games on display to their (grand)children, thus encouraging the transference of oral history. These conversations covered a range of topics, varying from the aesthetics and technology of the game in relation to current games, to anecdotes of first being introduced to various games and consoles.

4. LP EXHIBITIONS HIGHLIGHT GAMES AS MULTIFACETED EXPERIENCES.

Seeing LP videos by different age and cultural groups does more than highlight similarities

and differences between varying playing styles. Streaming or providing other means of access to LP recordings helped further exposure of the exhibition material beyond the walls of the museum. LP access allowed both visitors and non-visitors to vicariously engage with the games through the recordings, repeatedly, and for longer periods of time while allowing viewers to learn from the reflections of the LP-er.

Furthermore, due to their minimal instructions and focus on commentary, LP videos provide insight into different ways of playing, meaning-making, and creating aesthetic experiences players recognize while engaging with a game. Like other interactive media, there is no one way of engaging with a game's rules or fictional world. Every play-through results in a potentially different experience based on the affordances of the game—how much agency players receive to explore a game's rules and goals—and the proficiency and preferences of players. Through watching LP videos either on screens within the exhibition or through streaming video, visitors can better understand video games as complex processes rather than mere static object. As digital media scholar James Newman explains, visitors get “a clear sense of the range of potential playings which a given game might support,” and “gain insight into the performances, observations and techniques of others.”⁸ Being able to compare one's own take on a game with these other, sometimes wildly different potential playings adds new interpretative frames to the games on display during an exhibition as well as a visitor's own relationships in understanding such frames. A game developer's perspective can be added here, too: during the *Let's Play* exhibition, many LPs were shown in which

the original creators played their own games while commenting on the creative processes behind the games. These LPs offered new perspectives on the games' aesthetics and other design choices.

CONCLUSION

When dealing with video games, we insist the role of museums move beyond the core traditional tasks of collecting, preserving, and exhibiting games as culturally valuable artifacts by engaging visitors in critical reflection on the cultural phenomenon of video games. The LP can be a vehicle for this type of engagement, invoking reflection on the games presented, facilitating social exchange of experiences, and stressing the complex, multifaceted nature of games. The performative, self-reflective nature of commenting on a museum object while being able to interact with it, and making recordings of such sessions as part of its exhibition, might be an approach holding potential far beyond digital game exhibitions. ➔

Bios

Jesse de Vos works at the Netherlands Institute for Sound and Vision as a curator and researcher of new and interactive media. His current topics of interest cover the preservation and presentation of games and websites. He was the lead curator of the *Let's Play* exhibition in 2016.

Dr. René Glas is assistant professor at Utrecht University, specializing in the field of game studies. Both within and outside of academia he is involved in projects dealing with video

game culture and its history, play as a method to investigate this culture and history, and game literacy.

Dr. Jasper van Vught is assistant professor at Utrecht University, also specializing in game studies. He is part of the Centre for Digital Games and Play in which he focuses on game theory and methodology, video game ethics, and the history and preservation of games as art forms.

Notes

1. See also: Katy Beale, *Museums at Play. Games, Interaction and Learning* (Edinburgh: MuseumsEtc, 2011).
2. The *Let's Play* exhibition was part of an ongoing joint research project between the Netherlands Institute for Sound and Vision and Utrecht University, focusing on game preservation of Dutch games as part of the national audio-visual cultural heritage.
3. René Glas, "Vicarious Play: Engaging the viewer in Let's Play videos," *Empedocles – European Journal for the Philosophy of Communication*, Vol. 5, Issue 1-2: Special Issue on Short Film Experience (2015): 86.
4. Chroma key, also called a green screen, enables filtering out the background and replacing it with, in this case, gameplay footage.
5. A sample of the recorded videos can be seen on the YouTube channel "Let's Play @ Beeld en Geluid": <https://www.youtube.com/channel/UC3WKTWXRXZ1cwr9J4ampq5g>.
6. For a full reflection on the *Let's Play* exhibition, see Hugo Zijlstra, *Let's Play! Exhibiting video game history and play at the museum* (Hilversum: Netherlands Institute for Sound and Vision/Utrecht University, 2016) available at: <http://publications.beeldengeluid.nl/pub/472/>. For more elaborate results of the *Let's Play* research project, see: Glas, René, Jesse de Vos, Jasper van Vught and Hugo Zijlstra, *Playing the archive: Let's Play videos, game preservation and the exhibition of play* (Leiden: Sidestone Press, 2017).
7. See: Mizuko Ito et al., *Hanging Out, Messing Around, and Geeking Out: Kids Living and Learning with New Media* (Cambridge: The MIT Press, 2009).
8. James Newman, *Best Before: Videogames, Supersession and Obsolescence* (Milton Park: Routledge, 2012), 62.



Photo Credit: Mike Chuck Bretzlaff 2017



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