

TRANS* IDENTITIES, VIRTUAL REALITIES;
GENDER EMBODIMENT IN GAMES/GAMING

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ABSTRACT

Trans* Identities, Virtual Realities; Gender Embodiment in Games/Gaming

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Games immerse players. Through immersion, players can see themselves embodied in their avatars. There is space for meaningful experimentation of gender through these avatars as embodied players can blur the lines between their real-life and virtual selves. The player's avatar becomes that person — in terms of personality, feelings, and gender identity/expression. In virtual reality, the player becomes a virtual actor in the world of the game, allowing the player to explore their avatar directly. Through various games, books, and anime, I demonstrate how players can find embodiment and how games can achieve a rigid sense of embodiment. Using an intersectional lens of cultural and gender studies, this paper aims to provide a framework for embodied gender exploration that future games can build upon. This framework is enacted through a look at embodiment and how the player is able to find an authentic self in the virtual world.

Keywords: Embodiment, embodiment studies, Virtual Reality, gender euphoria, gender studies, avatars, video games

Preface

While this paper stands on its own in putting forth ideas around gender embodiment in virtual reality games, it also works in tandem with *Automorphia*, the game created as part of this thesis project. It is therefore heavily recommended to play and experience *Automorphia* in the process of reading this paper. The same goes for players of *Automorphia*, who are encouraged to seek out and read this paper.

Acknowledgements

I want to extend my gratitude to everyone who helped me and was there throughout my thesis, along with the many friends and colleagues I have made along the way.

I would especially like to acknowledge the support and advice of my supervisor Liam Mitchell, who provided thorough feedback and kept me on track through the whole process of writing this paper and creating *Automorphia*. I also want to thank Karleen Pendleton Jiménez for joining my committee and making me tear up with her kind comments. And a thank you to Paul Manning for joining my defence committee.

I thank the various friends, family, and colleagues that supported me with edits, feedback, hangouts, and overall motivation. This includes Cecilia, who has been with me through this all, made sure I kept a positive outlook (their words), and was relentlessly supportive of everything I wanted to do. As well as Mana, who joined us near the end of this whole process. I also must acknowledge the support our cats, Pounce, Leo, and Nikki, offered through this journey.

Lastly, I want to recognize the space I built for myself to create this thesis and explore my own identity. *Automorphia* is a game that speaks deeply to my own experiences and I found great joy in the opportunities that this thesis offered me.

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List of Abbreviations

AFK - Away From Keyboard

FPS - First Person Shooter

HMD - Head Mounted Display

HRT - Hormone Replacement Therapy

MMO - Massively Multiplayer Online

MMORPG - Massively Multiplayer Online Roleplaying Game

MUD - Multi-User Dimension

VR - Virtual Reality

Why Am I Here? An Introduction

What does it mean to be gendered in a virtual world? How can playing a fictional avatar map onto the player's real body, and as such affect their gender? By working through embodiment and gender studies I come to recognize how gendered avatars come into play for trans* and nonbinary players and what it means to play a virtual reality (VR) game in that context. Through *Automorphia* (Henderson, 2023), a game about exploring your body, I posit that VR games with a focus on gender can become places of self-discovery, exploration, and overall a safe environment for gender expression. I argue that the gender presentation of an avatar in a virtual world can be interpreted to represent both the avatar's gender and that of the player. Beginning with embodiment, I work through what it means to see yourself in an avatar. I focus next on gender euphoria and how gendered avatars come to be. Finally I recount the development of *Automorphia* along with the weight it has as a game. Through all of this I argue for a future method of video game development that centres gendered experiences and aims to elicit gender euphoria in trans* and nonbinary players.

Looking to the future involves bringing the current community along. As such, this project works to remain part of the queer community and be generally well received by trans* and nonbinary people in order to confirm its use as a space for allowing gender exploration and experimentation. It is important to note what the use of 'trans*' means in the context of this paper: trans* acts as an umbrella term covering any and all identities that make a person not cisgender (if the person wishes to be included under such an umbrella). This rooting in community stems from the first stages of this project's

proposal, in which the idea was to look at feminism through, around, and in video games. This look would take an approach that centred the research in feminist thought. Through this I looked more at feminist research methodology and how it offers a way of knowledge making that considers ethics as a foremost concern. This project focuses on the queer community and it is important to confirm that this research is welcome within the community, as is critical for any project involving marginalized communities. This project takes guidance on this from Hesse-Biber: “feminist praxis takes up issues of power, authority, ethics, and reflexivity [...] feminist researchers often work at the margins of their disciplines [...] feminist research seeks social change and social transformation” (17-18). Feminist praxis places a focus on why this research matters and if it is going to be welcomed and enjoyed within the communities it affects. This research must come from a standpoint that aims to support the trans* community. *Automorphia* thus works to ensure this support by having the content of the game made clear from the start and allowing players to easily opt-out whenever they need/want to, offering the choice to play at your own pace. As the creator of *Automorphia*, and as someone who identifies as trans* and genderqueer, I am coming from a place of goodwill and care in this support and through this project. I have also had several members of the queer and trans* community play through the game and experience the comfort of being affirmed in the digital space of *Automorphia*.

The Media that Started this Project

I have read, watched, and played a multitude of media in order to conduct the research that makes up this project. This media includes canonical texts in gender studies, such as

Judith Butler's *Gender Trouble* (1990), recent video games that exemplify the techniques and ideas that are present in *Automorphia*, along with other books and anime that have affected how I interpret my gender. The majority of this media is looked at in the following chapters, however I will start with the media that brought me to this project to begin with. The game *Final Fantasy XIV* (Square Enix, 2013) is critical as both a starting point for this project and a continuing interest of mine. *Final Fantasy XIV* is a massively multiplayer online roleplaying game (MMORPG) that allows players to create characters from a variety of races. The game has an aesthetic focus on customization in appearance of clothes, accessories, and bodies and as such is full of beautiful people –idealistic versions of embodiment that allow players to be who they want to be (Transparency, 24:53). This is, of course, within the constraints of the game, the largest being a gender binary in character creation. *Final Fantasy XIV* had a big influence in pushing me to research more on trans* identities in games. I became intrigued on how the social world of *Final Fantasy XIV* can offer a way for people to safely experiment with gender expression. By being able to play as any body they want within the game's limits while also within a very welcoming and friendly community, players have the opportunity to discover themselves. There is definitely a reason I know several people who are trans* and discovered/realized that, at least in part, by playing *Final Fantasy XIV*. It is not only *Final Fantasy XIV* that allows people to experiment with gender identity; other games and types of games can allow for players to look into their own gender identity and expression as well. Playing a game as a character you create in a singleplayer game can follow these same themes of embodiment. *Automorphia* is one such game as it allows the player to explore a gendered body and work towards embodiment in that new space.



Figure 1. Screenshot of my character in Final Fantasy XIV, screenshot by author.

Continuing on from *Final Fantasy XIV* and similar cyberspaces, I want to dive into my own personal experience with non-social games and other media. Having played video games since before I can actually remember there are countless anecdotes to draw on but I want to focus on some media besides games as well. What made me first start seriously considering my gender identity was the anime *Stop!! Hibari-kun!* (1983-84), which portrays the extraordinary life of a young trans woman (extraordinary because she was the most powerful character in an anime mostly full of non-powered people). I mention the anime as it was the starting point for me to think more critically about my gender. I first found the anime when I was isolating in my room due to COVID-19 exposure in my household and I saw a clip compilation of *Stop!! Hibari-kun!* set to a song (for those curious, the video was this: youtu.be/-PuBb6AIbCs). Subsequently, I watched the entire 35 episode run within a week. While the show is problematic in several ways –racism and transphobia pop-up sporadically throughout– the core content struck a chord with me, and

I still find myself in the midst of questions on gender, who I am, and how I would like to present myself. The manga and anime *Ranma ½* (Takahashi, 1987-96) also caught my interest. I had watched the anime adaptation of *Ranma ½* as a child with my older sisters, but going back now I realize a lot more of the subtext that was present. *Ranma ½*'s titular character was inflicted with a curse that caused him to change between male and female bodies based on exposure to hot or cold water, thus it might be obvious how this played around with gender identity.

Returning to video games, I felt as though I started to play games in a different way after watching *Stop!! Hibari-kun!*. However, I now believe I was actually playing games the same way all along and only recognized it after this self-isolation period. This way of playing consists of choosing to not play as a man in games. This of course does not necessitate a trans identity but I do feel it indicates something about how I see my own gender. There are specific examples that come to mind where I created and played as a woman in games as my first choice in a playthrough. For example, when I played *Diablo III* (Blizzard Entertainment, 2013) on the Xbox 360 I played as a female monk named "Codex," who was inspired directly from the character of the same name in the webseries/TV show *The Guild* (Day, 2007-13). I did not think much of this at the time, but now I recognize deeper meanings behind my choice. Since then, I have played a variety of characters and avatars of differing genders in games, with the current majority being women or nonbinary characters.

My look at these characters I have played leads me to the different ways that an avatar can be interpreted by the player. Todd's 2021 article "Avatar Crossing: Self Representation in Animal Crossing: New Horizons," where he writes on the types of players in the *Animal Crossing* series, gives a succinct version of the augmentationist versus immersionist way of avatar representation in games. He puts it this way (as a paraphrase from Yee (2006)), "immersionists [are] those who wish to try for new identities, while augmentationists create avatars as a projection, or idealization of one's self" (2021). I interpret this to mean that how players choose to represent themselves in the game can affect them in real life. Players can seek to create a new identity in a game while still thinking of that avatar as a projection of the self. This separation between immersionists and augmentationists lacks nuance regarding the ways in which many players end up playing games, although it does provide a useful starting point. How players are affected by their avatars is of particular interest when looking at trans* identities as the player can then use the created avatar as an ideal self that they wish to see themselves as. I see myself playing avatars in the same way as in the Transparency video where she states that she plays as the shortest and cutest possible avatar because she wants to be perceived closer to that way in real life (30:13). I play these avatars because they allow me to roleplay as someone who I am not currently but could potentially wish to be. By playing as these characters the possibility of discovery of my own gender identity and expression opens up even though it is uncertain how I wish to present myself currently.



Figure 2. Screenshot of my character in *Elden Ring*, screenshot by author.

In FromSoftware's 2022 game *Elden Ring* I created a woman with a sword, which seems to be my go-to for fantasy settings and in general. I think I find myself embodying this specific character because *Elden Ring* is a relatable struggle. Perseverance is paramount to success and it feels nice to be a character that will continue trying regardless of the challenge ahead of them. Expanding on this desire to be a Joan of Arc-esque character I find myself wanting to be essentially a 'sword lesbian,' as having a sword and just killing monsters is fun! When I care about the character I am playing, the game matters more to me and I usually find myself talking about a game as though I *am* the character. My character in *Elden Ring* is me, or a version of me with a sword and the ability to revive, anyway. Mentioning Joan of Arc makes me think of Leslie Feinberg's *Transgender Warriors* (1996), as here Feinberg puts forth the idea that Joan of Arc was transgender and wanted to be seen as a man (31-7). While Joan of Arc's gender identity cannot be confirmed, it does bring an interesting connection; where I feel I want to be this Joan of

Arc-esque woman in a fantasy world, Joan of Arc may have wanted to be a man in the real world. The potential and confirmed trans identities Feinberg highlights bring a deeper meaning to how I see my own identity; I certainly do not mean to fully compare myself to Joan of Arc but I do enjoy the thought of it! This has all been to say that the creation of this project came about through my playing of video games and exploring my gender. My journey will continue and I feel that by writing and reading and playing around with gender I will keep mapping out places I have been and will go. I started this project with the intent of figuring out my identity, and regardless of the end point of my journey, the following chapters do well to detail my experiences.

Why and How this Project Came About

Going back to the initial thoughts of this project reveals the influences that brought me to this point. Having done an undergraduate degree in video game programming and development I planned on expanding into a more theoretical field by writing on feminism and diversity in games/gaming. Here I figured I could combine my passion for making games with the need to create a better environment for minority groups within the games industry. From readings in undergrad –and generally being online– I realized the horrid state of the games industry and I wanted to examine how games can be feminist and/or use feminist themes to progress the industry. I first took inspiration from Westcott et al. in “Feminist Art Game Praxis” (2013) who collectively created an art game from a feminist standpoint. I thus planned on creating my own game that could work alongside this paper. Eventually, this game idea took the shape of a virtual reality experience that is now seen in *Automorphia*. The combination of the real and virtual worlds into one

cohesive environment through the use of VR allows for embodiment in the player. This project aims to explore this combination, how trans* bodies experience spaces, and how those experiences shift self-perceptions. As *Automorphia* is an important part of this project it is critical to note this paper and the game act in tandem and support each other in research and practice. *Automorphia*'s development had a major influence on this paper and the outcomes of the research and so it is necessary to examine how the game came about and what I learned from it.

Automorphia was developed using the Unity game engine wherein I implemented various code, art, and sound assets to create a cohesive game experience. Having knowledge in Unity and VR game development the creation process followed naturally from my previous projects. I started with a basic idea about metamorphosis and transformation. Then came the mirror, now central to the game, to highlight the avatar's gender presentation. The purpose of the mirror is to bring about gender euphoria and provide a direct look into non-conforming gender expressions in virtual worlds. It is important to note that gender euphoria does not necessitate a trans* identity but that instead my focus simply lies with those who are trans*. Going further into the gameplay of *Automorphia* shows how the player can adjust the body that they inhabit in the game and potentially discover a euphoric body. Starting with a character that is ungendered, the player can adjust the radius of each body part, within set limits, until they feel they are done with the experience. The adjusting of these body parts is operated through the mirror pieces that the player collects, each piece giving access to another body part with these parts being a left and right arm, a torso, and a head. Simply, the player will be modelling their own

character and becoming more comfortable with how they look in the game. This modelling allows the player to be meaningfully connected to their avatar and works to allow the player to be who they want in the game and further their embodiment of the character they are playing.

The work done on embodiment in *Automorphia* is present throughout this paper as it is interconnected to all aspects of the research. Each chapter looks at a part of the research and interprets it as meaningful to the creation of *Automorphia*. This introduction itself brings the foundations for the methodology present in the paper and examines a few key pieces of media that ultimately started me down the path to this research. Alongside those experiences I have examined the development of *Automorphia* and want to now look at two pieces of media that precede this project and give it context.

What Has Been Done Before

I want to look at what has been done with gender empathy. Notable in this space of empathy is Anna Anthropy's game *Dys4ia* (2012) as it details her experience with hormone replacement therapy. *Dys4ia* is what I would term an 'art game,' which I mean as a game that is made by a small team, typically 1 or 2 people, and primarily aims to present the artistic intent of the creator(s), usually in an autobiographical context.

Automorphia is thus an art game that seeks to represent how I feel about gender identity through an autoethnographic view much akin to how *Dys4ia* and similar games operate.

These types of art games make use of highly personal storytelling and evocative mechanics that can be examined by looking at the gameplay of *Dys4ia*. Anthropy's game

frustrates the player in a way that aims to represent her own frustration throughout her transition. In an interview for Penny Arcade, Anthropy says about *Dys4ia* “[it] was a story about frustration - in what other form do people complain as much about being frustrated? [...] [Video games offer] an entirely different level of empathy.” It is in this context of empathy that I want to again look at gender empathy. *Dys4ia* works to make the player feel the anger and annoyance that Anthropy was feeling regarding her gender and the transition to it. *Automorphia*, and this project as a whole, builds off of the foundations laid by Anthropy and others to continue in the space of explorative, evocative games that focus on achieving a sense of gender empathy in their players. By allowing the player to see themselves in and become their avatar means that this empathy is extrapolated onto their own identity. The embodiment found in this relationship is not exclusive to virtual reality –although I argue it is made more impactful through VR– and a look at pre-visual avatars is warranted here, achieved by examining Julian Dibbell’s article “A Rape in Cyberspace” (1993).

Dibbell’s work comes with a strong title but one that is also apt to its content. He describes an incident in the multi-user dimension (MUD) called LambdaMOO in which a player forced the avatars of other players to have sex with his avatar. I do not want to describe all the acts here, and a better understanding of the exact events is achieved through Dibbell’s recounting, so I will focus on the affective aspects of the overall scenario. One of the players who had non-consensual sex acts done to her avatar had posted about the rape on the social boards of LambdaMOO and later confided in Dibbell “that as she wrote those words posttraumatic tears were streaming down her face – a real-

life fact that should suffice to prove that the words' emotional content was no mere fiction." Through this I see the real-life trauma that was brought about and the realization in the victim that acts in the virtual do affect real life. Thus I get to this understanding that any avatar that is embodied by the player can allow for the transference of feelings between the virtual and real-life identity of said player. Although "A Rape in Cyberspace" is an extreme example of how affect can carry across between these identities it is useful to examine how intense the feelings were in the victims. If the victims had felt that because the rape happened in a virtual world that it was not of much consequence they would not have put in the effort to see the perpetrator eventually removed wholesale from LambdaMOO. I would be remiss to not also mention that one player had an avatar that was described as being "of indeterminate gender" (Dibbell) and that the world of LambdaMOO was a space for experimentation and exploration of identity across many different facets. This avatar without a determined gender is of particular focus to me as it speaks not only to how trans* people have existed for a long time but also that people have explored gender online since the first use of avatars. This brings me to think on the future possibilities of exploring identity in deep, respectful, and caring ways through virtual spaces and the framework that is laid out by *Automorphia* and this project as a whole.

Introducing the Chapters

The first chapter, "Exploration Through Embodiment: A Look at Sense of Embodiment in Virtual Reality," begins by breaking down what this sense of embodiment entails and how that relates to my look at virtual reality video games. The chapter examines a few

different games and argues how authenticity and meaning are found in each. These authentic and meaningful experiences are then explored to determine how they offer embodiment to the player. Working from the framework for a sense of embodiment laid out at the beginning of the chapter I then detail how games make the player care about their avatar and form connections between their real-life body and their virtual one. This embodiment and connection are then shown to be of use for the player to experiment and explore their gender identity and presentation. The gendered embodiment found here leads into gendered experiences in video games more generally.

In the next chapter, “Gendered Experiences and Their Relation to Video Games,” I determine how gender can be interpreted through different games. I start with defining what gender performance and performativity mean for the player of a game, taking from Judith Butler and expanding into my own definitions. Authenticity then comes back into the argument and I examine how virtual spaces and worlds can interact meaningfully with the real world by way of ideas stemming from Legacy Russell. Through her writing on digital avatars I explore character creation systems in games and what it means for the player to create an avatar that represents their ideal representation. By exploring their identity and presentation, the player then is able to map the journey they take along the way. This mapping leads to *Automorphia*, the path I took to create the game, and how the presentation of that journey to the player.

The next chapter, “The Creation of *Automorphia* and its Effects,” offers a close look at *Automorphia* and the media that made its creation possible and the results of said

creation. Beginning with what gender euphoria means to me and a recent example of a time I felt that euphoria, the chapter goes into the feelings and experiences I had that shaped the final version of *Automorphia*. These experiences are mostly based in video games and thus had a strong influence on development and led me to make certain mechanical and gameplay choices. *Automorphia* is predicated on what I found through playing and reading other media and what I felt would work best to create the game as I saw it. Through *Automorphia* any player can see themselves reflected in their avatar and work on their own journey of gender exploration.

The conclusion chapter, “Where This Project Comes From and Where It Leads,” wraps up the above chapters and details the potential for future work in this space. I reflect on the arguments made in each chapter, returning to embodiment, gendered character creation, and *Automorphia*. I also explain the framework that is created by *Automorphia* and think on future projects that can be made with said framework. Ultimately, I conclude my arguments and reflect on how the paper has affected me and what it can bring to the future.

This introductory chapter explored the roots of the methodology present throughout the research and where it came from and leads. By examining a variety of media and my experiences with them it is possible to understand the roots of the ideas of this project and the potential outcomes not only for myself but for all players of *Automorphia*.

Highlighting the development of the game also brings to mind a look at how that development functioned and the work taken to create a finished product. From here I look

at how gender comes to be formed in games by the developers and the players and the potential for further work and research. Before the future however, comes the present, and so must come a look into contemporary games that examine gender. *Automorphia* and the paper presented here thus put forth ideas on how a VR game can offer further gendered embodiment in order to facilitate an exploration of gender in the player.

Exploration Through Embodiment: A Look at Sense of Embodiment in Virtual

Reality

To begin I will first examine what embodiment means and how VR games can be created in a way that allows for gender exploration through embodiment. This chapter covers how embodiment functions in video games, with a specific look at how VR operates and the mechanisms for embodiment within it. A breakdown of the sense of embodiment (Kilteni et al.) offers a platform to examine what makes *Half-Life: Alyx* (Valve, 2020) so embodying and thus what other VR games can do to offer the same terms of embodiment. This sense of embodiment is put into perspective through the lens of immersion, with *Sable* (Shedworks, 2021) acting as a non-VR example of immersive and responsive gameplay. Overall, I touch largely on how authenticity is critical to embodiment within a game and on how representations of the player via an avatar can be made to be authentic. The chapter concludes by tying in how embodiment functions through this authenticity and what that means for a greater interpretation of gender identity and presentation through embodied avatars.

To be embodied in a game is to feel as though the avatar you are playing is an extension of yourself, or that it simply *is* your own body. Part of this embodiment is found through agency, something that is part of all games. When playing games that focus on embodiment, the player is placed into a position of control over a character. This character then serves as the player's analogue in the game's world. The player enacts actions on the gameworld through this character and thus the gameworld reacts to the player's input. When this action/reaction system is synced with the player, the game

‘feels right’ and the player can become embodied in their character. The largest aspect that makes a game ‘feel right’ is seen through the aesthetic of the game and how control is offered in relation to the game’s set rules and boundaries. That is to say that the feeling that brings about embodiment is rooted in the limitations and affordances that the game offers to the player. This feeling is explored in this chapter through authenticity. A player feeling as though they have total control, and thus agency, over their character can be described as authenticity. Even if the game prevents the player from doing any action they might be able to desire, the player can still be embodied in the character as the game presents a believable amount of agency in relation to the game’s mechanics.

This embodiment becomes especially relevant for virtual reality games as they offer a more direct link to their worlds and characters. The sense of embodiment can be broken down into three sub-senses that create a cohesive idea of what it means to be embodied in an avatar in VR. (Kiltner et al.) These senses are agency, self-location, and body ownership. This sense of agency in terms of virtual reality refers to “global motor control, including the subjective experience of action, control, intention, motor selection and the conscious experience of will” (Blanke and Metzinger, 7). This is achieved by creating a VR experience that makes it obvious to the player that they are in control of their avatar. To promote this feeling, the hands, head, and any other body parts with trackers should be responsive to the player’s movements. Most VR setups have a head mounted display (HMD) and two handheld controllers. Hence, many VR games make use of these standard trackers and make the player’s avatar have basic hands that follow the player’s movements/gestures. The head is not typically seen in VR, as the player either usually

assumes a first person perspective as an avatar, or less often a god's eye view that removes the avatar from the player's body. I focus here on first person VR games as they more readily prioritize the sense of embodiment.

What it Means to be Immersed

In discussing how a game brings about effective and affective immersion through its look and feel, I should begin with explaining what causes embodiment in virtual reality games and experiences. As detailed above, the sense of embodiment consists of three sub-senses. First, the sense of self-location is about being aware of how your body is placed within a space. In VR, this means in-game cues that remind you, as the player, that the game's world is encompassing you within itself. The sense of body ownership relates to how the player's avatar evokes a body that is interpreted as being the player's body. To reiterate, the sense of agency for VR is the feeling that the player is in control of their avatar in a meaningful way. This is achieved in a major way through aesthetics. When talking about video games, aesthetics refers to the 'game feel,' or kinaesthetics, that a game has in conjunction with its use of visuals and sound to create a whole experience. This idea of game feel is defined by Swink (2009) as the way that the player is extended into the game and the "aesthetic sensation of control" that influences their experience. The kinaesthetic aspect is put together through three mechanisms: controls, meanings, and limitations. These interact and engage with each other to form an understanding of game feel and thus aesthetic as a whole. Providing a close look at Shedworks's *Sable* (2021) will allow me to focus on these three aspects.

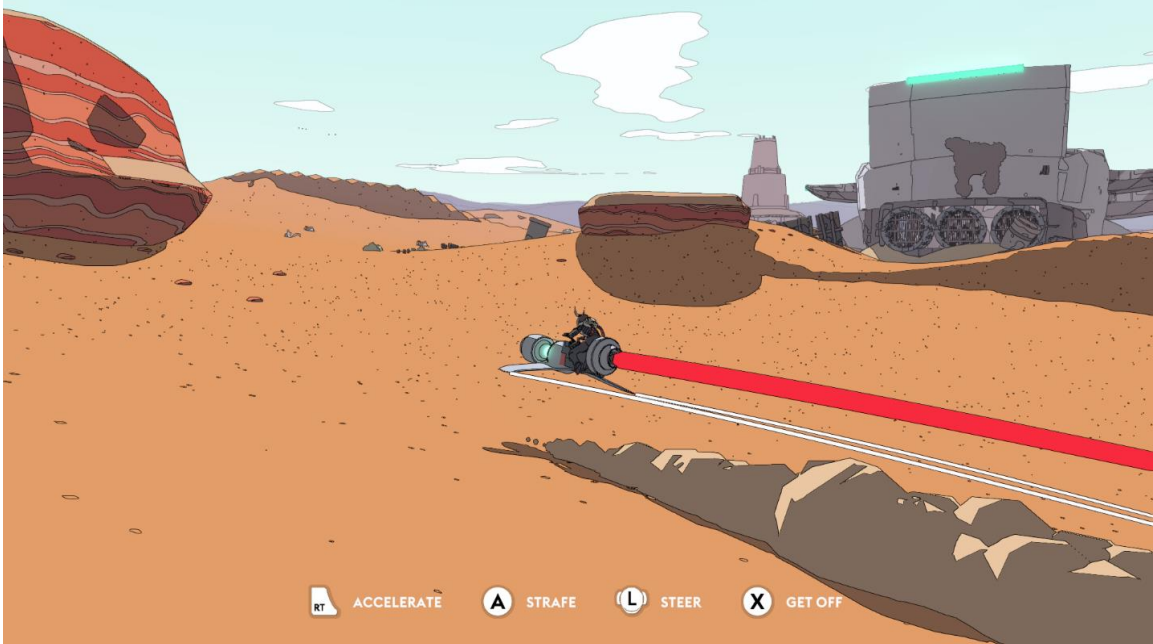


Figure 3. *Example Sable gameplay, screenshot by author*

Controls and the mechanisms thereof refers to the way the player manipulates the game state, via moving a character, choosing dialogue, or any other action the player can perform. Within *Sable*, the player can climb, glide, ride a hoverbike, and run. This allows the player to have a believable sense of agency over *Sable's* titular character. *Sable* responds to these controls in a way that is consistent with her character. She is a young girl going out into the world on her own and this is reflected in her abilities and the confidence she has in them. Running, jumping, swimming, and riding a hoverbike are all actions *Sable* is good at and the player thus has a strong control over those actions when performing them in the game. With climbing, *Sable's* inexperience shows and she will slip down the surface slightly if she starts running then jumps into climbing. However, although the player loses some control, the feeling is still cohesive to the character and the game overall. These actions are ones that seem reasonable for a young girl to do in the world of *Sable* and thus the controls are coherent and produce good game feel. When

the player wants to glide, the action also feels somewhat uneasy for Sable to do. She is not experienced with gliding and that is represented to the player. As with the loss of control over climbing, gliding offers a further point on how *Sable* brings game feel through the use, uneasiness, and learning of its controls.



Figure 4. *Sable sliding down when jumping onto a cliff, screenshot by author.*

Continuing on to meanings, it is seen through *Sable* that the agency of Sable as a character is inherent to the game's narrative and world. These actions that the player can produce have meaning within the game and thus the player feels that their character is appropriately placed in the environment of *Sable*. The gliding that Sable is able to do is gained by procuring a special stone as part of a tradition. This tradition is framed as a method for young people in the world of *Sable* to explore and discover their own identity and career. Through this, the action of gliding is given meaning not only as a method of traversal but also as a device for character growth.

In considering the notion of limitations, I look at the rules and boundaries that the game imposes on the player. *Sable* offers a quick interpretation of limits when compared to *The Legend of Zelda: Breath of the Wild* (Nintendo, 2017), which is a game with a very similar feeling of exploration and discovery, including similar stamina, climbing, and gliding systems. However, unlike *Breath of the Wild*, *Sable* does not feature any combat or any way for the player to die. *Sable* purposefully enacts these limits over the player's agency to die in order to craft a specific gameplay style and overall theme. These limitations work in tandem with the controls and meanings of *Sable* to present a coherent game feel and overall aesthetic. To put it simply, the aesthetics of games are constructed out of the details and components that work to create polish and game feel.

Understanding the Sense of Embodiment Framework

From this breakdown of aesthetics I argue that, when looking at first person VR games, games that provide cohesive kinaesthetic and generally aesthetic experiences provide greater immersion. The use of aesthetics for VR refers to how the gameplay is coherent and understandable for the player. This circumstance holds true for how the player can become embodied in a differently gendered body. Exploration on this is furthered in the chapter titled "Gendered Experiences and Their Relation to Video Games." Here however, I focus on the game *Half-Life: Alyx* (Valve, 2020) in regards to its polish and game feel and how that brings about an immersive gameplay experience. *Alyx* is a realistic looking game and my examination of its embodiment focuses on how that realism helps it be embodying. What is important in order to create embodiment in all VR games is the matching of real-life movements and actions to the virtual world. The

exploration of *Half-Life: Alyx* below works to exemplify how a game can achieve embodiment and what *Automorphia* (and other games focused on embodiment) should emulate.



Figure 5. *Shooting the pistol in Half-Life: Alyx, screenshot by author.*

In terms of the sense of agency within *Half-Life: Alyx*, the game makes extensive use of the finger tracking offered by the Valve Index's controllers (Figures 6 and 7) to offer greater control to the player. The primary actions within *Alyx* are performed by the player doing specific hand/finger positions. By extending the index and middle finger and contracting the rest, the player can bring objects from far away into their hand. Imagine you were pulling back on a yo-yo to bring it back up, that action is the same as the one you perform in *Alyx*. Although there is no weight to this virtual yo-yo, it simulates the feeling and creates an action that feels natural. Once the player has learned the system to grab objects from afar, it becomes second nature whilst within the game. This aspect of second nature is really where agency (and embodiment as a whole) comes to roost. As

agency in VR is the feeling of control over a body, a game that has actions that become second nature offers greater agency. This second nature is predicated on the notion of supreme control. By performing these actions as though they were actually natural, the player is put into a position of mastery over the game's controls and can enact their will as they see fit (within the limitations of the game). There are arguments about virtual identities/second natures being part of the player's real identity, an extension of self from one world into another. This extension can be termed a "second self" as it represents a theoretical cloning of the mind and personality of a person. This clone is a false proxy; it *is* the same person, however they may be represented. The second self here is a representation that serves as an extension of the player's reality into the virtual space and thus is argued to *be* the player and not just represent them.



Figure 6. *Alyx's hands, screenshot by author.*



Figure 7. *Person holding Valve Index controllers playing Half-Life: Alyx.* Source: “Half-Life: Alyx Hands-On! Tested on 8 VR Headsets.” YouTube, uploaded by Adam Savage’s Tested, 19 December 2019, youtu.be/T54aGkkXfuc.

Returning to *Half-Life: Alyx* I argue it enacts this sense of agency by creating a highly reactive and personable character within the body of Alyx. The player is in total control of Alyx’s actions during gameplay. The body the player controls is represented by hands only, which is typical of many first person games and especially first person VR games. This functions to give the player a feeling or sense of body ownership while maintaining the aesthetic of VR (usually only seeing the body parts that are tracked by the system and that would be visible in real life). By giving the player these familiar and figurative hands, *Alyx* offers an opportunity to become embodied within its character. To make these hands feel real, they must copy the motions of the player’s hands. The Valve Index controllers allow games to track the movement of each individual finger holding them. When playing *Half-Life: Alyx* this is used to allow the player to perform different actions

based on hand and finger positions. These hands feel real because they are representative of the player's movements and thus can be seen as virtual replacements. The visual acuity of the hands is not necessary for embodiment, however *Alyx* does offer highly detailed models for the hands which should be noted as the images presented throughout here showcase that. The discourse around graphical fidelity in games goes beyond the scope of the argument on embodiment presented here but is pertinent when discussing VR games. As many popular games utilize realistic graphics as a selling point, examples are often realistic yet this does not seem to be required for embodiment. *Alyx* herself is an inherently familiar body, represented through her hands, regardless of the gender or race of the player. *Alyx*'s representation is coherent to the world and to the player. As such, the player can see themselves in the character of *Alyx* and allow themselves to be drawn into the world and environment of the game.

After the player allows themselves to be immersed they can also allow the sense of body ownership to take hold. Typically this is done through avatars that evoke figurative (ie. human) images, and the games focused on here rely on these types of characters. Hands, arms, torsos, legs, and feet all make up the typical human body both in real life and in VR games. This can present an easy opportunity for players to be embodied in the avatar they use. When playing in VR it becomes easier for the player to see themselves as the character when it matches the outline of their own body. The body does not need to match the player's own in an exact way, the imagined outline of a similar body is sufficient. Looking towards Peck et al.'s study that "demonstrate[s] that embodiment of light-skinned participants in a dark-skinned [virtual body] significantly reduced implicit

racial bias against dark-skinned people” (779), I extrapolate that the player is able to be embodied in their avatar without needing a complete match between character and player, offering an idea of empathy for different bodies. For body ownership, this shows that the main factor in becoming embodied through this sense is via a known/knowable body. The player recognizes the body they play in and can reconcile it as an extension or replacement of their own. Thus it can be seen that the sense of body ownership responds largely to how the avatar’s body enacts the same goals as the player’s body. Goals less so in terms of actions or movements, as is the case with the sense of agency, and more so in line with the body being authentic. An authentic body in this sense is one that is coherent and legible with the world, processable as a piece of the larger whole. The game world needs to evoke this same authenticity.

Further to my position that the player’s avatar does not necessarily need to match their own body, I go to Krekhov et al. and how they determine that non-humanoid bodies can bring about embodiment. This works to support the claim that authenticity is the main aspect of the sense of body ownership. Although these bodies are not human they can still cause the human player to become embodied. Thus proving that body ownership is about being placed within a body that is authentic to its world. There is an interesting look at completely alien (ie. incomprehensible as an Earth animal) avatars in VR and how they can be interpreted by the player to be meaningful to their real-life body, although these unreal bodies are out of the scope of this paper. As for the concerns here, the authenticity of an avatar can be judged based on its knowability as a figure, be it humanoid, insectoid, etc. and how said avatar responds and belongs within the larger gameworld around it.

Krekhov et al. conclude that “virtual body ownership” is applicable to animal avatars and can be a useful way of experiencing a different body that can still be recognized as authentically belonging to the player (5). Self-location is the primary process through which this understanding of an authentic avatar is brought about to my study of embodiment in VR.

The sense of self-location as Kilteni et al. describe it is “a determinate volume in space where one feels to be located” (375), I would say this is also a feeling of belonging within the space. This “determinate volume” is made so by way of its authenticity. Having first a body that meshes well within the world of the game then means that this world needs to also mesh well with itself. This idea of meshing bodies applies to trans* bodies and is explored in the next chapter.

I return now to the previous examples of *Sable* and *Half-Life: Alyx* to showcase how a world can be consistent with its own contents. Both of these games create a strong sense of world building within the game itself by containing a breadth of content that is not necessary for the plot to advance. This worldbuilding makes the game feel more cohesive and makes it easier for the player to see their avatar as part of the world. In this regard, the world of a video game is seen as authentic based on its aesthetic properties. The overall cohesion and feel of the game contributes greatly to how the player feels within it. Thus finding oneself located within this virtual space trends toward the sense of self-location. The player becomes self-located by virtue of the authentic nature of the game world. As with all of the sub-senses of embodiment, the sense of self-location is related to

the senses of agency and body ownership. By being able to be placed within a space, within a coherent body that is under their control, the player can become embodied.

How Representation Becomes Extension

From the embodied player comes the beginning of an idea of how *Automorphia* will exemplify this sense of embodiment. While the exact development and identity of *Automorphia* is expanded on in later chapters, I begin with talk of how virtual avatars function to simulate reality. Virtual spaces, such as those in video games, offer a place for the player to inhabit a different body. They are in control of a body that is not their real-life self, regardless of similarity or lack thereof. While in charge of this virtual other, the player retains their real-life self. This goes back to the idea posited about a second self. Another self that is a copy of the real-life self but is utilized for abstraction from real life. The avatar that is embodied in a game is still based on the identity of its player. What happens to the avatar happens to the player. This second self acts as a pseudopod for the identity of the self. That is to say that this other self is a direct extension of the real-life self. As this other self is a virtual representation for the player I argue that its extension is brought about by the mechanisms it uses to enact embodiment in said player. Returning to the three senses that make up embodiment, starting with agency, it can be explored how an avatar's representation in VR is extended to the player.

The sense of agency shows that the player must feel in control of their character in a meaningful way for embodiment to occur. This control is brought about through the game's use of aesthetic and game feel. *Sable* offers this through its use of cohesive world

design, meaningful character actions, and responsive input. The player gets the feeling of being able to do what they wish within *Sable*. The player is brought into the game's world as a primary agent, they are not simply watching the game happen before them but are active in its progression. While this is not necessarily true of every game, a key aspect of the virtual reality games I am examining is the knowledge that the player will be in direct control of a body and placed in that body from a first person perspective. From this I argue that a VR representation of the player is always an extension of the player's reality. The player is still in a real-life space while in VR and the representation they inhabit while playing is mimicking their movements in this real-life space. This connection is blurred and disrupted as much as possible based on the game's level of agency through its mechanics that work towards good game feel and aesthetic. The agency that is brought about by this game feel and aesthetic is what leads me to see that the representation of the player is extended into real life through the mechanics, and thus agency, of the game.

Alongside agency, body ownership is the largest component of how the player's representation in VR can be seen as an extension of their reality. Referring again to Peck et al. shows that the player is able to achieve a greater empathy of different people by embodying them in VR. The avatar that the player is inhabiting in this instance is used to represent the player's own identity being extended to a different body. The function of this extension is brought about by the body of the avatar being meaningful to the game's world and to the player. By having an authentic body, the player can claim ownership. This ownership necessarily infers that the avatar's body is seen as an extension of the

player. The VR body is a representation that is owned and controlled by the player and thus extends the will of the player into the game. This extension of will is a critical component of agency and authenticity that leads to a VR representation of the player being seen as an extension of the player's reality.

Coming to the end of this discussion of embodiment, extending the will of the player needs not only a cohesive body but a cohesive environment and place. Here I bring in the sense of self-location and how an authentic location means the player can allow their representation to be an extension of their reality. The sense of self-location relies on placement within an authentic space. The player must see that their body is a valid representation within the world of the game and thus the player is extending their reality to the game. What this means is that the player is recognizing the virtual world around them as a replacement for the real world and their body is being extended in actions and identity into this virtual world. The self-location that the player experiences while embodied brings the idea that while placed within a space the player must recognize how their own self is extended into said space. This recognition enables the player to see the avatar-as-representation as a form of reality being extended into the virtual.

From Embodiment to Gender

In the real world, the player has experiences, knowledge, and personalities that get brought to the game while playing, such as when the player must make a moral choice, the 'good' and 'bad' option is determined by the player's real-life morals. Whether this happens consciously or not, the player is being affected by real life while in a game.

Incidentally, this helps prove that games are not apolitical as they rely on the underlying politics of the player in order to have moral choices. If the player does not see the politics in the game it means they are agreeing with them. It follows that the player's real life is part of their virtual identity as their held beliefs as a person are brought into the politics of the game. What does happen however is that the player can allow themselves to focus on the game and become immersed in it, suspending their disbelief and putting real life 'on hold.' What this offers is a method for the player to be willingly embodied in the game. There are echoes here to Caillois's requirement for play to be voluntary (128), as much in the same fashion does embodiment need to not be a forced requirement of play. This allows for that embodiment to happen as a factor of the willingly extended self and thus the prime self is affected by the experiences this embodiment brings about.

These ideas of embodiment might also suggest that the player can be affected by the experiences in a game and bring those changes into their real identity. Here I can mention that I have taken on traits of characters I have played because I liked being that character. By looking at the methods through which the VR representation is an extension of reality it follows that when a player is embodied they will be affected by the game. Virtual reality as a tool for game playing allows for an exaggerated connection between the player and their avatar. The player is placed within the virtual world of the game and is abstracted away from the real world around them. Although the player is aware that their physical body exists, the virtual approximation takes precedence. They become invested in the events of the virtual and turn their focus to reifying them. From this process comes the actualization of the affect of the virtual into reality. This occurs when the conditions

of the play experience allow the player to willingly be embodied and be immersed into the game and their avatar. While the player will undoubtedly be affected by the game they play in some way, even if that way is just entertainment with no consequences, for VR games with an embodiment focus the player will be particularly affected in their identity based on their connection to the avatar in the game. Look at *VRChat* (VRChat Inc., 2014), where players can upload any avatar they wish, including totally nonhuman avatars. The diversity in avatars shows the possibility for being embodied in a nonsensical body or totally disregarding seeing themselves in that same nonsensical body, both being valid methods of play.

From this connection, gender becomes of particular relevance when discussing identity and how the player is affected by the circumstances of the game. A VR game is able to present the player with an opportunity to explore their identity in a meaningful way. With this comes the possibility to experience a different gender identity or presentation within a safe space. The avatar of the player need not represent the player's real-life body to bring about embodiment and thus this avatar can present differently than the player. This altered presentation allows the player to become affirmed in an identity by seeing it in the virtual. When the player has their gender affirmed through their avatar, the player themselves becomes affirmed. In Laura Kate Dale's *Gender Euphoria* she writes about *World of Warcraft*: "[It is] where I first found the feeling of being home" (210). This closing line to that particular essay clearly encapsulates Dale's feelings of euphoria that were found playing *World of Warcraft*. She discovered these original feelings of gender euphoria through her virtual self. Even though she did not see herself as trans at the time

of play, the female character she was playing being referred to as female let her feel at home in her own body. It is these moments of joy and safety that bring relevance to games such as *Automorphia*.

To bring the focus towards gender, consider how embodiment allows the player to be present in their avatar. The player seeing their body's representation in a virtual world as an extension of their real-life body offers a chance for the player to inhabit the identity within that virtual world. These representations are the body of the player and thus the player is changed and affected by the circumstances of those representations. By allowing these changes the player sees that their identity is carried between virtual and real worlds. Part of this identity is gender which contains gender presentation. This presentation is what is represented by the player's avatar in the virtual world and by their real-life body in reality. It is when these presentations do not match that the player can experiment with their gender presentation and potentially experience gender euphoria by finding a presentation that feels right. The player seeing this virtual body that better represents them is what allows the player to explore gender identity and presentation to find iterations of their ideal self. Virtual worlds offer spaces for the player to become an avatar that is still their own body but is abstracted in physicality. The player remains present in their body while in the safe space of the virtual world. Being present and safe in your body (especially a trans* body), virtually and physically, has the potential to bring about positive affect.

Gendered Experiences and Their Relation to Video Games

The identity the player takes on in a game through their avatar includes gender, specifically gender identity and presentation. By examining how the player interprets their own gender versus that of the avatar they inhabit, I explore what it means to present as non-cisgender in a virtual space. I start off by looking at how the player conceptualizes their gender in real life and then how that is represented in the virtual world. These concepts lead me to argue how gender euphoric experiences can be attained through embodiment in virtual reality. Exploring cyberspace, gender, and feminist literature guide me to the conclusion that gender experimentation in virtual reality is predicated on embodied experiences and euphoria.

Gender is a very broad term and here I focus on gender identity and presentation. These concepts are laid out well by Judith Butler in *Gender Trouble* and I borrow her groundwork for my interpretations of both concepts. She outlines both gender identity and presentation with the statement “[t]here is no gender identity behind the expressions of gender; that identity is performatively constituted by the very ‘expressions’ that are said to be its results” (34). The first part of her statement presents identity and presentation of gender as separate concepts. These two do not need to match. Take as example a butch woman; she identifies as a woman while her presentation is masculine. Gender identity comes out of the repeated internal actions and validations that fit within a predominant cultural norm of a set identity, for the butch woman, this is femininity. Presentation is enacted through the physical and social performances being put on; gendered performances are what enable a greater society around the performer to

interpret the performer's expression of gender. Alongside performance is also performativity, performativity meaning the relationship between the description of an action and the action itself. The performativity of gender that is allowed through this mechanism of presentation is what also allows the player to embody an avatar that interacts with its world through an already culturally repeated identity. That is, the avatar exists in a coherent world that it is meant to exist in, thus the gender presentation of that avatar is ingrained within the game's world. Being an avatar is as being a person.

The virtual avatars a game provides can be presented in myriad ways, as such the player can –depending on the specific game's mechanics– dress, style, and morph their avatar to fit a certain gender presentation. The player can thus experiment with different gender presentations by creating a character that does not match their physical presentation. Experimentation in the virtual world becomes useful as the game provides a safe space for the player. The games I have looked at so far, *Sable* and *Half-Life: Alyx*, give me a chance to explore how a virtual space can behave similarly to a real-life safe space. These games provide the player with a world and a character or avatar to explore. This exploration is easier than trying the same thing in real life as video games allow the player to perform actions with much less effort than required in the real world. Although VR games like *Half-Life: Alyx* still require the player to move their body to perform actions, they are simplified and made more trivial than the real action. This is seen with *Alyx's* guns (Figure 8) as they do not have weight beyond the controller's and do not replicate full recoil. It is thus much easier for any person to fire a gun in VR than in real life, not to mention the other aspects that go into wielding a gun in real life. I argue that

because, in general, actions are easier to perform in VR than in real life, the performative aspects of gender presentation are also easier to perform. Though it must be noted that performing gender in a game is qualitatively different than in real life. Thus it is prudent to mention that the similarities are substantial enough to warrant a look at how gender performativity carries between the virtual and real worlds. In order to argue this difference as meaningful, I will first examine how gender performativity works, how actions operate through this performance, and what that means within a safe space.



Figure 8. *Shotgun recoil in Half-Life: Alyx, screenshot by author.*

How Performances are Performative in Society

Drawing from Butler's 1988 essay "Performative Acts and Gender Constitution," gender is constructed out of the identities and presentations that we inhabit. These come about through the actions that one undertakes. If the player wishes to be seen as a woman in an online space, there are certain prescriptions the player must adhere to. One can imagine what the hegemonic structure of gender in Western society puts forth as feminine traits.

As gender is societal, meaning it relies on society—and thus community—to be recognized, other people determine if gender is performed ‘correctly.’ This is demonstrably problematic; being able to recognize your own body as meaningful and authentic through self interpretations is ideal. This authenticity is found through approving and recognizing the body that you are in. The aims of *Automorphia* and this paper are to examine how gender can be constituted in a single player environment, meaning both physical and virtual realities, with the hope of reaching this ideal.

The use of the word performance necessitates an external audience. There is not always a physical presence to this audience. The player of this gender identity can be performing for their internal notions of gender that are determined by the hegemonic culture they inhabit. Any internal validation the player finds remains part of this culture as their interpretations of gender come from this culture. There is perhaps a greater examination of play and the nature of performance to be had here. My focus remains on what gender means to an individual. Returning again to Butler, she writes that “[g]ender reality is performative which means, quite simply, that it is real only to the extent that it is performed” (1988). What I want to focus on here is how performance is the core of the player’s presentation. By demonstrating what their gender is, they are able to be affirmed in that identity. Gender is made up of both the identities and presentations that are being inhabited. These need not necessarily line up with each other. The player could identify as male and play a female character in a game without altering their real-life identity. My focus is on the player that changes or adjusts their identity based on their experiences performing a different gender presentation through an avatar.

From my look at gender performativity, I will next examine how it functions in a virtual space. As seen through how embodiment is brought about in virtual reality, the avatar the player uses stands in for their real-life body and thus this avatar is the body that the performance is placed on. These bodies reiterate the predominant cultural norms of a gendered identity in order to function as avatars—even when eschewing a traditional gender presentation, as the player relies on these norms to form this counter identity. While this paper is written from a white, Western perspective, the gender normative actions being repeated by the player exist in the context of the player’s culture. As the games looked at throughout this paper have been primarily developed for an English speaking Western audience they prescribe a set hegemonic idea of gender. My look at *Final Fantasy XIV* does some work to showcase non-Western ideas but is still rooted in my own upbringing and experiences in society. The player interacts within a determinative virtual world through the lens of their interpretation(s) of gender. Putting this together, the player performs actions as an avatar that mimic the predominant actions that the avatar “should” perform in order to be viewed (internally and externally) as valid, or authentic. Thus, I return to authenticity in virtual reality to study how gender presentation relies on these same types of authentic experiences. This authenticity is internally validated by the player and so it is critical that they themselves find the experience to be meaningful. Laura Kate Dale’s *Gender Euphoria* presents essays that detail this authenticity. “Nineteen trans, non-binary, agender, gender-fluid and intersex writers” (back cover copy) showcase moments in their life when they felt euphoric about their gender. These essays retell tales of feeling happy, being affirmed, and realizing

things are better than they seemed. Moments of trans* and queer joy and euphoria are an important aspect of gender exploration. It feels nice to feel nice.

“Authenticity” in the Digital Space

I turn to Legacy Russell’s *Glitch Feminism: A Manifesto* (2020) to determine how cyberspace identities function in both the virtual and real worlds through this lens of authentic being. Authenticity is an internal approval of a body and the recognition of it as such. Russell states that “the digital skin—the screens through which we embrace range, politic via play, and toy with different modes of representation—remains a necessary precondition of the Internet avatar.” (102) This “digital skin” is another phrasing of the avatar that has been looked at here. The avatar is seen as an inherent aspect of being in a virtual world and because of this must be seen as authentic to be useful. A body that does not matter to the player will not offer the possibility of caring and feeling as that avatar. From the importance of authenticity for an avatar, I now argue how the player’s real world self is affected by the virtual world and the extensions that occur in both directions.

Looking at the real-life effects of the virtual world on the player I want to examine Russell’s term “AFK” and the relation it has to gendered embodiment. AFK, an initialism of ‘Away From Keyboard,’ has typically been used in online spaces, especially games, to denote someone who is logged in on the game but not physically present at their computer/device. Russell brings in the term to begin a description of how real life can be seen as an extension of virtual reality. She writes that “AFK as a term works toward undermining the fetishization of ‘real life,’ helping us to see that because realities in the

digital are echoed offline, and vice versa, our gestures, explorations, actions online can inform and even deepen our offline, or AFK, existence” (43). It follows that a virtual body and a real body can be equally important to the identity of the player and thus both are important to how they present themselves. This offers an interesting look at how the word ‘reality’ is used and how the modifier ‘virtual’ is prefixed to it. There is perhaps a more in-depth look to be had on whether to identify reality as the combination of physical reality and virtual reality, bringing in the new term of ‘physical reality’ as a way of equalizing the physical and virtual worlds. This equalization thus strengthens what Russell states about online experiences deepening offline experiences and vice versa. This connection between virtual and physical bodies leads me to examine how gender presentation and identity are explored by a player through a virtual avatar.

Part of being in any space (virtual or physical) is the presence or absence of other people and who those people are. A public space would be any space where there is at least one non-familiar person watching/engaging/existing, while a private space has only the player and potentially persons familiar to the player. Returning to gender performativity, I argue that this performance changes based on the social space being inhabited. This public/private dichotomy extends to video games quite easily, with the majority of online multiplayer games being public and single player games being private. The important difference is on the people who are witnessing and interpreting the player’s gender performance. While I am looking at Massively Multiplayer Online (MMO) games, where a large portion of gameplay consists of interacting with non-familiar persons, there is also a considerable demographic of players who stream their gameplay on Twitch, YouTube,

or other services. These streamers cultivate an audience that watches the streamer play and comments and interacts with them. This audience can thus create a public space from a game that would otherwise typically be a private space.

Making Me, Making You

By looking at games that provide the player with character customization options, such as choosing gender, clothing, and other cultural signifiers, the player can represent a gender presentation of their choosing. With my focus being on VR I am examining the game *Zenith: The Last City* (Ramen VR, 2022). *Zenith* provides the character with multiple customization options (Figure 9) while also being a first person VR game, which makes it ideal for me to explore. The player sees their avatar in the inventory menu and at character selection when starting the game. At a first glance it is easier to create a body in the virtual world compared to the physical. *Zenith* lets you quickly change sex, face shape, hair colour/style, and skin tone when beginning the game. These are all typical features of character creation systems. The character creation process offers the player a chance to immerse themselves into the game's world and systems. This immersion must be a willful act that comes through deliberate, canonical choices in character creation. I use canonical here to imply that a game has player characters that can be deemed to 'belong' within the world. Most games only offer the choice to create such characters. A notable counter are the games created by FromSoftware, such as *Dark Souls*, *Bloodborne*, and *Elden Ring*. These all allow the player to create characters that are not realistic to the game's world to play as. These avatars form the bridge between the game's world and the player's world. The player will see a canonical –ie. meshing with the design of other

characters in the game— avatar as a meaningful way to interpret the game and their placement within it as important to their real-life existence. This idea of a canonical avatar is tied to embodiment and how meaning is made through the embodied character. By creating their own character via canonical options, the player is given an avenue for exploration of how their physical body relates to the virtual body.

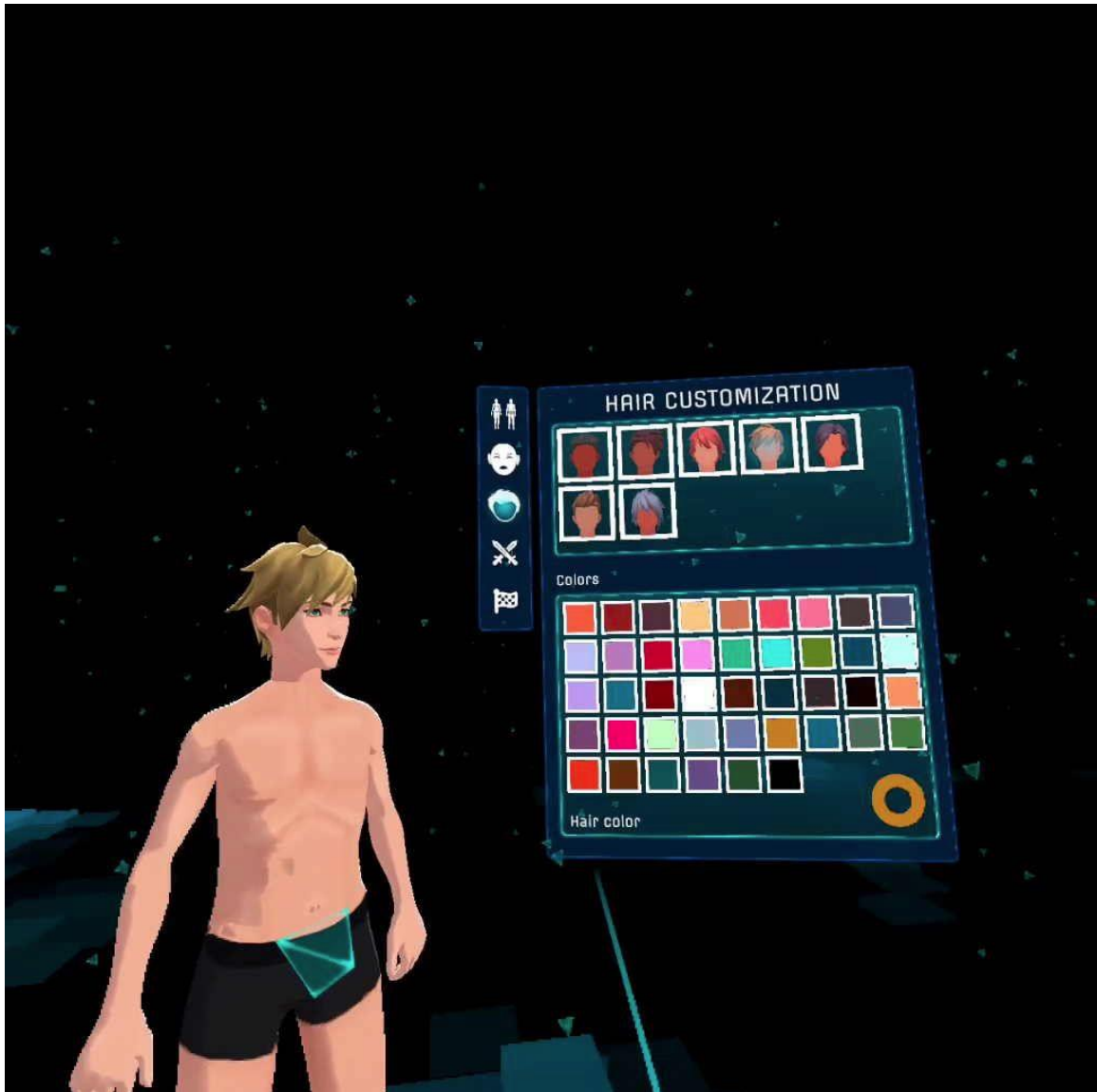


Figure 9. *Character creation in Zenith: The Last City.* Source: Chick, Kevin. “Zenith: The Last City VR MMORPG Review in Progress.” *MMORPG.com*, 27 January 2022, mmorpg.com/editorials/zenith-the-last-city-vr-mmorpg-review-in-progress-2000124203.

Through meaningful character creation and customization, such as in *Zenith* and *Automorphia*, the player has created a direct connection between their physical and virtual bodies. From this connection comes the blurring of the distinction between the two, as the virtual avatar influences the physical body and vice versa. As the virtual avatar is easier to toy around with, the player is able to experiment and explore their gender and see the effects in real-time. While a person could change their clothing, makeup, etc. in real life with enough ease, they cannot adjust physical characteristics such as voice, body size, etc. quite as simply. What this means is that the player is provided a space to experiment that is uninhibited in cost, time, and audience. There are certainly barriers to entry for playing a game in VR, however those barriers remain similar when looking at real-life alternatives. For example, if the player wanted to go through hormone replacement therapy (HRT) to change their gender presentation, they would need to at least start the treatment and wait for results, with added barriers based on location, such as getting approval from medical professionals, going through therapy, confirming and re-confirming their identity, and more. In a game, however, the player can simply press a button and witness the changes. This is not to say that a virtual avatar can fully replace the feeling and experience of a physical transition, but it does provide a supplemental opportunity for exploration. Through this exploration the player is able to find bodies that make them happy to be in, potentially finding an avatar that does not match their current body but that makes them happy. How the player is affected by the avatar they play shows that an avatar with a different gender presentation that matches the player's gender identity can elicit feelings of euphoria and joy in the player.

A Mapped Journey Towards Selfhood

In Russell's *Glitch Feminism* she brings in Lisa Nakamura's idea of "tourism" from Nakamura's *Cybertypes: Race, Ethnicity, and Identity on the Internet* (2002). Russell criticizes identity tourism as limited, saying instead that "glitch feminism views these acts of experimentation as pathways toward a blooming of selfhood" (46). This brings the focus of playing an avatar online into a more exploratory direction, reinforcing the concept of gender experimentation in virtual worlds. By embodying an avatar that the player does not identify with, they have an opportunity to "see what it is like" in that body. This "selfhood" that comes out of experimentation reiterates my idea of the player as both a virtual and physical body. It is a self that is constructed of multiple identities that have been found and forged in the digital world. Through this digital space the player enacts a body that is a "[map] of power and identity." (Haraway, 180) This "map" lends itself towards the language of exploration present in my argument. There can be known markers and points throughout, but the route must ultimately be decided by the player. Mapping their body provides the player with a system of experimentation.

Maps have a long history within games and it seems fitting that there is a metagame brought about in mapping the physical body through a digital body. The term metagame refers to real-world purposeful happenings that occur around the game being played. Boluk and LeMieux define metagames as "not just games in, on, around, or through games. Instead, the metagame expands to include the contextual, site-specific, and historical attributes of human (and nonhuman) play" (320). The metagame enacted through this body mapping is predicated on the knowledge that the player has about their

own body and the experiences they have within the game. Gender is made up of the identities and constructs that we find ourselves inhabiting, these maps thus serve as a means of navigation. A game that allows the player to experiment with their gender identity, directly or indirectly, offers a metagame of self-exploration. Boluk and LeMieux offer that “the metagame identifies [...] the histories of *play*” (321). This play is inherent to the exploration of the player’s gender identity. The performance of gender and the playing of an avatar or character is roleplay. Roleplay can be expanded within the context of games to a broader societal playscape. People are always performing an identity when in society and while this is not play on its own, the knowledge, skills, techniques, etc. that are garnered through roleplay are relevant to the performance. Through an avatar, the player is mapping out their identity and learning the different paths and routes around themselves which allows them to understand how to perform outside of the game.

Gender Matters in Games

What follows is an exploration of how gender is interpreted by the player through different contexts. The performativity of gender relies on culturally dominant norms and avatars in games repeat those norms as games are developed through, about, and as part of culture. Butler’s *Gender Trouble* details what it means to be interpreted as a set gender identity and what existing as that identity entails. What this then brings is how gender euphoria can operate. By internally recognizing the prescriptions for a gender identity, the player can perform these set acts and actions to ensure they are seen as that identity by others and –importantly– themselves. This performativity leads me to explore how gender is represented through digital spaces. Russell’s *Glitch Feminism* again provides an

alternative mode of identity exploration. Rather than ‘walking a mile in someone else’s shoes,’ the player is trying on that same shoe or similar options at the shoe store. Perhaps that other person’s shoe does not fit the player and they instead need a different size, or another style altogether. The player would not determine this without trying on a few options first. Thus, by playing a game as an avatar that does not represent their current physical body, the player is able to find what body they are comfortable inhabiting and potentially experience gender euphoria. This virtual body remains part of the player’s overall identity, the physical and virtual are not wholly separate.

Many games have a character creation system, which means the player can have an avatar that looks like them, or a character they want to play, or just an inconsequential person. In any case, the player is connected to this avatar through the barrier between the physical and virtual worlds. Focusing on character creation and the methods the player uses shows how the player might create an ideal self-image in their avatar. Playing *Zenith: The Last City*, the player directly inhabits the avatar they make, they perform actions not on a body but as a body. This of course returns to the sense of embodiment and what it means to be embodied in virtual reality. *Zenith* provides a direct method for agency, self-location, and body ownership by nature of being a first person VR game that allows the player to move around as they wish in a coherent world. The avatars the player may create lead to a discussion about what it means for the player to play as a body that is not their own. These bodies are part of what Russell examines in *Glitch Feminism*, where she looks at how one might toy around with a differently identified body, which brings me to Nakamura’s “identity tourism.”

The term tourism can carry baggage, as it is rooted in the idea of visiting someplace without needing to meaningfully interact with the local culture and instead can bear witness to its happenings without much personal consequence. I grew up in Niagara Falls, famously a tourism-centric city, and worked in the tourism industry and through it came to experience what tourism on a large scale looks like, crowds of people interested in a surface level look at the cultural object of interest. This real-life tourism is the same as how Nakamura sees identity tourism; the tourists are not engaging with the identity of interest on a deep enough level. While I think it is important to recognize the potential for harm, I instead take this concept of exploration of identity to be “a blooming of selfhood” (Russell, 46). These other identities are a chance to see what fits best and also interact meaningfully within them. Through exploration, the body becomes a map. The player is investigating aspects of themselves and determining what paths are best suited for them. Maps do not need to be representations of a physical space, they can instead operate as a vehicle for repeated acts of exploration; The player can retread the ways they have gone on their bodymap. What this brings is a method for trying different gender identities and presentations and finding out what feels best. The structure of the map simply provides a route for the player to take as they wish; it is possible to travel in different directions at any time and find a new destination along the way.

In all of these directions, the player comes to find themselves. *Automorphia* provides that freedom of exploration as base gameplay. Moving around a virtual world, piecing together a body, and exploring a scene that represents that journey is the goal of the game. The world of *Automorphia* is the player’s body; the shards of the mirror they

collect, the order they do so, and how they interact with the reformed mirror all determine how the player interprets their own body, both virtual and physical. Having the game in first person VR offers this direct connection between the player's bodies and means they can be their own mapmaker. Ultimately, *Automorphia* works to interpret the arguments presented in this paper to determine a pathway for gendered embodiment in virtual reality games. The consequences of *Automorphia* are thus laid bare in the following chapter, the success of the game to be determined by its players.

The Creation of *Automorphia* and its Effects

The title for *Automorphia* is close to the word ‘automorphic,’ which is defined as “patterned after self” by the Merriam-Webster dictionary. I first came up with the title and then searched for its meaning to find it was not an existing word but was related to one that had a conveniently fitting definition. Thus what *Automorphia* aims to do is quite self described, the player collects pieces of a broken mirror and as they piece the mirror together they can adjust the different parts of their body as they please, in essence the player is patterning their avatar after themselves. This allows the player to create an avatar of their own while seeing that avatar through a mirror. This invokes feelings of self as the object of the mirror is tied to the act of perceiving oneself. From the player’s perception of how they look, *Automorphia* is meant to allow them to experience gender euphoria as it is outlined in the previous chapter. By looking at the sensations that I have felt, and the media that has caused them, I designed *Automorphia* around what brought gender euphoria to me. These feelings of euphoria are used by the player to experiment with gender presentation and determine what is right for them.

Beginning with Elliot Page’s *Pageboy: A Memoir* (2023), a text that specifically brought me gender euphoria, I look at what the sensation of gender euphoria feels like for me and why that mattered to the development of *Automorphia*. These sensations lead toward a look at two other pieces of media, *Neuromancer* (Gibson, 1984) and *Cyberpunk 2077* (CD Projekt Red, 2020), that present non-VR embodiment technology and how those can be related to the contemporary use of VR for games. These also both involve erotic experiences as part of their respective worlds and thus it is prudent to incorporate a look

at VR pornography and the effects on gender it has on its users. As *Cyberpunk 2077* provides a more game-like system, and is also a game itself, I then examine four virtual reality games that influenced the development of *Automorphia* in differing ways while still building upon each other. I start with a return to *Half-Life: Alyx* and its less explicitly gendered experiences along with the game *Warhammer 40,000: Battle Sister* (Soul Assembly, 2022), which operates similarly but with a full body avatar for the player to see. Both do not create a deep gendered connection between the player and their avatar and thus provide a lower limit for *Automorphia* to surpass. The two games that provide that connection in more depth are *Zenith: The Last City* and *Blade and Sorcery* (WarpFrog, 2018) as they both have character creation systems that allow the player to see their avatar and thus offer greater control over the gendering of said avatar. From these customization systems, *Automorphia* comes to offer the player direct control over their avatar and thus this avatar can represent the player as an extension of their body. As the player is extended into virtual reality they are exploring and creating their own gender map built upon the foundations set by my journey in the creation of *Automorphia*. These player-made maps can thus be seen as reflections of my own map through their eyes, offering a reinforcement of the mirror as a critical component in the playing of *Automorphia*. These reflections are alternate versions of the map I have created, they are imperfect reflections yet perfect representations of the players that made them.

Reflections of Sensations

Mirrors are not only tools people use to look at their own reflections – they are also cultural objects. As mirrors allow a person to see themselves as through the eyes of

another person, albeit reflected along the vertical axis, they offer a chance for the player to identify their own body. The player can both recognize the body they see in the mirror as their own and also see how that body appears to others. *Automorphia* uses mirrors to make the player realize how their body is being interpreted. With the player directly creating the avatar body part by body part through interaction with the mirror they are able to control this interpretation that others see. Although *Automorphia* is a single player experience, the avatar made in it can be seen as a testing ground for different gendered (re)presentations. Mirrors are generally a single player experience in real life, most times you are the only person looking at the mirror and examining how you look and often caring about your appearance due to pressure from people who are not present. This is of course tied into beauty standards and the importance placed on looking good for others. Gender presentation is inextricably tied to these predominant standards of beauty and appearance and *Automorphia* looks toward a future where these societal expectations are removed. The game allows the player to create their own path and their own map of gender. The gameplay consists of the player moving around a small section of forest and collecting pieces of a mirror to reconstitute their body and its gender (or perhaps lack thereof). By placing the player in a forest, a space of nature, the game works to offer a rewilding of gender that is not tied to hegemonic ideals of what gender should look like as there is no society or culture explicitly present in the game's world. Although *Automorphia* cannot and does not remove the implicit societal pressure that affects gender presentation it does hope to push the boundaries of what gender can look like in virtual reality and thus effect change in the real world through mechanisms found in the virtual world. What this ultimately means for *Automorphia* and for myself is that the

game pushes me to feel affirmed in my identity and aims to push others towards the same feeling.

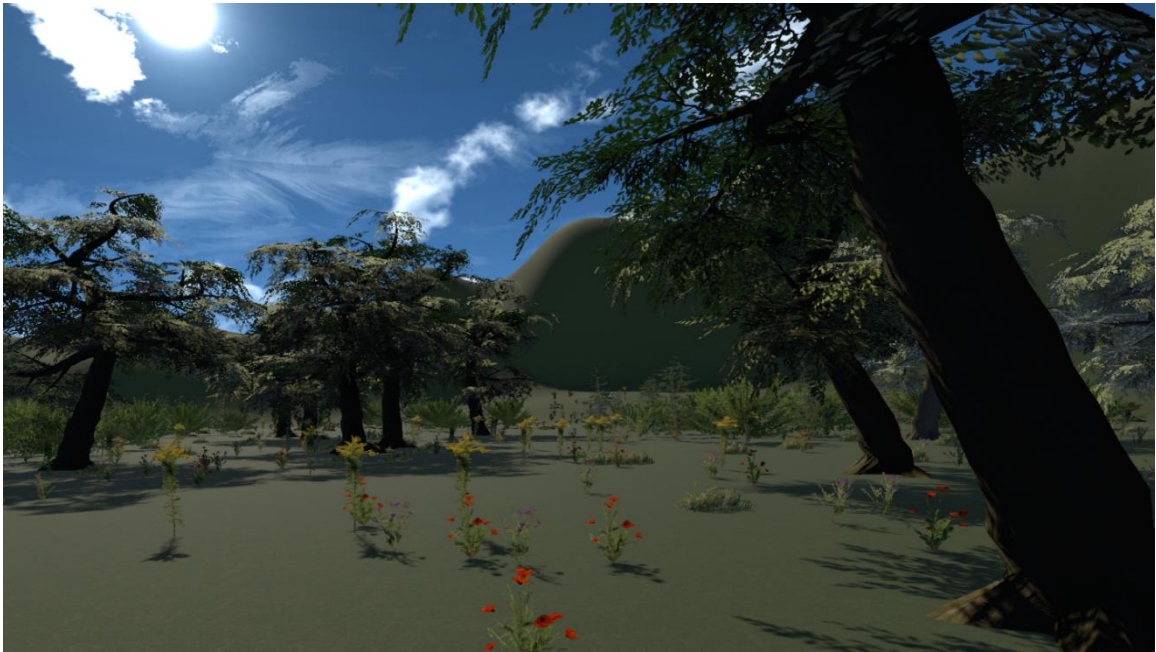


Figure 10. *General environment of Automorphia, screenshot by author.*

There is a particular sensation I get when feeling affirmed in my gender: a tingle starts from my spine, it shoots out across my skin to the extents of all of my limbs – it is a ripple that I instantly understand as joy and happiness. This feeling mostly occurs when I consume media that details a moment of gender euphoria within its characters, when the character feels seen in their identity and happy to exist in that moment. This moment of euphoria is easier achieved in narrative-driven content where I can get invested in the story of the character and how their gender matters to them as the character develops. This sensation most recently occurred in Elliot Page’s memoir *Pageboy*. The positive moments where Page talks about his life and the experiences he had with gender especially resonated with me. In one passage where Page is talking about seeing his shadow and seeing a boy in that shadow he writes about seeing his reflection while

wearing a mask: “Like my shadow, I saw the boy. Unlike the shadow, the boy looked back at me. A thrilling vibration throughout my body I was not anticipating. It was jarring in a good way—a rush” (237). I felt that sensation when I first read this passage and feel it again on every reread. This experience is an empathetic gender euphoria to me that I term as gender empathy. By relating and recognizing the feelings another person has around their gender, one is able to determine their feelings around their own gender. When I see others happy in their gender identity and/or expression I feel that tingling sensation. The aim of *Automorphia* is to elicit that sensation and feeling not only in myself but also in others. *Automorphia* achieves this by having the player directly in charge of the gender of their body. As the player collects the pieces of the broken mirror, they are directly enacting gender euphoria in the body they are inhabiting in VR. The avatar the player has in the game is meant to represent the player themselves and thus they are creating a feeling of gender euphoria in themselves through gender empathy via a direct connection between the player and their avatar.

Embodied Feelings in Non-VR Media

I want to bring in instances across forms of media where one person inhabits the senses of another and is essentially living through the other body. While these are not virtual reality they do lend themselves towards the same conversations about playing as a different body and what that means for the player. The instances I have come across have been primarily in the science fiction genre and more specifically in the cyberpunk genre and so I focus on two pieces of cyberpunk media. Starting with *Neuromancer* and its “simstim” technology, the characters Case and Molly use this tech to have Case inhabit

the senses of Molly. Case is able to see and feel everything that Molly does while he is “flipped” (in-world term for using a simstim) into Molly. The first time they use this tech Molly shows Case the extent of feeling that the simstim provides, as right after Case flips comes the passage: “[Molly] slid a hand into her jacket, a fingertip circling a nipple under warm silk. The sensation made [Case] catch his breath” (Gibson, 56). In that scene Case feels an erotic gendered experience through Molly’s body. Can this particular sensation be captured in VR? Can VR then create a more explicit experience of gender? These experiences can be explicit in multiple ways, such as in VR pornography. The scenes being produced rarely touch on non-cis identities yet gender can be affirmed for cis and non-cis people alike. Thus VR pornography creates a more intimate experience that allows the user to be less of a watcher and more of a participant, although they are still abstracted through the VR headset. Evans (2020) writes in his article that the current state of VR pornography “could provoke a rethinking of how pornography itself is experienced and no longer consumed” (5) and thus the erotic aspects of the experiences in *Neuromancer* represent this shift. The scenes in VR pornography are something to be actively experienced rather than passively consumed as the watcher becomes part of the scene.

These sexual and erotic experiences are also present in the video game *Cyberpunk 2077* through its “braindances” which differ from the simstims used by Case and Molly in that they are not live and instead a replay of recorded content. Where a simstim does not give you any control, a braindance allows you to move a floating camera around the scene, isolate audio and video, and pause, rewind, and fast forward. Within the plot of

Cyberpunk 2077 braindances are mostly used to investigate scenes further, akin to the detective mode of the *Batman: Arkham* game series, where in *Cyberpunk*'s world braindances are often used to experience specific sexual or violent scenes (and likely both at once given the tone of the cyberpunk genre). These braindances are closer to VR games than simstims are and thus are specifically relevant to *Automorphia*. As a VR experience braindances do not have the full range of interaction that contemporary VR games do, however they allow the user to see directly through the eyes of another person and relive their experiences with all of their senses. This reliving is akin to many VR games and experiences that exist currently as they offer the chance to play as an avatar in a set world. A few of these games are discussed below and they outline how *Automorphia* is founded on the existing mechanisms of avatar embodiment in VR games.



Figure 11. *NPCs partaking in braindances in Cyberpunk 2077, screenshot by author.*

The Foundations for *Automorphia*'s Design

Automorphia is built from my own experiences with gender in virtual reality games and it works to extrapolate from those games and create a method for gender exploration as the main form of interaction. To contextualize the gameplay of *Automorphia* I will examine the games that brought me to the final experience I created. In these games I played feminine avatars, either by choice or because that was the only option in the game. I recognized that I enjoyed playing specifically as these avatars because it offered me a chance to play around with gender in a way that is more accessible than real life. It is not necessarily that I am unhappy with my real-life body and identity, but that the opportunity to inhabit a feminine body in VR allows me to have different experiences than I am able to otherwise. There are four VR games that I have played and want to discuss in terms of their impact on me gender-wise. These are *Half-Life: Alyx*, *Warhammer 40,000: Battle Sister*, *Zenith: The Last City*, and *Blade and Sorcery*.

As I have already examined the embodiment aspects of *Half-Life: Alyx* I now want to look at the gendered experiences I have had in the game. Alyx's gender is made known by how other characters refer to her and with any knowledge the player has of Alyx from other games in the *Half-Life* series. The primary gendered sensation in *Half-Life: Alyx* is decidedly aural; the player is hearing words that make them understand they are playing a woman. By allowing themselves to be immersed in the game's world they can understand their body as Alyx's and thus as a woman's body. I found while playing *Alyx* that I did not get a total sense of being in a feminine body as, while the sense of embodiment is executed well by *Alyx*, the game does not offer a particularly strong gendered experience. This gendered experience is not the goal of *Half-Life: Alyx* however I will still dissect

where it falls short on delivering that experience and how those deficits are avoided in *Automorphia*. *Alyx* does not show the player a full body of their avatar neither in reflections nor when looking down at where their body would be, as such the player does not get a total sense of how their body is represented in the world. *Automorphia* takes that to heart and focuses on presenting the player with their body by explicitly making mirrors the primary interaction in the game.

The following games offer more cohesive gendered experiences, each compounding on the other to showcase what the design of *Automorphia* is founded upon. *Warhammer 40,000: Battle Sister* is similar to *Half-Life: Alyx* as both are linear games where the player's avatar is a woman. *Battle Sister* is a first person shooter (FPS) action game that has the player fight through hordes of enemies through different levels and maps. The important aspect that differentiates *Battle Sister* from *Alyx* is that the avatar has a full body that can be seen when looking down. The body is explicitly a woman as the game refers to the player as such and due to the avatar itself being feminine which means the game is an explicitly gendered experience. When I played *Battle Sister* I enjoyed being able to recognize my avatar's body, and thus my body, as feminine and interact with the game in that body. This meant I was able to play within a world I was interested in as well as an avatar that I wanted to be in which subsequently allowed me to feel more connected to the experience. For *Automorphia* I wanted to replicate the sensation of being in a body that I enjoyed being in and expand it to other possibilities. This meant allowing the player to customize their avatar and that experience was drawn from both *Zenith: The Last City* and *Blade and Sorcery* as discussed below.



Figure 12. *Looking down at the avatar's body in Warhammer 40,000: Battle Sister, screenshot by author.*

We will look at *Zenith: The Last City* as the character creation system in the game has been discussed in the previous chapter. The game gives control over the avatar to the player as a body to be changed to the player's liking. The way this avatar is presented makes the body not feel like it is directly the player's as it is shown from a second person perspective. The player is looking at a different body than their own but one that is still affecting their in-game body. It is as though the player is changing a doll of themselves rather than themselves directly. This leads to a disconnect between the player and their avatar as the first experience with the avatar is not an internal one. The further experiences with the avatar are either by looking down at their body or by opening the menu and seeing that avatar-doll. *Blade and Sorcery* begins in much the same way as *Zenith* but every other time the player sees their avatar is from a first person perspective. The player can look down at themselves or look into the mirror provided in the hub area

of *Blade and Sorcery*. Thus although the game starts with a disconnect the connection is later forged and remains there until the player creates a new avatar. The difference in gameplay of *Zenith* and *Blade and Sorcery* also plays into the strength of the connection found in *Blade and Sorcery* as the game provides a more visceral experience of being in the avatar. I found this visceral feeling came about through the fighting action of *Blade and Sorcery* as it simulates weight and consequence. As the player swings their controller and thus their weapon, the game uses haptic feedback—meaning the controller vibrates—to mimic resistance when the weapon hits an object in the game. *Zenith* meanwhile felt less meaningful and, to return to *Sable* and immersion, it was less of an immersive experience as it failed to keep me engaged with my avatar and the world. In order to remain engaged it is prudent to make the connection between player and avatar as soon as possible and to avoid causing a disconnect beforehand. *Automorphia* uses the mirror to ensure the player only sees their body directly while still being able to see how they are presented to others.



Figure 13. *Character customization in Blade and Sorcery.* “Blade and Sorcery VR Review.” VRBeginnersGuide.com, vrbeginnersguide.com/blade-and-sorcery-a-great-vr-fantasy.

What is Automorphia?

I want to break down the technical specifics of *Automorphia* and explain the precise details of its gameplay. The player’s avatar in *Automorphia* is a blobby purple creature with a left and right arm, a torso, and a head, each not directly attached to the other parts (Figure 14). This unusual body allows for gender to be abstracted away from hegemonic understandings while still allowing for meaningful embodiment by the player. Returning to Krekhov et al.’s work on embodiment through non-humanoid avatars and Peck et al.’s work on embodying differently raced avatars shows how I was able to create a body for the player that does not look like them but that can still be mapped comfortably to their real-life body. The gameplay of *Automorphia* is enacted solely through this avatar. The

player can teleport around a wooded area set within a valley to explore the world of *Automorphia*. The player starts near an empty frame of a mirror alongside a board with instructions on how to play the game and a board with credits for the game. To move around the scene, the player pushes up on the joystick of their VR controllers to teleport to the spot indicated by the marker in game. If the player has space in the room where they are playing they are able to walk around the immediate area around them. In order to traverse the entire map and acquire the four pieces of the mirror the player must teleport. The player is free to explore the level as they wish, teleporting within the overall bounds of the map. Allowing the player to teleport at will serves to break away from linear game design as the world of *Automorphia* becomes an open space to explore in no set order with no set requirements. The player can move around and in doing so will not only explore the level but also the relationship they have to their body in that space.

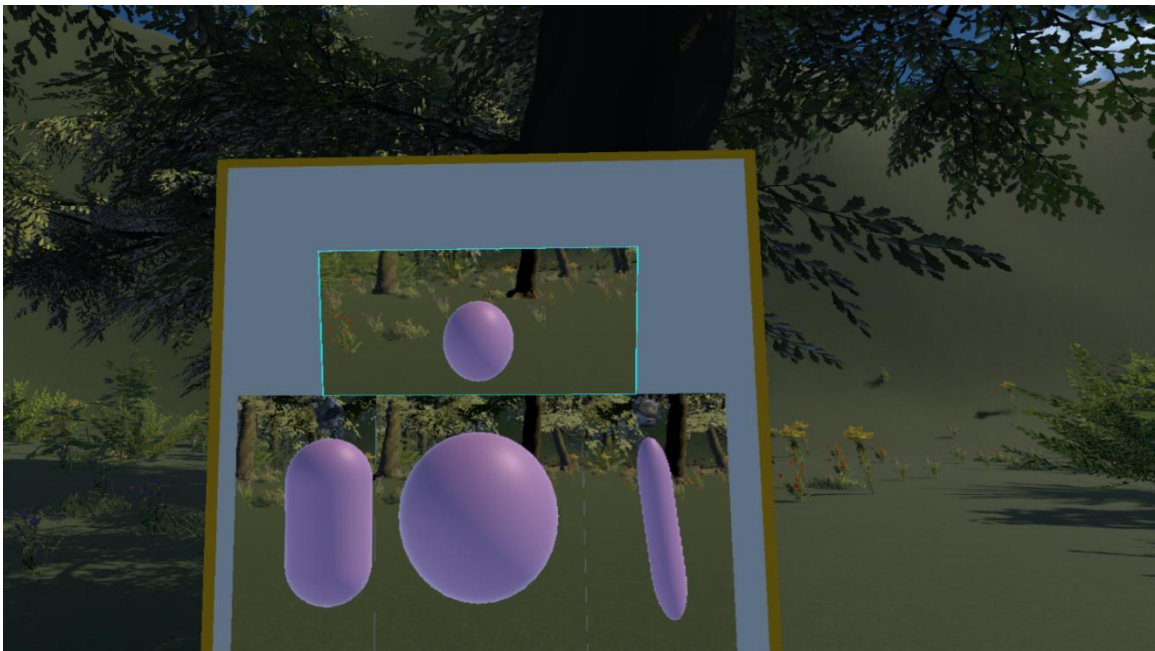


Figure 14. *Avatar body as shown in mirror pieces in Automorphia, screenshot by author.*

As the player moves around they will come across four different pieces of a mirror. Each of these pieces reflects the environment along with one set body part of the player's avatar. There is a piece for the torso, head, left arm, and right arm. The player can move their hand near the piece which outlines it in yellow –indicating it can be interacted with– and close their hand to grab the piece. Once a piece is grabbed it disappears from the scene and reappears on the frame of the mirror at the starting location. After a mirror piece is collected, the player can use their controller to point at and select the piece, outlining it in blue. Once selected, the player can press A or B (or equivalent) on the controller to scale the body part reflected in that mirror piece. The length of the arms does not change but the radius can be scaled down to a minimum width of 5 cm and scaled up to a maximum width of 50 cm, the head is scaled in all directions, from 5 cm to 70 cm, and the torso in radius from 5 cm to 80 cm. The player is able to scale each body part up and down as they please once they have acquired the mirror piece for that body part. There is no obligation for the player to collect any or all of the pieces of the mirror as there is no 'ending' to the game. The player can quit at any time (or continue indefinitely until forced to stop for external reasons) and there is no indication in the game that they did not finish, as by quitting they have decided they are finished with the game. I wanted the game to be structured in a way that the ending was not set by the game but rather by the player. This want draws on the idea of queerness going against general norms and especially against chrononormativity as outlined in Chapter 7: "Speed Runs, Slow Strolls, and the Politics of Walking: Queer Movements through Space and Time" of Bo Ruberg's *Video Games Have Always Been Queer* (2019). *Automorphia* works to not align with linear narratives of gameplay and story and operate in the same space as other queer

works that go against the idea of time and space as needing to be interpreted through a normative lens. This talk of space returns me to the idea of a map of gender identity where there is no end to the map but rather a continual set of paths that the player can choose to embark on as they wish.

The lack of ending in *Automorphia* also fits this project as a whole as there is certainly more work to be done on gender empathy. The idea is to lay out a framework from which further development can be made. Thus, *Automorphia* puts forth only the first steps towards a larger movement of games that evoke gender empathy in their players. It does this through a pared-down set of mechanics that focus on the fundamental concepts around embodiment, character creation, and gender that have been outlined in the above chapters. A few potential features that could be added to *Automorphia* or other games would be: body shape by having different shapes for the body parts than rounded blobs; colour selection for each body part; more aspects to adjust, such as scaling different parts of each body part. These are all areas of further development that can be experimented with to determine how they affect the player's sensation of both embodiment and gender empathy. The version of *Automorphia* completed for this project does not implement these ideas and remains less complex for a few reasons, primarily to serve better as a jumping off point as a framework.

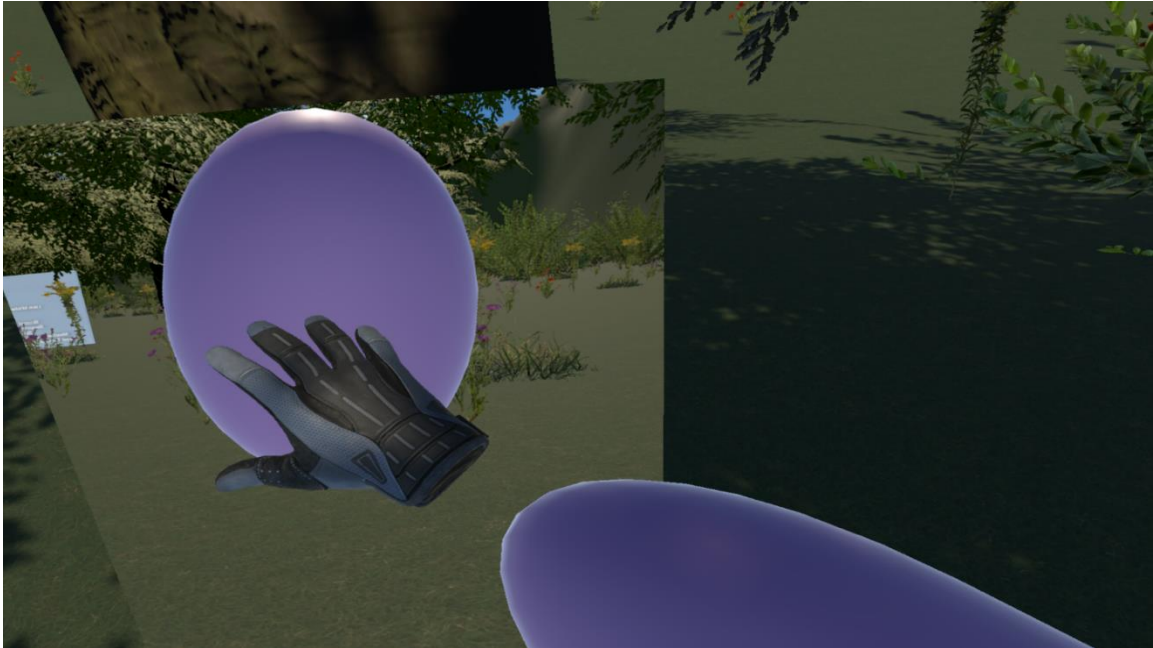


Figure 15. *Player grabbing mirror in Automorphia, screenshot by author.*

In order to explain why *Automorphia* works the way it does I want to go into the theory behind my design decisions. With the player's avatar being purple with rounded capsules for limbs that are detached from the torso I intended to create a body that was completely non-gendered and non-human. This avatar would thus not only be able to stand in for any player but also would mean the player must interact with a body that is not theirs and not related visually to theirs. The purple avatar is still meaningful to the player and can allow for embodiment as an avatar does not need to be human for the player to be embodied (Krekhov et al.). The mirror in *Automorphia* exists to give the player a way of seeing their body but also to a way for them to think on why that body matters.

What Was Gained in Development

The gameplay of *Automorphia* has the player collect pieces of a mirror. Whenever the mirrors are visible the player can see their body and also can look down to see their arms

and torso at any time. This works to offer the player a chance to experience a gendered body in virtual reality and have that body be presented back to them as others in the world would see it. The mechanics of this comes from the experiences I had in the games mentioned in this chapter and thus *Automorphia* works to build on what was learned and create an explicit experience of gender exploration. Where *Half-Life: Alyx* does not provide an avatar for the player to see and where *Warhammer 40,000: Battle Sister* provides only a feminine avatar to play as, *Automorphia* allows the player to see the avatar that is created by the player and that is then gendered as the player sees fit. This character creation comes from *Zenith: The Last City* and *Blade and Sorcery* where both allow the player this same level of customization of a gendered avatar. *Automorphia* goes beyond and forges the connection early and often between the player and their avatar to ensure that the player sees the avatar as an extension of themselves. My experience playing *Automorphia* is one that reinforces the desire to experiment with and explore gender identity and presentation and determine for myself how I want to be presented to others.

Not only has the gameplay of *Automorphia* had an effect on how I interpret my gender but the development and creation of the game has been crucial for that change as well. The connection that is made between the player and their avatar is stronger when that player is the developer of the game. As I have made and worked on the game directly I have been connected at every step of the process. The avatar becomes me in the way that the project as a whole is mine, it is part of me and I am part of it. What has been learned from this is much of what has been found in other games I have made: I have become

entwined with the project. For *Automorphia* this had a particular effect in that I was essentially creating myself in the game as I went. The avatar that I made for the game is firstly representative of myself as it is based on my interpretation of what gender can mean. The profound effect of this is that through developing a personal game one can come to better understand their own self and what it means to be themselves. The language of “the player” falls apart and instead you become “the developer” and “the creator,” these terms now bringing the maker to the forefront instead of being hidden behind the game. Through this I as the creator have mapped my explorative gender journey into the game itself. It is thus time for the players to create their own map out of the journey I have started and it is up to them to determine what that journey will do for themselves and their identity.

The End of a Journey Yet the Start of Many More

This gender journey is a culmination of the games I have played and the texts I have read and their effect on me. Through the use of mirrors, *Automorphia* ultimately works to allow any player to create their own experience of gender exploration that is meaningful to them. These mirrors operate through cultural structures that dictate how people see themselves through the eyes of others. Mirrors reflect both internal and external aspects of a person and thus are especially useful for (re)interpretations of gender. The player in *Automorphia* can use the mirror to enact changes on their avatar’s body and experiment with gender presentation. The goal of this experimentation is to find those feelings of gender affirmation and gender euphoria that I have found in various pieces of media. This sensation is most present for me in media that contains a person affirming their gender,

with Elliot Page's memoir *Pageboy* being a recent example. There is also other media that does not evoke this sensation directly but allowed me to develop *Automorphia* as a game that can bring about gender euphoric feelings.

I first looked at *Neuromancer* and *Cyberpunk 2077* as a basis for how embodiment technology can be thought about as these two pieces of media both represent non-VR experiences of embodied gender. The simstims in *Neuromancer* give Case, a man, the opportunity to inhabit the senses of Molly, a woman, and thus offer Case a differently gendered body to experience the world with. *Cyberpunk's* braindances give the player not only the senses of another person but some control over the camera in the scene and what is being focused on, which let the player have a more embodied experience due to that increased control. I then examined VR pornography, which offers the watcher a more in-depth experience through interactivity that increases intimacy and thus better provides the watcher the ability to interpret their own body. In the study by Dekker et al (2020) they conclude that VR pornography may be a useful tool in overcoming performance anxiety (5). Building on this conclusion, I argue that the user's perception of their own body can be positively affected in these erotic experiences and I extrapolate beyond to any experience that incorporates further control over the body as useful in this same capacity, such as gender. Looking at VR games that have the potential for these gendered experiences, I show that those with character creation meaningfully connected to the player, such as *Blade and Sorcery*, offer a greater chance for gender euphoria. Taking from *Half-Life: Alyx*, *Warhammer 40,000: Battle Sister*, and *Zenith: The Last City* and their lesser connection to gender, I learned how to make *Automorphia* explicitly about

gender. Thus *Automorphia* incorporates a mirror and a full body avatar to ensure the player always sees their avatar's body as an extension of their own, and through this extension the player explores their own map of gender identity in order to better understand how they wish to be seen in the real world. The final goal of *Automorphia* is to culminate the research throughout to create an opportunity for players to experience gender euphoria via the customization of their avatar through a direct and meaningful connection with said avatar. The games and other media I have looked at pushed *Automorphia* towards its final state and thus I hope that those who play the game are able to feel the way I did and understand the experiences I have gone through, developing their own sense of gender empathy.

Where This Project Comes From and Where It Leads

As I wrap up the above chapters I also want to look at the work this project comes out of and the potential for future work in the same space as *Automorphia*. I first reiterate the arguments I made throughout this paper by reflecting on what I aspired to accomplish with each chapter, returning me to the themes of embodiment, gendered characters, and gender empathy. Next, I breakdown the framework that *Automorphia* puts forth and talk about potential applications of said framework for future games. I complete my argument by thinking on what I have learned and accomplished throughout this project.

Recapping The Chapters

Starting with my exploration of embodiment and immersion in VR, I argued that the framework for the sense of embodiment is a useful tool for creating games that can effectively bring change to the player. This change is focused on gender identity and how the player is able to experiment and explore a body and the meaning made out of that due to the embodied feelings of playing that avatar. The meaning found here is figured through a dissection of the sense of embodiment and its constituent parts: the senses of agency, self-location, and body ownership. I looked at what agency and embodiment mean in the general context of video games by examining *Sable*, a non-VR title. Through *Sable* I explored aesthetic principles and game feel and what connections can be made between the player and their avatar, primarily finding these connections through kinaesthetics. Returning to the sense of embodiment I looked at *Half-Life: Alyx* and how it, as a VR game, offers a robust version of each sub-sense. I argue here that the embodiment found in VR games allows the player to extend their real-life body into the

avatar's body and find representation for their identity. From this identity the player's gender identity is critical to this project, as well as how they can explore that identity through the extended representation in their avatar.

I now look to gender to argue that VR character creation systems, such as in *Automorphia*, allow the player to explore their gender identity. This exploration is predicated on the embodiment that is found in virtual reality and is enacted through meaningful bodies. This meaning is assigned by the player and is found more easily when the game experience feels authentic. While authenticity in terms of gender is problematic, I am focusing on how the player interprets their body and how it matters to them. This is seen through experiences that allow the player to embody their avatar and subsequently feel that avatar as part of their own identity. I am positing that this method of authentic meaning found through self-representation has the player make a map of their gender identity and presentation. The player explores different routes at their own leisure with no set end for their mapping journey. My hope is that the player can understand a game like *Automorphia* to be a useful aspect of their journey and to interpret it as another stop along the way. This continuing journey of gender exploration brings me to look at myself and how *Automorphia* is created out of my own experiences.

Focusing on the development of *Automorphia* I looked at various media that influenced its creation. As *Automorphia* makes use of mirrors to engage the player's sense of embodiment, I wanted to explore media that gave me those embodied feelings and how those feelings came about. An aspect of exploring these feelings was examining

specifically gender euphoric experiences such as my reading of *Pageboy* as an example. When reading *Pageboy* I would get a tingling sensation that would elicit happiness and joy across my body, I recognize this as empathetic gender euphoria and term it gender empathy. This empathy is extended into embodiment by looking at *Neuromancer* and *Cyberpunk 2077* and the ways they handle characters seeing through the eyes (and feeling through the body) of another person. Both of these have in-world systems of inhabiting another person's sensations without VR and I use them to showcase how VR games are able to take a further step towards direct embodiment. I follow by breaking down VR games that can offer experiences of gender embodiment and what *Automorphia* is able to take away from them for its own development. What this means is that *Automorphia* was created out of the gendered experiences I had across all sorts of media and is built upon the fragments of embodiment that have been found throughout. Ultimately, *Automorphia* serves as a tool that the player is able to use to explore their map of identity and is simply one part of a path on the map.

What Comes Next

Looking toward the future of gendered embodiment in games leads me to think again on gender empathy and what it can mean within VR. It is a relatively common thought that virtual reality as a method of play is an ideal “empathy machine” allowing for “empathy games” (Ruberg, *Video Games Have Always Been Queer* 180, 214). These types of games allow the player to experience the hardships of an identity other than their own and often they are games made by and about queer people. While *Automorphia* could be argued to be in this same space, I instead want to posit that it allows the player to

experience the positive aspects of being another identity and that it does so through internally-mediated means. That is to say that *Automorphia* works against the typical sense of both queer games and VR games as “empathy games” by instead having the player empathize towards a notion of intrinsic empathy. This shift is operated through the mechanics and systems in *Automorphia* as a showcase of what possibilities exist for future gender empathy games.

Through *Automorphia* I have developed a framework of expectations for gender in VR that details what can be done next. The game not only aims to stand on its own right as a part of this project but also to demonstrate how to create a game that deals with gender empathy. I will lay out what this framework consists of and what it means for future endeavours in this space. The framework primarily is built on queer game design principles, meaning the game should work against hegemonic ideals of what a video game is by creating alternate forms of play. *Automorphia* abstracts the goal of the game to be a non-linear exploration of the body; the player *can* collect the four pieces of the mirror, but there is no indication that they must do so to complete the game. The player is able to quit the game at any point or remain immersed for as long as they desire. The affect of this type of gameplay experience is explained in Ruberg’s *Video Games Have Always Been Queer* where they write: “queer movements through time and space offer profound opportunities to play with alternative ways of being in the world” (208). Thus, games built out of *Automorphia* play around with “alternative ways of being.” The framework exemplified in *Automorphia* also puts forth the use of VR hardware as a catalyst for critical gender empathy. As explored in previous chapters, VR offers the

player an embodying experience that allows them to be placed within a body other than their physical one. From here I argue that VR games serve as the ideal medium through which to put gender empathy at the forefront and have the player find meaning within their virtual body.

Ultimately, this paper, *Trans* Identities, Virtual Realities; Gender Embodiment in Games/Gaming*, aims to examine how trans and nonbinary identities can be explored through embodied avatars in virtual reality games. The purpose of this project has been to put forth a framework and guidelines for how to achieve this embodiment and how to create meaningful avatars for players. The hope for this project is to inspire future games that deal directly with gender empathy and to add to the literature surrounding the “queer games avant-garde” (Ruberg), especially in terms of what VR can do. For example, future games might include more work on intersectionality, where race, ethnicity, class, ability, etc. become part of the player experience.

This paper has been expressly autoethnographic with regards to my exploration of how I feel about my gender and the experiences I have had that led me to my arguments. This form of exploration allowed me to realize how I interpret my body in both physical and virtual reality and to further determine what it means to be embodied in an avatar that does not represent my body. Overall, this paper has argued how the use of embodiment, character creation, and gender empathy can create a game that evokes meaningful avatar-player relationships that the player can use to explore the map of their gender. The initial goal of this project was to give space for me to explore my gender and I am now at a

place where I am more comfortable and confident with my identity yet I recognize the capacity for continual exploration and experimentation with no set end goal.

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Appendix

Link to *Automorphia* - hender99.itch.io/automorphia