

**CREATING AND ANALYZING VALUES, ETHICS, AND INCLUSIVE
DESIGN IN ENVIRONMENTAL STORYTELLING FOR VIDEO GAMES**

by

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Dedicated, also, to Bo the Cat for making sure I was up on time every day.

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TABLE OF CONTENTS

LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF ABBREVIATIONS	x
ABSTRACT.....	xi
CHAPTER 1. INTRODUCTION.....	1
1.1 Statement of the Problem.....	1
1.2 Research Question.....	3
1.3 Significance	4
1.4 Scope.....	4
1.5 Definitions	5
1.6 Assumptions	8
1.7 Limitations.....	8
1.8 Delimitations	9
CHAPTER 2. LITERATURE REVIEW	10
2.1 Narratives, Video Game Environments, Environmental Storytelling, and the Role of the Player.....	10
2.2 The Importance of Video Game Diversity and Current Issues with Diversity	12
2.2.1 Gender: Hypersexualization and Sexualized Violence	14
2.2.2 Race and Culture: Sacrificial Blackness, Erasure of Marginalized History, Use of Cultural Artefacts, and Cultural Stereotypes as Recognition	16
2.2.3 Queerness and Sexuality: Fetishization, Mental Instability, and Dead Partners	19
2.2.4 Impacts on Player Participation and Perceptions	21
2.3 Ethics, Values, and Video Game Analysis and Critique	22
2.4 Bridging the Gap between Video Game Analysis and Environmental Storytelling	23
2.5 A Brief History of the Video Game Industry in Poland and Discussions Surrounding <i>The Witcher 3</i>	24
CHAPTER 3. METHODOLOGY	28
3.1 Research Topology and Overview.....	28
3.2 Materials.....	29

3.3	Data Collection and Procedures	29
3.4	Considerations for the Samples and Population	30
3.5	Proposed Analysis and Validation.....	31
3.6	The <i>Cyberpunk 2077</i> Environments and Proposed Alternative Representations	31
3.7	The Environments	37
CHAPTER 4. RESULTS.....		46
4.1	Presurvey: Demographics	46
4.2	Playthroughs Using the Think Aloud Protocol and Semi-Structured Interviews	48
4.2.1	Coded Themes.....	49
4.2.2	Categories	51
4.2.3	Participants' Thoughts and Feelings on Representations of Race and Culture	56
4.2.4	Participants' Thoughts and Feelings on Representations of Gender and Sexuality ...	58
4.3	Post Likert Scale Surveys	60
CHAPTER 5. DISCUSSIONS.....		65
5.1	Analysis.....	65
5.2	Conclusions	71
5.3	Future Research	73
APPENDIX A. SURVEYS.....		74
APPENDIX B. INTERVIEW PROTOCOL.....		76
APPENDIX C. EXTERNAL ASSETS AND RESOURCES		80
REFERENCES.....		81

LIST OF TABLES

Table 4.1 Participant Demographics	47
Table 4.2 Category Definitions	52

LIST OF FIGURES

Figure 3.1 <i>Cyberpunk 2077</i> ads.....	32
Figure 3.2 <i>Cyberpunk 2077</i> building ads.....	33
Figure 3.3 Ad with Asian woman	33
Figure 3.4 King Size ad	34
Figure 3.5 Title screen city scene <i>Cyberpunk 2077</i>	35
Figure 3.6 Shop in <i>Cyberpunk 2077</i>	36
Figure 3.7 Trailer environment.....	37
Figure 3.8 Trailer environment continued	38
Figure 3.9 Trailer environment continued	39
Figure 3.10 Alternative environment #1	40
Figure 3.11 Alternative environment #1 continued.....	41
Figure 3.12 Alternative environment #1 continued.....	42
Figure 3.13 Alternative environment #2	43
Figure 3.14 Alternative environment #2 continued.....	44
Figure 3.15 Alternative environment #2 continued.....	45
Figure 4.1 Favorite Gaming Genres.....	48
Figure 4.2 <i>Cyberpunk 2077</i> environment themes	49
Figure 4.3 Alternative environment 1 themes	50
Figure 4.4 Alternative environment 2 themes.....	51
Figure 4.5 Categories by environment	53
Figure 4.6 Categories by gender – female	54
Figure 4.7 Categories by gender – male	55
Figure 4.8 Likert Scale Q4.....	61
Figure 4.9 Likert Scale Q7.....	61
Figure 4.10 Likert Scale Q9	62
Figure 4.11 Likert Scale Q12	62
Figure 4.12 Likert Scale Q13	63
Figure 4.13 Likert Scale Q15	63
Figure 4.14 Likert Scale Q16	64

Figure 5.1 Summary comparisons between all three environments	71
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LIST OF ABBREVIATIONS

DLC – Downloadable Content

GDC – Game Developers Conference

NPC – Non-Playable Character

RPG – Role Playing Game

S.T.E.M – Science, Technology, Engineering, Math

TLoU – *The Last of Us*

VAP – Values at Play

ABSTRACT

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Video game studies pertaining to representations of gender, race, culture, and sexuality are commonly discussed in relation to the characters, narrative, or gameplay mechanics. Video game environments are often left out of these discussions as most publications focus on how the environment was created and environmental storytelling. In this pilot study the researcher had participants analyze and discuss three futuristic, dystopian environments that contained alternative ways of representing gender, race, culture, and sexuality. The environments did not have gameplay or character interactions so that the player could focus on the environment. Results indicated that futuristic dystopian environments do not need to rely on stereotypes and harmful depictions to evoke core themes, even if they relate to violence, sex, oppression, or addiction. However, a lack of representation or a “neutral” take on representing gender, race, sexuality, and culture results in world that feels bland, isolated, and unnatural. Additionally, while participants disagreed on certain representations or noticed different aspects of the environments, the researcher found that focusing on “playtesting” just the environment can reveal how certain values, themes, and representations arise out of prop repetition, prop juxtaposition, and even how the player moves physically through the space.

CHAPTER 1. INTRODUCTION

1.1 Statement of the Problem

Video games play an important role in developing societies' cultural landscape. Games and respective technological platforms evolve the way we interact with entertainment, education, and each other (Consalvo, 2008; Flanagan & Nissenbaum, 2016; Malkowski & Russworm, 2017). However, the lack of diversity within the industry and how this is reflected within game worlds continues to be a significant problem. This is a product of, and perpetuates, culturally embedded gate keeping practices; hostile gaming communities; and sexist, racist, homophobic, and xenophobic workplace practices (Kafai, Richard, & Tynes, 2016a; Shaw, 2015a; Jenson & Castell, 2016).

Though the study of ethics in video games and peripheral industries has helped aid a better understanding in how to construct diverse content and analyze player agency (Sicart, 2009, Linderroth & Mortensen, 2015), values embedded within video games continues to be a focal point of controversy. The Values at Play heuristic was developed to help engage developers by prioritizing an understanding of values in their games “so as not to miss opportunities to diversify the field and promote innovations” (Flanagan & Nissenbaum, 2016). *Conscientious designers* are all developers (not just game designers) who are willing to and actively design and build systems around values. These designers accept the idea that “societies have common (not necessarily universal) values; technologies, including digital games, embody ethical and political values; and those who design digital games have the power to shape players' engagement with these values” (Flanagan & Nissenbaum, 2016).

Furthermore, video game studies have entered a third wave of feminist analysis that is focused on an intersectional approach (Kafai, Richard, & Tynes, 2016b). This intersectionality broadens the scope of analyzed values and ethics and inherently constructs a more diverse discourse for evaluating and developing content. Much of the content that has been analyzed includes how the characters' aesthetics and systems work together as a whole (Flanagan & Nissenbaum, 2016; Cassell & Jenkins, 2000), how the game is marketed (Alhidari & Pelton, 2015; Hoffswell, 2011; Layne, 2018), and how gamer communities engage with this content (Kafai, Richard, & Tynes, 2016a). There are studies and discussions that also happen at a more micro

level: people discuss individual characters within games, individual missions, or individual gameplay mechanics (Malkowski & Russworm, 2017).

Though environmental storytelling has become a more popular topic for analysis, especially at conferences like the Game Developer Conference (GDC), the discussion of environments and environmental storytelling is often left out of debates surrounding ethics, values, and diversity in favor of the aforementioned paradigms. This means that environmental storytelling is subsequently not critiqued to the same degree as these constructs – the video game characters, mechanics, systems, and players - in terms of diversity and determining embedded values.

As video games have been analyzed over the past few decades, it is clear that, through many factors and combination of factors, development studios can create harmful stereotypes and can poorly represent aspects of cultures (Malkowski & Russworm, 2017; Kafai, Richard, & Tynes, 2016a). As environments are partially considered a portrait of the people that live there, developers and researchers should extend their analysis to examine how these issues and stereotypes may be reflected within the environment as well. Furthermore, if these issues are illustrated in environments, environments should also be evaluated under the same lenses that characters, players, and communities are critiqued.

The researcher used recorded playthroughs using the think aloud protocol and semi-structured interviews to evaluate how futuristic dystopian environments can help aid in generating productive discourse around values and environmental storytelling. Common tropes, stereotypes, and problematic representations the researcher has identified and focused on include sexualization and sexualized violence aimed at women (Sarkessian, 2013; Alexander, 2017; Batti & Karabinus, 2017; Laurie, 2012), sacrificial blackness, the erasure of marginalized struggle, appropriated use of cultural artefacts, use of stereotypes as recognition (Cole, 2018; Russworm, 2017), and the way queerness is fetishized, saturated with overtones of mental instability, and concerns with the “bury your gays” trope (Chang, 2017; Gerardi, 2018; Shaw, 2018a; Shaw, 2018b).

From this concept the researcher used three environmental snapshots: (1) a modern example of futuristic dystopian environments using environments and release content from the upcoming video game *Cyberpunk 2077* (2) an environment that illustrated alternative ways of depicting culture, race, sexuality, and gender and (3) an environment that was developed to be neutral. The researcher aimed how to investigate how represent the authenticity of the game world and the people that live there, better engage with discussions of diversity through a game

environment, and better understand the limitations and possible innovations for diverse environmental storytelling.

1.2 Research Question

Since video games environments are considered a portraiture of the people that are created by these developers to live in these spaces, it is possible that problematic constructs that are illustrated within certain characters and gameplay interactions are reflected within the environments as well. Consequently, scholars and developers should go about analyzing these topics within environments in capacities similar to which scholars and developers analyze players, communities, characters, and gaming systems. As creators and curators of consumed content, developers have a responsibility to ask what works well in the environment, how to fix certain issues once they are identified, and what went wrong when trying to create these spaces. Therefore, the main question the researcher asked was:

What are different ways that futuristic dystopian video game environments can represent and embody themes regarding culture, race, sexuality and gender?

The researcher analyzed current issues with representation within this genre and reframed the problem to examine how these ideas could be reflected within the video game environment. From there the researcher further analyzed and developed two alternative scenes that could fit within the *Cyberpunk 2077* universe. This illustrated different ways these ideas can be portrayed in environments.

Therefore, the researcher will subsequently ask:

- How are aspects of culture, sexuality, gender and race currently represented? (Illustrated with environmental snapshot 1 – *Cyberpunk 2077*).
- What are ways these concepts can be alternatively and/or more inclusively designed and translated into the environment? (Illustrated with environmental snapshot 2).
- What are participants' thoughts and feelings towards current representations, proposed alternative representations, and an attempt at neutral representations? (Illustrated with all environmental snapshots with snapshot 3 used as the control group.)

The researcher hypothesized that by isolating the different ways to represent these ideas and by focusing on the aspects of a video game environment, participants would be able to focus on discussing the critical differences of the environments and engage in debates regarding game

design choices as they relate to how values and themes are embedded within environments and environmental storytelling.

1.3 Significance

This study broadened the analysis and design critique of environmental storytelling through a lens primarily focused on diversity and inclusive design. While analysis of this type may not always be appropriate based on the context of the narrative and the game as a whole, it provided a basis for which to better aid understanding and develop more authentic content for when such analysis is applicable.

The study had two primary objectives: The primary goal was to establish a pilot study to evolve discourse regarding embodied values within video game environments and to illustrate different ways values and themes within environments are perceived by players. The second objective was to help the general narrative surrounding the industry. By addressing some issues of diversity in ways not as readily discussed or understood, the researcher hoped to curate a means for establishing a more accepting industry for the future.

1.4 Scope

This study focused on three game environments which contained what is described as an “environmental snapshot”. As explored in the literature review, the snapshots contained a futuristic dystopian setting and focused on aspects surrounding culture, race, gender, and sexuality. Specifically, the researcher began analyzing aspects of hypersexualization, sexualized violence, orientalism, cultural fusion, racial stereotypes, and sexuality. However, interviews with participants covered other topics, such as environmentalism, as their perceptions and gaming history, and personal experiences were a prime factor when answering questions. These comments and topics were not ignored by the researcher, as illustrated in Chapter 4, but were not a prime focus when developing the alternative scenes and researching topics for Chapter 2.

The researcher took a few environments from the upcoming game *Cyberpunk 2077* by CD Projekt Red as a basis for this study. Specifically, these environments were shown with the 48

minute gameplay trailer released in 2018 (Cyberpunk 2077). This was to help with three aspects: The first was to directly help illustrate how trends regarding culture, gender, sexuality and race were most currently being represented within an environment. One participant would not have too much experience with the game and the setting over another participant. Finally, using an existing world saved time and resources discussed in the limitations section when developing the alternative environments.

The partial environments were developed using modular pieces and props that were created using Autodesk Maya, Substance Designer, Substance Painter, Photoshop ZBrush, and Unreal Engine. When the environments were completed, the researcher interviewed volunteers with a semi-structured interview that were conducted in person.

Furthermore, this was not a review of the game and the intended purpose was to not to state whether it is a “good” or “bad” game or to give it a rating. That could only be done if the game was played. This study was also not intended to discredit artists nor diminish the amount of work that has already been put into the game, but to generate discussions surrounding environmental design decisions and how these may impact players through attributed or interpreted values.

1.5 Definitions

Diversity – The state of being, having, or representing a range of ideas and identities. For games this means addressing gamers and gaming culture that have not traditionally been involved in mainstream research and cultural promotions. These ideas and identities include gender, age, class, race, ethnicity, sexuality, and religion (Kafai, Richard & Tynes, 2016b).

Environment (Video Game) – A game environment constrains and guides a player, communicates boundaries and affordances of the system to the player, shapes player identity, and provides narrative context. This can be composed of the physical meshes, lights, events and materials within the scene and the overlaid gameplay (Smith & Worch, 2010; Style, 2016; Rodriguez, 2018).

Environmental snapshot – A small scene constructed to illustrate overall ideas and themes of both the environment and how the pieces will be used by developers to create a larger scene. (Homer, 2015).

Environmental Storytelling – “The act of ‘staging player-space with environmental properties that can be interpreted as a meaningful whole, furthering the narrative of the game’” (Smith & Worch, 2010)

Ethics (in computer games) – Ethics is a structure and evolving system of moral values and provides an individual the tools and framework for analyzing these values. Applications of ethics include rational and philosophical approaches that further interrogate the meanings of values. In relation to computer games, ethics are the exploration in the moral nature of the game design, the developers, and the players (Sicart, 2009).

Ethnicity - Taken from US Census “... a person’s self-identification with one or more social groups”. When used as a question within the United States, ethnicity is phrased, “Are you Hispanic or Latino?” (US Census Bureau)

Feminism (in games) – There are three identified waves of feminism in games: the first wave emphasized how few women were involved in the production of games, the stereotypes of female characters, and how games at the time did not focus on what women wanted and were of little interest to females. The second wave focused on understanding cultural and social contexts and the experience of female players and developers. The third, and current wave as of this publication, revolves around research regarding intersectional perspectives that include sexuality, ethnicity, race, class, and modern masculinity. (Cassell & Jenkins, 2000; Kafai, Richard & Tynes, 2016a)

GamerGate – a hate group targeting minorities – most notably women, people of color, and members of the LGBTQ community – that escalated to death, bombing, and rape threats in 2014 – 2016. The movement started when Zoe Quinn was accused by her ex-boyfriend for exchanging sexual favors with a games journalist for positive reviews in her game. This led to increased participation in which members would release private information on women in the industry, including phone numbers and addresses, and escalated to calls for violence (Cross, 2016; Kafai, Richard & Tynes, 2016a).

Gaming communities – Groups of people composed of developers, players, scholars, and academics who invest their time into making, studying, playing, and analyzing games. These communities can be composed around a single game, a genre, a platform for talking about a game (Twitter, ArtStation, etc...), a company, roles within the company or community (i.e. Environment artist or minority gamers), and generate a broad range of conversations about these topics (McGonigal, 2011).

Gate keeping practices – Anything that inhibits the participation of a group of people or a particular person. These practices manifest in different ways, at different ages, and depend on sociocultural contexts. Gate keeping practices include, but are not limited to, harassment in the workplace and school, providing representations that reinforce negative views of minorities in games, and barring participation within gaming groups (Kafai, Richard & Tynes 2016a)

Gender – “Gender, then, involves active choices that are always in flux and that are determined by many things (race, class, age, peers, immediate context)... involve the person becoming and acting in the world as part of the construction of a complex identity” (Cassell, 1998, p. 300)

Indices (Index) – One of Charles Peirce’s three types of signs. An index is a sign that is physically connected with the idea that it is trying to represent. Common examples include smoke from a fire and symptoms of an illness. In games this can be represented through remains of objects, signposts and tutorials, and evidence of player actions within the game world (Vara, 2012).

Intersectionality – An analytical framework first mentioned and established in feminist studies by Kimberly Crenshaw to study the marginalization of women of color. This framework analyzes aspects of diversity, not as individual constructs but ideas that constantly effect and usually reinforce each other (Crenshaw, 1989). This framework has expanded to include race, gender, sexuality, religion, disability, and ethnicity and established the philosophical idea that a person or aspects of society cannot truly be understood by analyzing the composing parts separately but must be analyzed by their complex interrelationships (Kafai, Richard & Tynes, 2016b).

Narrative – The medium for exploring and questioning aspects and meanings of human existence (Murray, 2017). Narratives are composed of stories in which there is an initial state that must change. Changes are events of the story that are personified through language and other mediums. Changes have a level of repetition to create ideas and themes (Zimmerman, 2004).

Race - Taken from the US Census, “... determines whether a person is of Hispanic origin or not” (US Census Bureau)

Values – “...values are properties of things and states of affairs that we care about and strive to attain. They are similar to goals, purposes, and ends, but usually they possess a higher degree of gravitas and permanence, and they tend to be more abstract and general” (Flanagan & Nissenbaum, 2016, p. 5)

Video game – “A game is a voluntary interactive activity, in which one or more players follow rules that constrain their behavior, enacting an artificial conflict that ends in a quantifiable outcome...games embody the same structure-play relationship of other ludic activities where play emerges as the free space of movement within more rigid structures” (Zimmerman, 2004, p. 160 – 161)

1.6 Assumptions

The researcher assumed that participants will give honest answers during the interview. Furthermore, the researcher assumed participants know how to use a mouse and keyboard interface.

1.7 Limitations

There were four major limitations. The first was that the development and analysis were constrained to three environmental snapshots and focused on one genre (futuristic dystopian). The second was that the researcher is a cisgendered white female and analyzed these aspects from a space that is fundamentally removed from some of the studied situations. The researcher attempted to mitigate this effect by getting a diverse group of participants for this study and gathering

references and literature whose perspectives and experiences are directly related to certain aspects of gender, culture, sexuality and race. Another major limitation was that all referenced content to study from may only be derived from currently released *Cyberpunk 2077* content. The last limitation was that only one person (the researcher) transcribed and coded the data.

1.8 Delimitations

The main issues the researcher focused on revolved around gender, race, sexuality, and culture. Though the terms ‘diversity’, ‘intersectionality’, and ‘inclusivity’ encompass many different ideas and complex relationships between constructs of identity, the researcher started from these four constructs. The genre that was chosen (futuristic dystopian) was also decided based on information found during the literature review. While the discussed problematic tropes, stereotypes, and themes appear across many genres and types of video games, they appear, both individually and together, in futuristic dystopian settings frequently. Furthermore, the researcher built the alternative environments to run on PC’s and not on any other platforms.

Only environments from the 48-minute *Cyberpunk 2077* trailer released in 2018 were shown to the player. No other released screenshots or videos were shown. Environments from the trailer were chosen as this trailer was the first majorly detailed content update, and these were the locations and aspects of the world that CD Projekt Red deemed important to highlight and show about their crafted world. As the game was still in development at the time of the trailer release, the content shown in the trailer was completed and prioritized to be finished first.

The environments did not contain sound effects, ambient sound, or narration. This decision was made to narrow the focus to the physical and visible environment. While one study indicated the limits and difficulty in conveying a story solely based on embedded and evoked narratives with environmental storytelling (Bevensee, Boisen, Olsen, Schoenau-Fog, & Bruni, 2012), this study did not attempt to convey a singular story but rather interpretations of multiple possible stories, themes, and values.

CHAPTER 2. LITERATURE REVIEW

This section focuses on five main concepts: defining narratives and environmental storytelling, current issues with diversity and the importance of representation within the industry, explaining the current stage of ethics and values research surrounding video games and design, the gap between analyzing environmental storytelling and diversity analysis, and finally, a brief history of the video game industry in Poland and CD Projekt Red.

The section describing current issues with diversity within the industry and video games is separated into three subsections: gender, race and culture, and queerness and sexuality. Though this may seem counterintuitive and counterproductive for proposed intersectional analyses, this was done for two reasons. The first was to create an accessible and organizational format where readers could quickly garner a sense of topics that are discussed and where to find those topics. The second was that each section is not wholly contained to just these subjects. Each section contains discussions and sources that address all or multiple parts of the three sections.

2.1 Narratives, Video Game Environments, Environmental Storytelling, and the Role of the Player

Murray broadly defined narrative as “the medium in which to confront the unanswerable questions of human existence”. She has explained how video games and the invention of 3D technologies have greatly impacted humans interactions and understanding of narratives due to increases in immersion, interactivity, and agency (Murray, 2017).

Zimmerman clearly defined the components of a narrative. He expounded upon Murray’s initial ideas and stated that stories are the experience of the narrative. Furthermore, a narrative has an initial state that changes, a personification of events through language and different representational mediums, and that these representations are created through repetition (Zimmerman, 2004).

Narratives can take on many forms within a video game. Narratives can be constructed through the dialogue, the player interactions, and the aesthetics of the characters and world. Each of these components can contribute to stories and themes within a narrative by analyzing them individually and with how they interact with each other. Here video game environments play an

important role in establishing and revealing narratives for the player and having them engage with these narratives (Jenkins, 2004).

Video game environments include props, scripted events, textures, lights, scene compositions, and environmental reactions [to player actions] (Smith & Worch, 2010). Game environments can be both two- and three-dimensional and can be created with different software and constructed with different game engines. However, all video game environments have 4 essential properties: they are procedural, they are participatory, they are spatial, and they are encyclopedic (Murray, 2017). Murray also explained that the first two aspects contribute to interactivity and experiencing player agency, while the latter contribute to player immersion.

From these environments, players can establish and understand stories, themes, and different narratives. This is called environmental storytelling. Smith and Worch (2010) further defined this by stating “environmental storytelling is the act of staging player-space with environmental properties that can be interpreted as a meaningful whole, furthering the narrative of the game”. Environmental storytelling is important to the overall gaming experience because these environments and their properties help establish possible interactions, reinforces emergent gameplay, and promotes innovative ways to play within a game space (Murray, 2017; Smith & Worch, 2010; Vara, 2012; Rodriguez, 2018). Specific techniques used to help create and convey these narratives and microstories include indexical storytelling (Vara, 2012), establishing anchor moments, pushing meta narratives (Style, 2016), and using creative compositions of modular pieces (Rodriguez, 2018).

Indexical storytelling is a design strategy where indices are used to construct a story. Indices are one of Charles Peirce’s three types of signs and is a sign that is physically connected to the idea in which it is trying to convey. Common examples include road signs, smoke (from a fire), and symptoms of an illness (Vara, 2012). Ways to show this in a game environment depend on props and “dynamic history making”, meaning artefacts of player actions remain after reloading the game or after time has passed in game. This includes making breakable props or adding decals to the environment in reaction to scripted events, such as blood spatters on the ground or the skeletal remains of a defeated boss (Vara, 2012; Smith & Worch, 2010).

Anchor moments are specific visual beats that artists and designers have created to establish a visual impact and an impact in player understanding. This can be resolved through unique props or through the implementation of certain indices (Style, 2016; Vara, 2012).

Due to hardware limitations and time and financial constraints, not every single piece of art in the game can be wholly unique. However, the combination and composition of props within an environment can tell unique stories and microstories (Rodriguez, 2018). These stories can either reveal something specific about a narrative or lend to developing a constant theme within a narrative. These props can also include real world symbols and designs that help contextualize player understanding. This implementation of meta narratives can also help develop a narrative within a game (Style, 2016).

Overall, environments and environmental storytelling help define the role of the player within the narrative. Environments provide the player with “detective work” in which they must analyze their surroundings and draw conclusions (Vara, 2012). The game environment also guides the player through the ecology of the game and communicates boundaries and affordances, both of which help establish player identity and narrative context (Smith & Worch, 2010).

2.2 The Importance of Video Game Diversity and Current Issues with Diversity

The video games industry is constantly evolving. Technological platforms, logistical models, the ways players consume this media, and the construction of peripheral industries are always changing and pushing new frontiers. Part of this is because the industry is composed of varied models ranging from conglomerates to single person studios and from text-based experiences to massively detailed and open 3D worlds. Video games now play an important role in societies’ cultural landscape and are progressing the way people understand and interact with entertainment, education, and each other.

Flanagan and Nissenbaum (2016) expounded upon this importance by explaining that “games can serve as cultural snapshots: they capture beliefs from a particular time and place and offer ways to understand what a given group of people believes and values...” (p. 3). The idea and act of ‘play’ and ‘games’ was analyzed as early as the 1930’s where Huizinga concluded that both of these elements are essential conditions for generating culture and defines them as part of the foundations for a civilization (Huizinga, 2016). Due to their visual and interactive nature, games offer a deeper understanding of observational learning and cognitive social learning theory, specifically for developing identities through the engagement of a controlled avatar and for adopting individual attitudes and norms through permeated representations (Martins, Williams, Harrison, & Rata, 2009).

The interactive nature of video games and the depictions hosted by gaming communities and gaming platforms have had a tumultuous past and continue to be a source of controversy. The industry has a history of creating and in some cases advocating sexist, xenophobic, racist, and homophobic depictions and interactions. Part of this is due to the lack of diversity in the gaming industry. As a result, representations of race, culture, sexuality, and gender within game worlds, gamer communities, and among developers has become an increasingly researched topic (McGonigal, 2012; Shaw, 2015a).

Minorities experience a variety of discrimination methods that are embedded within culture. These methods occur at all ages and in different capacities. Modern research has defined that this is not a result of a lack of interest in the technology or communities (Malkowski & Russworm, 2017) or as a lack of inherit ability, but rather a result of certain isolationist practices within our culture (Kafai, Richard, & Tynes 2016a; Martins et al., 2009; Alhidari & Pelton, 2015). Clubs and coding camps aimed at supporting minorities are an attempt to alleviate the challenges these people face when trying to break into the industry (Denner & Campe, 2008; Gaiser, 2008).

Representation is currently a major part of these diversity discussions particularly in how they relate to the perception and depiction of characters and gamers and the lack of diverse developers. For example, women now account for about half of the gaming community (Rajkowska, 2014). However, these numbers are not reflected within development spaces as women are still greatly outnumbered by men, with about 11% working on art and design and 3% working in programming departments (Dewinter & Kocurek, 2017, p. 57). These percentages are equally disparaging for people of color and people of different socioeconomic classes and sexualities (Malkowski & Russworm, 2017).

The number of women, people of color, and queer developers in the gaming industry is slowly growing but the industry and gaming communities still pervade a sense of hegemonic masculinity that is toxic and threatening to many people in these marginalized groups (Hirshfield, 2010; Kafai, Richard & Tynes, 2016a). This manifests itself in a number of complex and entwined ways including the depiction of female characters in games as victims and sexualized objects, stereotypical and sacrificial depictions for characters of color, inaccurately representing what it means to be queer, isolationist practices within gaming communities and studios, and misunderstandings as to the actual cause of the lack of minorities as players, including women and

people of color (Bergstorm 2016; Malkowski & Russworm, 2017; Hoffswell, 2011; Rajkowska, 2014; Taylor, 2008). A recent example would include GamerGate and their actions towards minorities in games, on online forums, and on social media (Sun-Higginson, 2015; Kafai, Richard & Tynes, 2016a). Research into these subjects has attempted to reveal why certain groups of people cannot or do not enter the industry and why they may leave or stay (Consalvo, 2008; Cross, 2016; Fullerton, Fron, Pearce & Morie, 2008; Ochsner, 2016). As the industry struggles with creating diverse studios and attempting to understand these pervading problems, so too will developers and publishers continue to struggle with creating more authentic and inclusive worlds, within the games' systems, characters, and within the narratives and environments.

Another way to encourage and promote better understanding of people and to advocate for a more inclusive industry is to continue what many scholars, gamers, and developers are currently doing: having these discussions by publishing papers, doing research, writing books, and actively engaging in gamer communities. However, these discussions need to keep happening and need to keep evolving and expanding. Though there are many more stereotypes, themes, and tropes than are listed here, these are the ones the researcher found with relatively common frequency when discussing issues of representation in games, specifically within the futuristic dystopian genre.

2.2.1 Gender: Hypersexualization and Sexualized Violence

Women's physical appearance and the context for these appearances in games is a commonly researched topic as it can be both observed and quantifiable (Martins et al., 2009; Rajkowska, 2014). Data is gathered through marketing strategies (Layne, 2018), game covers, where females are 3 times more likely to be physically objectified than men (Hoffswell, 2011), and female playable characters and non-playable characters (NPC's) (Sarkeesian, 2013). There is a consensus regarding problematic stereotypes of hypersexualization and victimization in that these depictions highlight and perpetuate sexist cultural norms, affect the way women are treated, and are a subtle yet pervasive gatekeeping practice (Gaiser, 2008; Kafai, Richard, & Tynes, 2016a; Malkowski & Russworm, 2017; Rajkowska, 2014; Sarkeesian, 2013; Cross, 2016).

Many of these representations are considered isolationist because they are catered to the heterosexual male player – to the male gaze. Male gaze is defined by Mulvey (as cited by Hoffswell, 2011) in that, “[the] male gaze projects its fantasy onto the female figure, which is

styled accordingly” (p. 23). Products of the male gaze affect women’s “gaming confidence (self-concept) and identification... [and] helps highlight how representational issues, marginalization and gatekeeping, and other sociocultural expectations relate to measurable outcomes and perceptions that impact belonging, confidence, and persistence in gaming across gender...” (Richard, 2016, p. 76-77).

The way in which women are portrayed, if at all, and sexualized is also different depending on their race and sexuality (Dickerman, Christensen, & Kerl-McClain, 2008). Latinos, Asians, African-Americans and Native Americans often appear in a more limited set of roles than white women that produce racially gendered stereotypes. African-American women and women of color are rendered as exoticized, sexual objects (Behm-Morawitz, 2014) that are mythical, tribal, Amazonian, or monstrous in ways that allude to grotesque or deviant sexual imagery or sexuality (Felstead, 2011; McKay & Johnson, 2011). Asian women also fall into stereotyped portrayals that are eroticized and monstrous, but also often evoke themes pertaining to the Orient. They are represented as exotic, sensual and it is rare to see them partnered with another Asian individual (Felstead, 2011; Phi, 2009). Latino women are “virtually nonexistent” (Smith & Decker, 2016). Furthermore, if a woman is lesbian or bisexual, their sexuality is often on display and construed through and for the male gaze (Behm-Morawitz, 2014; Dines & Humez, 2011; Smith & Decker, 2016)

The dehumanization and objectifying nature of women often leads to connotations of violence (Katz, 2011). Subsequently, there is growing concern for how games render difficult topics, especially when tied to these ideas of violence, sex, and when construed poorly. Many fans and scholars have criticized games like *Tomb Raider*, *Detriot: Become Human*, *The Last of Us (TLoU)* and *Watch Dogs* for their depictions of rape, rape threats, and other types of sexualized violence as a misused trope used by writers and developers for empowering female characters (Laurie, 2012, Batti & Karabinus, 2017; Alexander, 2017). These situations can also deter female gamers and potential female developers, especially since many of these characteristics are developed and then actively and publicly defended by the people, usually men, who created them and by certain gamer communities (Laurie, 2012). These commonplace hypersexualized characters and paradoxical representations can negatively influence the perception of women, how women perceive themselves, gender roles, and how to treat women (Martins et al., 2009).

Despite these arising concerns and debates, extreme uncontextualized and sexualized violence towards women is becoming a more popular narrative for characterizations and as a means of marketing a video game. The PlayStation Paris Week and E3 2017 conferences helped illustrate this (Batti & Karabinus, 2017; Alexander, 2017) with the *Detroit: Become Human* and *TLoU Part II* trailers and the developers' defense for marketing the content in these scenes. This is even more concerning for women of color who are more likely to be portrayed as abuse victims especially if they are also lesbian, bisexual and/or trans as they actively fear and are at greater risk for being attacked in real life and in video games (Smith & Decker, 2011).

Both researchers, players, and developers have expressed discontent and uncomfortable situations when dealing with women as victims, especially when they are sexualized or put in sexually violent situations (Denner & Campe, 2008; Gaiser, 2008; Rajkowska, 2014). Denner and Campe (2008) found that when given the opportunity during a S.T.E.M outreach program for younger girls, these girls developed a wide variety of games that not only challenged the stereotypes of what "girl gamers want", but they specifically voiced concerns regarding female characters that were sexualized and portrayed as victims and not heroes.

2.2.2 Race and Culture: Sacrificial Blackness, Erasure of Marginalized History, Use of Cultural Artefacts, and Cultural Stereotypes as Recognition

Video games also play an important role for interrogating questions of history and understanding how these events may play out in the future or in alternate worlds. Unfortunately, many games fail to create a critical discourse for developing these ideas, both narratively and allegorically, especially as they relate to race and culture. Instead, games establish a racial setting in which characters of color are created and analyzed, devoid of real world history, and sacrificed in ways that evoke cultural tensions, or are discarded as background decoration or a means of interaction solely for the main protagonist (who is usually not a part of that culture and/or race and does not care to learn about them). A common way this plays out in video games is through sacrificial blackness, the erasure of marginalized history, appropriating cultural symbols and artefacts, and maintaining cultural stereotypes (Blackmon, 2018; Lacinda, 2018; Loveridge, 2018; Russworm, 2017; Turner, 2016).

As Russworm (2017) explored, sacrificial blackness occurs when people of color are killed off to achieve some goal affirmed by the protagonist or just as a means for establishing narrative

events without looking at what these events could represent. Though the author mentioned how dystopian games are among the most racially diverse and diverse in terms of gender, Russworm (2017) and other scholars have explored this idea with three dystopian games – *TLoU*, Telltale's *The Walking Dead*, and *Detroit: Become Human* (Blackmon, 2018).

The author explained how both *The Walking Dead* and *TLoU* are “diverse” at a quick glance. They seemed to be progressive, but when analyzed together, they reveal tropes and storytelling factors that expound upon the industry's conversations surrounding inclusiveness (Russworm, 2017).

In *The Walking Dead*, the main character is a black man named Lee. The game quickly moves on to create an interesting, less stereotyped character this is focused on fatherhood. Players main role is to protect Lee and a young girl he meets named Clementine while traversing the zombie apocalypse. However, Lee dies, either through being bit and turning into a zombie or by having the player take control of Clementine and shooting him in the head before he can turn. Russworm (2017, p. 125) stated, “playing a black character who demands to be shot also plays out various racial anxieties through a diegetic gamic action the proves to be masochistic, melancholic, and critically unaware of either character's racial/social positions...without discussing any of the consequences or allegorical meanings”.

TLoU works in much the same way. There are four black characters that are not overtly stereotyped. However, all four of them die either by being bit or are murdered by the protagonist, Joel, who is a white man. At the end of the game, Joel murders Marlene, a woman of color, to save Ellie, a white girl whom he also has found during the apocalypse, and whose blood holds the key to a cure. Therefore, Joel's actions illustrate this idea that a white character must be prioritized at all costs. Furthermore, the game ignores the contexts of racialized struggles and many of these discussions are also subsequently left out in online forums. The game still ignores the history surrounding people of color despite the fact that specific events in the game do evoke ideas surrounding racial tensions, whether the developers intended them to or not. Russworm (2017, p. 125) concluded that “blackness nonetheless functions unprogressively”.

Finally, Russworm and Cole (2018) explained in a podcast how *Detroit: Become Human* also accentuates both sacrificial blackness and the erasure of marginalized history (Blackmon, 2018). Both authors explore the role of some of the black characters within the game. Many are sacrificed during the game, most notably Luther who can die at many points throughout the game

and often to save Kara and Alice, both of whom are white. Russworm explained during this podcast how a common problematic futuristic trope is that these narratives often assume a post racial society that trivializes historic marginalized struggles. This becomes even more of an issue when humanity is often defined and realized in this genre through violence. However, this recognition is not only fleeting, but retaliatory violence does not produce the same recognition of humanity. The author questions why this “buying humanity through sacrifice” is so often used at the expense of characters of color, while also ignoring the real world context of these narratives (Blackmon, 2018).

Cole (2018) explained how the game evokes many aspects and themes surrounding America’s civil rights struggle including using robots as servants, the inclusion of camps, and the portrayals of protest, specifically nonviolent protests. The writer described how the game constantly pulls on real world aspects but ignores enacting or accurately addressing how these have happened in history. “...it also implicitly assumes that victory through nonviolent resistance is both foolproof and easily accomplished....Even if one were to embrace *Detroit’s* unironic cribbing from real movements with zero added context, the game mostly sidesteps the punishing and often unfair nature of nonviolent protest...” (Cole, 2018) By examining these three games, the two tropes become a clear pattern, especially in dystopian, futuristic fiction.

Games like *Tomb Raider* and *Uncharted* illustrate how Asian and Latino and Hispanic cultures are often appropriated for the benefit of the white protagonist while simultaneously ignoring the people of that culture and boasting overtones of colonialism. Cultural artefacts are often just things to collect in these games, where the characters do not try to further understand or learn about the surrounding culture through these artefacts. Despite the fact that the game heavily relies on their characterizations as archaeologists and a narrative that suggests they are “interested in these cultures”, they often resort to killing magnitudes of dark skinned people (Lacina, 2018; Loveridge, 2018; Turner, 2016), members from these cultures, if present at all, are often never interacted with and are used as set dressings to be caught in the crossfire of action sequences. These protagonists are quite destructive of surrounding lands they have no claim to and ultimately do no answer to any sort of responsibility or repercussions for such destruction (Lacina, 2018; Loveridge, 2018; Penix-Tadsen, 2013; Turner, 2016).

Many video games often use certain symbols from Mexican and Hispanic culture as an easy way to identify and characterize NPC’s within the game world or a geographic location. These

symbols are usually overused, used inappropriately, or used in a way that is not actually representative. Sugar skulls, sombreros, and luchador masks are often used as an easy way to signal an area or character that is in some way Mexican or Hispanic. *Mario Odyssey* uses overt caricatures in one of the worlds where the inhabitants are all wearing sugar skulls, sombreros, and shaking maracas. If the player wishes to enter an area they are also forced to wear these items (Blackmon, 2017). This plays not only on blatant stereotypes, but the use of sugar skulls is also harmful due to its extreme sacred and meaningful significance in Day of the Dead celebrations.

A few games that provide a counterexample to these depictions include *Lucha Libre AAA* and *Red Dead Redemption*. The former game provides context, cultural narratives, and backgrounds that allow the player to learn about the “culture being simulated” where the latter game pivots on the “‘us versus them’ mentality” where James Marsden, the main protagonist, interacts with the locals and eventually fights alongside them in a revolutionary conflict (Penix-Tadsen, 2013).

Depictions of Asian culture and Asiatic characters, especially those considered to be Asian American, are usually limited to settings and roles within the Yakuza or Triads. Asian characters are commonly posed as the villain to be killed by the main protagonist and know some form of martial arts (Phi, 2009). If they are not the villains they are posed as in some way servient to the main protagonist, like Jordi in *Watch Dogs*, or as backdrop pieces in which the women are highly eroticized, and draped or painted in an Oriental fashion. This produces a racial and cultural stereotype that “Asians are forever foreigners” (Phi, 2009).

2.2.3 Queerness and Sexuality: Fetishization, Mental Instability, and Dead Partners

Queerness in video games, when and if represented at all, often perpetuates stereotyped characterizations. Two major stereotypes include the fetishization of queerness and the association of queerness with mental illness and mental instability (Alexandra, 2018; Chang, 2017; Shaw, 2015b; Shaw, 2015c). This former stereotype occurs on two levels: the first presents queer characters in an overtly sexual and promiscuous lens, and the second is the insistence on glorifying or focusing on making these characters suffer, often resulting in their own or their loved one’s deaths, or making them mentally unstable (Chan, 2017). Sometimes this instability is caused by the severe trauma and is therefore reinforced by their or their loved ones’ suffering. Other times it is just built into the characters personality as a defining characteristic.

Chang explored both of these ideas and further clarified that many times queer characters are pushed into a narrowly defined binary choice of hetero or homosexuality. Furthermore, these identities are usually construed just as “checkboxes” to fill or connote sexuality with choice like in the *Mass Effect* series. “...the choice is still limited to one or the other and the experience of this binary might too easily fall into a cartoonish stereotype of promiscuity” (Chang, 2017, p. 228). The author specifically analyzes, Cohen, a character in the futuristic dystopian game, *Bioshock*.

Cohen is presented as the stereotypical Broadway fey fatale (Chang, 2017). He is a suffering artist who also owns many bars, strips clubs, and beauty shops. He is also very homicidal in nature, often killing for his art. Chang clarifies, “He is coded as flamboyant, effeminate, and raucously queer. He is a token character...” (Chang, 2017, p. 234)

While this provides a specific example of how a single character has been developed to embody both stereotypes, it occurs in many other titles as well. Gay men in *Persona 5* are often shown as “predatory, effeminate rapists” (Gerardi, 2018). Trevor Philips, a character from *Grand Theft Auto: V*, is characterized as a psychopath who endured physical and emotional abuse during his childhood (Shaw, 2015c). His character helps illustrate how the two stereotypes often reinforce one another when representing queer characters. Furthermore, the *only* visible trans characters within the game are extremely stereotyped sex workers (Shaw, 2015b). They cross dress and wear overly gaudy makeup and attire, demonstrating another way queerness is fetishized. A study found that members of the LGBTQIA+ community, while recognizing that individuals can be promiscuous regardless of sexuality, were uncomfortable with the abundance in which other sexualities are conflated with promiscuity (Smith & Decker, 2016).

Characters in these games also heavily rely on the suffering of these characters. Video games fall prey to the “bury your gays trope”, in which queer characters are killed off after intense suffering. Their suffering becomes a defining trait and their narratives rarely end in happiness or even a future hope for happiness. This happens in *Life is Strange*, *TLoU*, and *Dragon Age*, among many others (Alexandra, 2018; Gerardi, 2018; Chan, 2017). As Alexandra, explains “I’m not suggesting that the queers should always get to dance in a field of gumdrops at the end of every game in which they appear, but considering the real world’s continued eagerness to trample the marginalized, one of the most radical things art could do right now would be to show us a world in which we are more than our suffering” (Alexandra, 2018).

Clarkson (2011) argues though visibility should not be conflated with power, especially when considering the context of such visibility, that gay visibility of different types is needed to “challenge the hegemonic gender regime, the acceptance of outspoken, disobedient, visible gay men and lesbians is necessary to raise acceptance of all gay people... to recognize the diversity of gay identities”. Furthermore, representations of people from the LGBTQIA+ community in games need to include non-white racial identities, non-binary genders, and need to include contextual narratives that do not revolve around sex but other aspects of these peoples’ lives. If parts of the character’s narrative or characterization does revolve around sex it needs to move beyond the hetero white male gaze (Clarkson, 2011; Smith & Decker, 2016). Ellie and Riley’s relationship in *TLoU: Left Behind* begins to break some of these barriers, tropes, and stereotypes. The game focuses on Ellie’s and Riley’s relationship as friends and their struggle for survival, it is never focused on sexualization, and noting that Riley is a woman of color. Unfortunately, and as aforementioned, this begins to fall apart when considering this was all sidelined into DLC, one of them dies, and the person that dies is also a woman of color. Understanding these relationships and how they are presented is important because studies have found that positive representations of gay people have the power to shape and change beliefs, perceptions, and reducing stigmas (Smith & Decker, 2016).

2.2.4 Impacts on Player Participation and Perceptions

Bergstrom (2016) explained that, “[You should not assume that participation] in a game ends with personal interest” as other factors like access and gaming communities (especially toxic ones) are reasons not to pick up a game; there are intrapersonal barriers, interpersonal barriers, and structural barriers” (p. 119-120). This assumption of “personal interest” or lack thereof is a factor for many misunderstandings regarding the lack of diverse developers and their reflections within the player population. It is an explanation and practice used to further marginalize these people especially in games and gaming communities (Flanagan & Nissenbaum, 2016; Kafai, Richard, & Tynes, 2016a).

As this section highlights, there are many factors that attribute to players perceptions and understandings of one another, including when and how groups of people are represented within games (Cross, 2016). Furthermore, developers and publishers need to resist “the sales fallacy”, that diverse representations, even nuanced ones, will not sell (Russworm, 2017).

2.3 Ethics, Values, and Video Game Analysis and Critique

Video games are now critically embedded into societies and cultures around the world. From education to entertainment, video games play a large role in economic advancements, cultural discourse, and social interactivity. While games are often reviewed and analyzed in terms of their hardware, graphics, gameplay elements, characters, and narratives, one increasingly common topic is the analysis of ethics and values at play within games. Flanagan and Nissenbaum (2016) explained the importance of analyzing the values and ethics embodied in games by stating, “As a medium for learning, entertainment, and communication, games are an increasingly prominent part of the current cultural landscape. Ignoring values in games...means missing opportunities to diversify the field and promote innovations.... Many elements of games reveal the underlying beliefs and values of their designers and players...the study of games enriches our understanding of how deep-seated sociocultural patterns are reflected in norms of participation, play, and communications” (p. xii-3). They defined the term *conscientious designer* and alluded to the idea that designing for games is a moral activity due to the fact that these values and ethics get embedded within the designs of games (Flanagan & Nissenbaum, 2016).

Sicart (2011) promoted this by writing about how game design is a moral activity and that developers should question how to create ethical gameplay. Flanagan and Nissenbaum (2016) explored this question by asking how to implement values within design, which affects gameplay, environments, and narratives. They defined these values as a concept similar to goals and purposes that individuals care about that have a higher degree of permanence. In order to analyze these values more efficiently, they grouped values into designer understandings and player perceptions. Sicart further supported the idea that game worlds have an important effect on the ethical configuration of the game but also explained that players, through their own moral reasoning, do not approach games within a “vacuum”. Therefore, the values and ethics of design choices in any part of the game are understood, not just within the context of the game but the context of real world influences.

By reevaluating the design of the game, developers can impact access and participation in gaming by designing for a more inclusive culture. Reflecting Flanagan and Nissenbaum’s arguments, Kafia, Richards, and Tynes stated (2016b), “If we want to impact the design of games, this has to start in the design process itself as many prominent game researchers and designers have long argued that a game’s inherent values (readily apparent or not) get embedded within the

earliest design decisions of a game’s development...and considering these questions, how can we diversify access, participation, and design for such play?” (p. 8).

As video game analysis becomes more focused on intersectionality – addressing experiences and exploring factors between gender, race, sexuality, identity, and class (Crenshaw, 1989) – researchers and developers are becoming more aware of how these constructs influence one another and are asking how these can actively affect the people and cultures surrounding games. As Richard further clarifies (2016) “...the data helps to highlight how representational issues, marginalization, and gatekeeping, and other sociocultural expectations relate to measurable outcomes and perceptions that impact belonging, confidence and persistence in gaming” across these constructs of identity.

These conversations are becoming more prominent at large and influential conferences, like the Game Developers Conference (GDC). One presentation at GDC 2018 highlighted how a “healthy room is a room that has multiple voices and perspectives” that help defend against any one developers’ “blind spots” (Garriss, 2018). This highlights the importance of understanding how values are created and interpreted in games and how developers have an ethical responsibility to analyze ways in which these values affect society at multiple levels.

2.4 Bridging the Gap between Video Game Analysis and Environmental Storytelling

As aforementioned, ethics and values are becoming a more widely addressed topic when analyzing games and what imposed representations mean for access and participation in both gamer communities and the industry. Characters, narratives, gameplay systems, player reactions, NPCs, and missions are all commonly discussed and reviewed. However, some aspects that are often left out of these analyses - as they relate to this lens of diversity, intersectionality, and this focus on understanding embodied values – are environments and environmental storytelling.

When this type of critique does happen, though well explained, it is very short. Podcasts, articles, reviews, and interviews often address setting and overall themes of the game, which allude to representational ideas and issues within an environment, but this is rarely specifically focused on or thoroughly clearly discussed within the environments.

Chapter 3 in *Values at Play in Digital Games* describes how game maps and the aesthetic in *Left 4 Dead 2* conjure issues in US social history because the levels are intentionally inspired from the post Hurricane Katrina disaster in New Orleans. The maps then also connote troubling

topics revolving around race and socioeconomic differences that occurred following the disaster (Flanagan & Nissenbaum, 2016).

Chien (2017) also discusses values and themes embedded into environments when discussing the game *Journey*. The game constructs a desert, not as an ugly, deadly, or war-torn wasteland like so many other modern games, but as an “awe-inspiring site of cosmic reckoning” (p. 131). The desert uses allegorical signs of both ancient history and apocalyptic futures. This, in combination with the clothing and lack of identifiable features within the character and on the glyphs on the architecture undermines normative white western masculinity and transcends ideas concerning race and gender. The glyphs, the ruins, and the aesthetic of the desert all impart cross cultural meanings from around the world (Chien, 2017).

2.5 A Brief History of the Video Game Industry in Poland and Discussions Surrounding *The Witcher 3*

The overall focus of this study was not to analyze the sociocultural context of the video game industry in Poland and the history of CD Projekt Red. It also was not within the scope to extensively draw conclusions about how these histories have seemed to influence *Cyberpunk 2077*. However, these ideas will be briefly discussed here as some participants responses reflected this relationship, providing a basis for some discussion and possible future studies written in Chapter 5.

Poland was a Communist country until the late 1980's but even after the creation of the Third Polish Republic, citizens did not have equal nor easy access to buy video games legally. Bazaars known as “computer markets” were established in which people would trade pirated software, including video games. In 1994 two men named Marcin Iwiński and Michał Kiciński started a company they called CD Projekt in hopes of establishing a legal and official market in Poland for importing and trading games. As the company and founders found a way to navigate the Polish market, especially when trying to sell their products knowing many people in Poland could still gain access to their products for free with relative ease, they launched CD Projekt Red in 2002, the development branch of CD Projekt. Shortly after they bought the rights to *The Witcher* series written by Andrzej Sapkowski, whom was and still is vastly popular in Poland, with many people relating the series to a mix between *Game of Thrones* and the Brothers Grimm.

Over the next decade the company would only release two titles, *The Witcher* and *The Witcher 2*, all while competing against globally established series and companies like *The Elder Scrolls* and Bethesda Softworks and *Assassin's Creed* and Ubisoft. While moderately successful the two games did not reach as wide an audience due to the lack of an established history and that the two games were only available on PC.

During February of 2013, CD Projekt Red announced *The Witcher 3*. Through multiple delays, many months of what is known in the industry as “crunch” time, redesigns, and crashes, the game was released in early 2015. The game won prestigious awards and game reviews flooded in praising the game as one of the best RPG's of all time. The team was taken aback but proud of the praise and seemed to have finally “made it” (Schreier, 2017).

Among the praise there was mixed criticism of the game and its world revolving around depictions of race, gender, and sexuality. Players have raised concerns over the complete lack of people of color and the developers' responses to this, the confusing treatment and characterizations of the game's women, and how the game depicts certain characters' gender identity and sexuality.

The Witcher 3 does not have a single person of color in the entire game. No one with darker skin tones were introduced until the *Hearts of Stone* DLC and not until after people raised awareness about this issue. Minority groups are not only ignored; they are not even considered. Though the game pulls from Eurocentric stories and Slavic mythology, the extreme degree of whitewashing in the game is a concern for many players as there is already such a limited space of people of color to exist in the first place. Players have pointed out that arguments in favor of the all white setting do not fully make sense as this is a fantasy game. They also discussed how it was problematic that people seem to be comfortable actively defending the exclusion of people of color but are fine with the inclusion of magic and a very diverse cast of monsters. (Moosa, 2015)

Some of the developers addressed this concern during PAX Prime and they defended this lack of inclusion by stating it was “fifty shades of white”, that they were handling certain issues from “a different perspective”, and they became absorbed with addressing issues at the “forefront of Polish consciousness” and did not have time to address issues from other countries (Messner, 2015).

This is troubling as it does not address why people of color were still omitted from the game when, at the very least, only a few textures for some characters needed to change. While this is not the best or most accurate way to treat race, it is better than omitting entire groups of people.

Though it is interesting to address the conflicts of a group of people from a specific geographic location, and many games do this, this game was not just consumed by the Polish population and was developed amid a fantasy setting - the developers have a responsibility to address this. Embedding these issues within the game are fine, but many of the issues, while major issues in Poland are also major issues elsewhere.

The Witcher 3 was both praised and criticized with the depiction of women within the game. Some point out that though the protagonist is male, many of the secondary characters are women. Many of these women break from the damsels in distress trope and often seem to be in control of their own desires and ambitions. The game does create strong female characters with interesting and dedicated characterizations. This includes Triss, Yennifer, and Ciri. However, parts of these characterizations begin to break down during certain conflicting narrations, their sexualization, especially when compared to Geralt, and the treatment of female NPC's (Ballou, 2018; Grayson, 2015).

Triss, Yennifer, and Ciri are well developed characters with their own goals and flaws. However, much of their agency and power is diluted by how they are dressed, how the camera tracks them throughout scenes, and the extreme focus on these women's bodies. Triss and Ciri both wear clothing that draws attention to their breasts, butt, and midriff. These stylistic choices do not make sense considering their geographic locations, that they are trying to hide, and when they are trying to fight. Players have suggested the game "overdoes it" when dressing the female characters in a way that is just impractical (Grayson, 2015). Yennifer, while more aptly dressed, is still tracked by the camera in very specific ways to highlight certain areas of her body.

Triss and Yennifer are not evenly treated during sex scenes. Geralt is always wearing pants and the women's bodies are often on full display (Ballou, 2018; Grayson, 2015). Other criticisms include narrations from Geralt, who is supposed to be a non-judgmental character used to dealing with prejudice. He makes statements that minimize the independence and power originally built up with certain female characters. A prime example is when he calls Keira a "little girl" and says, "little girls end badly when they fall in with the wrong crowd" (Ballou, 2018). The sexuality of the women has also received mixed feedback. While some players have praised the open and free nature of sexual relationships in the game and that the women seem to be in full command of their sexuality (Grayson, 2015), others are concerned by the extreme heterosexual nature of many of

the relationships and that it is not uncommon for characters to “weaponize” their sexuality (Ballou, 2018; Grayson, 2015).

The game has also been praised with how the story deals with the relationship between Ciri and Geralt, if you get the good ending. The developers have crafted an emotional modern story in which a daughter grows into her strength and independence, showcasing how when a child and parent listen to one another, they become stronger more well-rounded people (Ballou, 2018).

Other players had issues with how NPC’s were dealt with. They explain that the extreme focus on women’s bodies does not also extend to men and that male prostitutes do not seem to exist, with the exception of a single NPC (Grayson, 2015). Furthermore, while men are the victims of extreme violence, much of the sexual violence was mostly aimed at women (Grayson, 2015). Players point to a quest involving a character named Whoreson Junior. Junior is a serial killer who specializes in killing prostitutes, and he platters pieces of their bodies to his manor. Though the game condemns his actions, the extreme graphic nature of this quest seems to be pointlessly “edgy”. The players already know he is a bad person and the “body horror is excessive and pointless” (Grayson, 2015).

In terms of sexuality and other portrayals of gender, the game mostly relies on two characters - Elihal and Mislav. Elihal is a character of ambiguous gender and refuses to answer any of Geralt’s specific questions regarding this. When Geralt questions whether Elihal is male or female, Elihal responds by saying he is Elihal. He is simply is, and Geralt accepts him (Queerly Represent Me, 2019). Mislav is a hunter you encounter at the beginning. Mislav’s sexuality is not a major concern during discussions or the player’s time with him, again he simply is. He is also not overtly stereotyped. Unfortunately, his story falls into the “bury your gays” trope as the player learns that his partner hung himself after being walked in on.

CHAPTER 3. METHODOLOGY

This chapter describes the studies the author used to analyze inclusive designs in environmental storytelling. The researcher gathered participants' responses and examined common themes and differences in these responses. Specifically, the author hoped to analyze these discussions as they relate to understanding and developing discourse surrounding representations embodied in video game environments. This chapter outlines the research topology, materials that were used, samples, data collection procedures, the analysis and assessment instruments for the study, and the creations of the environments.

3.1 Research Topology and Overview

This thesis was composed using three environments. Each environment contained a futuristic dystopian environment. The environments shared some props, materials, and textures. However, some scenes used unique props and textures.

The first scene showcased environments from the 48 minutes gameplay trailer of *Cyberpunk 2077*. As this was contained within a video and cannot be explored like a 3D video game environment, the researcher created a short video containing snapshots of some of the environments in which the participants could click and zoom in on parts they wanted to more closely "explore". All sounds were taken out to help mitigate the fact that this was a trailer meant to get prospective players excited about the game, and this excitement is partially influenced by the music, sound effects, and narrator dialog. These are not aspects the researcher was focused on for this study. Environments were taken exclusively from the trailer and no other released content, as these settings highlighted aspects the developers and studio believed were important to show in order to sell and describe the game. The second and third scene were environmental snapshots created by the researcher that contained a street corner that could take place within the *Cyberpunk 2077* world.

Participants were recruited on a voluntary basis through class and email announcements. Each participant took a pre-survey and then viewed each of the three environments in a random order. While the participants played through the environments, they were asked to think aloud any thoughts and feelings pertaining to the environment (Drachen, Mirza-Babaei, & Nacke, 2018). The

researcher interviewed them using a semi-structured format, while taking notes, and screen capturing their playthroughs.

After viewing an environment and interviewing the participant about that environment, they completed a Likert scale survey that asked questions to determine the clarity of the environment, and how well it fit within the *Cyberpunk* universe and their feelings and understandings of representations within the environment. After the interviews were completed the researcher transcribed the playthroughs and interviews. The researcher then coded each group of data to look for trends, differences, and themes. Using grounded theorizing, the researcher then analyzed and drew conclusions from the data (Hook, 2015).

3.2 Materials

The researcher used Maya and ZBrush for creating low and high poly models and for unwrapping. For texturing, the researcher used Substance Painter, Substance Designer, and Photoshop. The scene was light and constructed, with the shaders were built in Unreal Engine.

The three scenes were all be built to run on a Windows 10 PC, and players navigated through the spaces using a mouse and keyboard. Each participant filled out a pre-survey and post Likert scale survey using Survey Monkey. The researcher took notes during the interview and recorded their playthrough of the scene using OBS studio.

3.3 Data Collection and Procedures

Data collection consisted of qualitative methods using experimental game designs focused on environmental storytelling analysis (Cote & Raz, 2015). Data was collected through a pre-survey, a screen capture and recordings of the participant's playthroughs of each of the environments while using the think aloud protocol, notes taken during the interview and the recorded interview, and a post Likert scale survey (Drachen, Mirza-Babaei, & Nacke, 2018).

After the participant was given a brief introduction about the research and signed a document affirming their voluntary participation and confidentiality, as per International Review Board (IRB) regulations, they filled out a pre-survey documenting additional information. This information described their age, major, gender, race, ethnicity and brief overview of their gaming preferences and experiences.

All information was voluntarily given, and the participant could leave sections blank (though none of them did so this was not noted in Chapters 4 or 5). Each participant then played through the three environments. The order of play was randomly selected to reduce bias concerning certain factors and influences of seeing the environments in a particular order, known as the priming effect (Drachen, Mirza-Babaei, & Nacke, 2018). Using the think aloud protocol, the participant were given a few minutes to explore the environment and were asked to voice their thoughts out loud. They were asked to explain anything that comes to mind – from comments on the details of the environment, how they felt about the environment, what the environment reminded them of, any criticism of the environment or anything else. The think-aloud protocol allowed participants to verbalize their thoughts in real time and reduced the possibility of “misrepresenting their experience” (Drachen, Mirza-Babaei, & Nacke, 2018, p. 189-192). Once they had a few minutes to explore the space, the researcher started the semi-structured interview while the scene remained open.

The interviews evolved based on how each person engaged with the environment and what they responded the most to. However, the researcher tried to ask questions regarding certain props, understanding the players overall feelings regarding the environment, and perceived the stories and overall narratives.

3.4 Considerations for the Samples and Population

Participants were selected from volunteers from the Computer Graphics Department and any students taking Dr. Samantha Blackmon’s courses on UX and Ethics in Video Games. The participants were current students at Purdue University. Participants also had to be 18 years of age or older as *Cyberpunk 2077* is rated M for mature (17+) and adhering to IRB ages restrictions. The participants were notified of the study through class and email announcements. The nature of this study, the limited geographic sample, and the proposed framework with the use of semi-structured interviews produced a non-random convenience sample. The researcher had seven participants. Four were male and three were female. One participant was Hispanic or Latino and another was Asian or Asian American with the rest identifying as Caucasian.

3.5 Proposed Analysis and Validation

After the interviews were completed, data was coded to look for patterns to theorize results. The interviews were transcribed (Cote & Raz, 2015). The researcher used triangulation and theme coding when looking at the transcribed interviews, notes taken during the interview, the pre-survey, the post surveys, and the screen capture of the participant's playthroughs. Conclusions were made based off these observations and analyzed patterns. Due to the exploratory nature of this research, grounded theorizing was used in order to discuss and theorize any patterns that emerged from the collected data (Hook, 2015). This study was a pilot study and due to the number of participants there can be no claims about or pertaining to significance.

3.6 The *Cyberpunk 2077* Environments and Proposed Alternative Representations

This section contains brief descriptions regarding what the researcher saw and noticed within the *Cyberpunk 2077* environments, as this was a major factor in the design decisions for the alternative environments. While additional research was conducted and gathered, the researcher also pulled on personal experiences from studying abroad in China and studying Hispanic cultures for five years.

One aspect the researcher noticed, and as is consistent with some literature, was the biased hypersexualization within the advertisements and signs (Jhally, 2011). The researcher also noticed that many of the advertisements that contained women who were not Caucasian fell under specific stereotypes (Dickerman, Christensen, & Kerl-McClain, 2008). Figures 3.1 and 3.2 show advertisements in which there are three women. While the Caucasian woman is sexualized the women of color are shown in much more explicit ways that evoke the Amazonian, monstrous, and deviant stereotypes. There was only one identifiable Asian woman within the advertisements and posters. She was usually set further in the background, on smaller signs, and fell under the Orient stereotype due to her clothing and makeup.



Figure 3.1 *Cyberpunk 2077* ads



Figure 3.2 Cyberpunk 2077 building ads



Figure 3.3 Ad with Asian woman

Other ads connoted sexualized violence. The King Size ad in Figure 3.4 shows a woman whose head is next to a man's groin. The positioning of the two characters; the sexualized innuendo; the woman's smeared makeup; her thick, metal, and collar looking necklace; along with her upward looking gaze that primarily shows the whites of her eyes create this theme.

White men also fell under a violent stereotype in the ads. While the faces of these characters are not shown, the men depicted are light skinned and have violent connotations. There are additional ads that depict this. One shows a white, masculine hand violently squishing a food item, and the item is depicted to have an exploding head. Another ad shows a muscular man under the title "The Cartesian Duelists" (Katz, 2011).

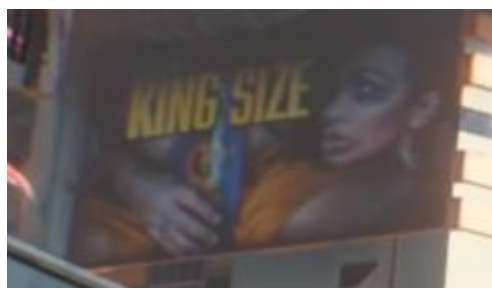


Figure 3.4 King Size ad

As this was a futuristic setting that seemed open about sexual content, and considering the game takes place in California, a traditionally Liberal state largely in support of Pride, it seemed unrealistic that there would be no indications of other sexualities.



Figure 3.5 Title screen city scene *Cyberpunk 2077*

While the game does take a step forward from *The Witcher 3* and has a very diverse multicultural setting, many of the characters besides Jackie are initially coded as white until the title reveal scene in the city as illustrated in Figure 3.5. Furthermore, the store in the trailer seemed to support this theme of multiculturalism. However, the props being sold, and the extreme mix of cultures seemed unbalanced. Both touristy and regular Asian markets do sell cultural items, such as golden dragon statues and happy cats, and you will often see these in stores and restaurants. While they hold specific meanings and significance within these cultures, they are items that are used year-round and are shared throughout Asiatic countries and shared with many people (de Bruijin, 2019; The Japanese Shop, 2017). The only Hispanic item being sold were sugar skulls. Again, these hold great religious and personal significance and are only used during the Day of the Dead celebrations. While it may be possible to find sculptures in tourist shops many of the other shops and mercados do not sell these items. It is more common to see hand crafted clothing, ceramics, food, spices, and musical instruments.



Figure 3.6 Shop in *Cyberpunk 2077*

Taking all of this into consideration, the researcher started to build aspects of the alternative environments to counteract these specific representations. The researcher created alternative advertisements that contained a more equal amount of men and women. Only one ad was kept sexualized and showed the midriff of a woman. The only ad promoting a sexual service or club contained silhouettes of two people that were meant to be androgynous so as not to impose a specific sexual identity. Additionally, a gay pride flag was added to a few of the advertisements. This ad contained a modern version in which both the trans flag colors and two bars indicating race were included (Villarreal, 2018).

Considering games treated white skin as default (DePass & Cole, 2017), the researcher placed ads and graffiti of non-Caucasian men and women around the player's starting position and initial camera angle so that there could be a high chance that the first representation of a human they would see would not be "white".

While many of the Asiatic props were kept the same, the researcher added the two most commonly colored happy cats along with stacks of wallets and flip flops. The Hispanic stalls contained cuatros and hanging papel picado often seen in mercados. The papel picado was

rainbow colored as this is what is used for everyday and/or non-religious festivities (Palfrey, 1999). The props were kept on separate stalls instead of mixing them together on individual stalls.

3.7 The Environments

Below are screenshots from each of the environments. First is the trailer environment. The next is Alternative Environment #1 and the last is Alternative Environment #2.

A)

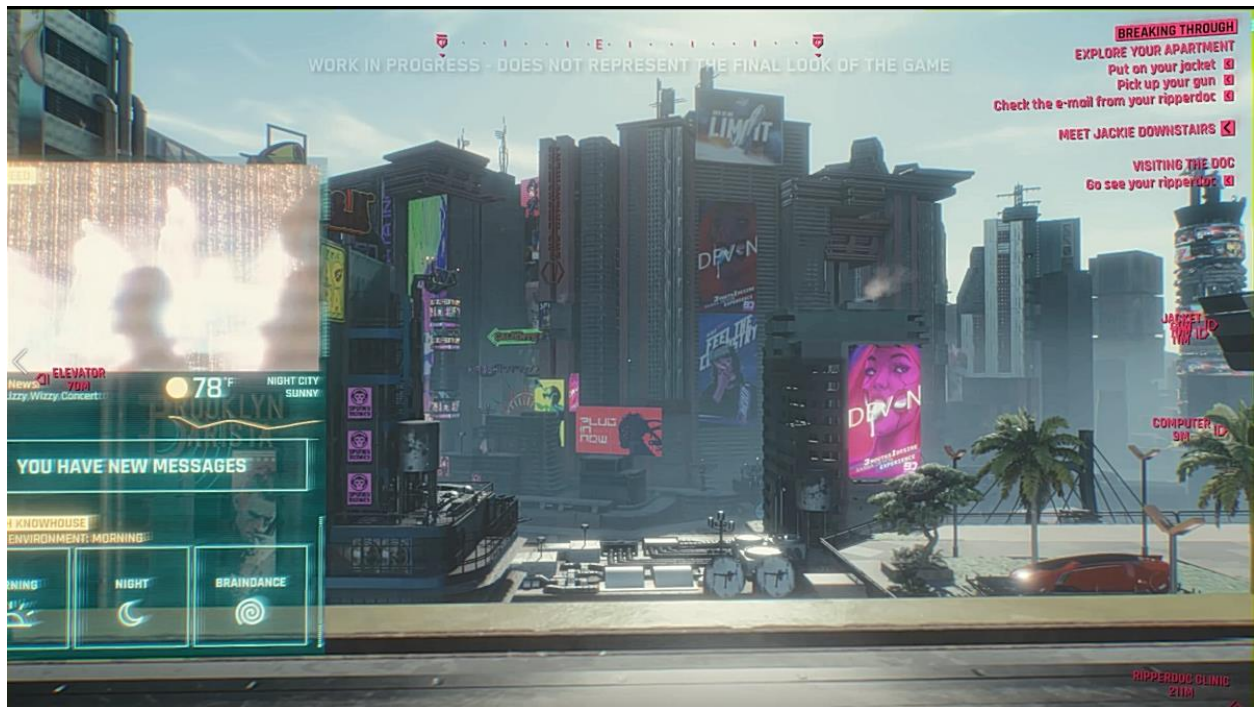


Figure 3.7 Trailer environment

Figure 3.8 Trailer environment continued

B)



C)



Figure 3.9 Trailer environment continued

D)



E)



(Cyberpunk 2077)

A)



Figure 3.10 Alternative environment #1

B)



Figure 3.11 Alternative environment #1 continued

C)



D)



Figure 3.12 Alternative environment #1 continued

E)



F)



A)



Figure 3.13 Alternative environment #2

B)

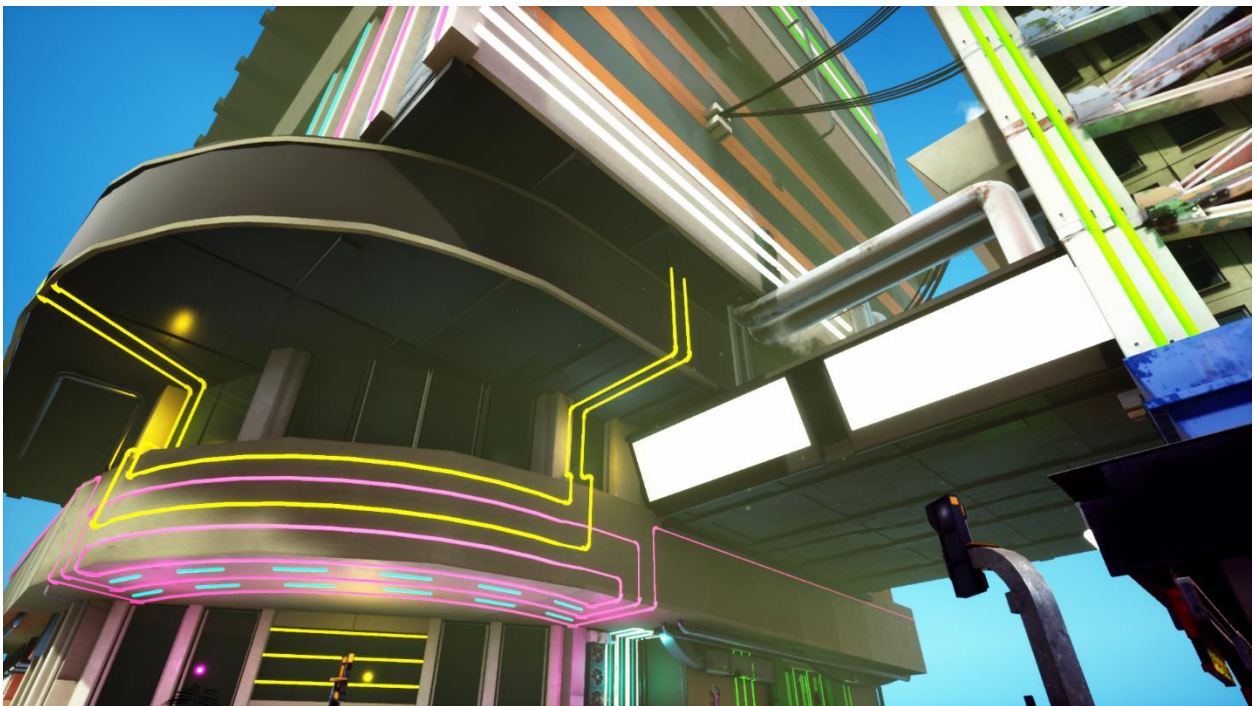


Figure 3.14 Alternative environment #2 continued

C)



D)

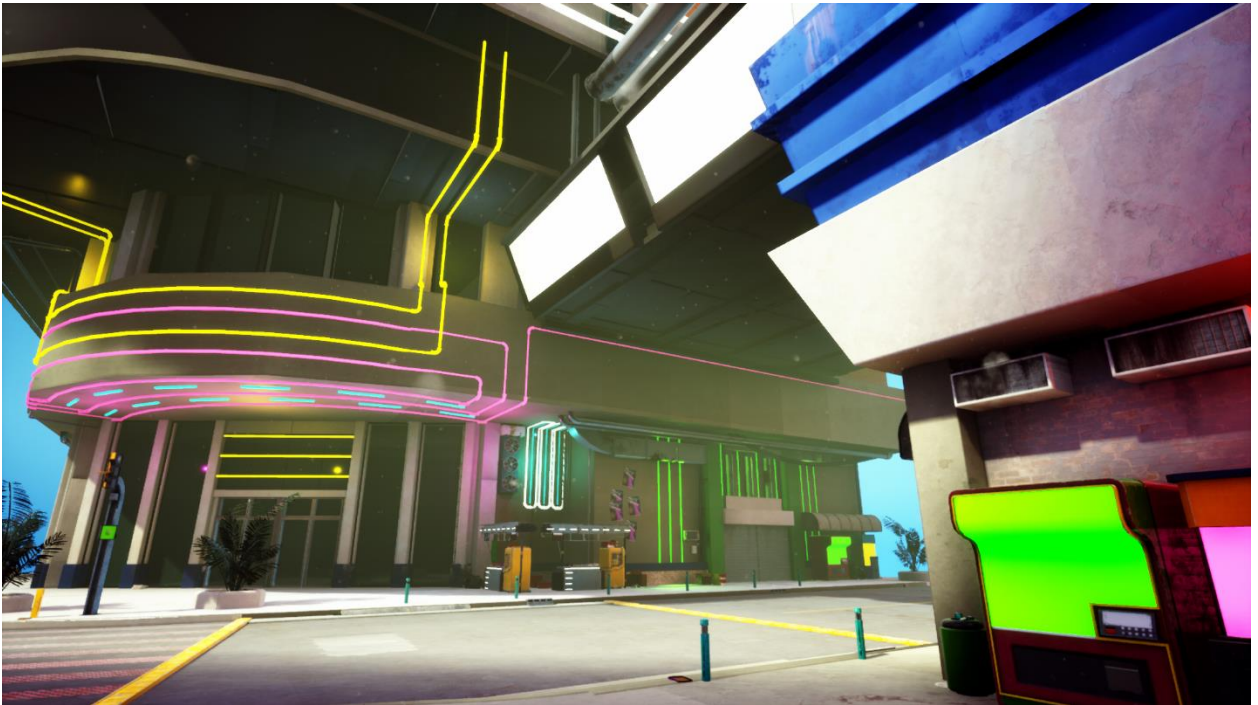


Figure 3.15 Alternative environment #2 continued

E)



CHAPTER 4. RESULTS

This section covers the results of the data that was collected from the pre-surveys, recorded playthroughs using the think aloud protocol and transcribed interviews, and the post Likert scale surveys. The researcher discusses the demographics of the participants' including background gaming experience. The coded themes and overall categories that were derived from these themes are shown in the second section.

The next few sections also display common comments the participants made, their coinciding or contrasting viewpoints (whether they agreed or disagreed), and some specific comments that were made by only one or two participants that discussed vital aspects of the environment or revealed an interesting idea. Like the literature review these portions are sectioned off by specific categories: race and culture, and gender and sexuality. Again, this was done to help with readability and creating a basis on which to start discussing these topics.

The next section covers some of the questions, trends, and unique instances with some of the questions from the post Likert Scale surveys. This chapter ends by stating the materials and props that were most noticed by the participants for each environment. All protocols and surveys are displayed within the Appendices.

4.1 Presurvey: Demographics

A total of seven participants were interviewed over the course of a week. On average participants spent about an hour and fifteen minutes to complete the surveys, view all the environments, and discuss them in the interviews. Participants met with the researcher for a single session. The table below illustrates the demographics of the participants.

Table 4.1 Participant Demographics

Participant ID	Gender	Race	Ethnicity	Class
Participant 1	F	White		Sophomore
Participant 2	M	White		Graduate
Participant 3	F	Asian		Freshman
Participant 4	M	White		Senior
Participant 5	M	White		Sophomore
Participant 6	F	White	Hispanic	Junior
Participant 7	M	White		Senior

All the participants were between the ages of 18 – 27 with most being between 18 – 23 years of age. All but one student were Computer Graphics Technology majors with different focuses including UX design, animation, game development and VFX. The other student majored in Interdisciplinary Studies.

All the participants began playing video games before 10 years of age with most of them starting between 5 to 6 years of age. Most play video games every day with two students playing once to a few times a week and another playing a few times a month. As the figure below shows, most popular gaming genres for this group included first person shooters and RPG's followed by tabletop games and party games (there was a total of 52 responses). This is supported by responses to the question 'Do you have any favorite video games? If so, which ones?' in which the most popular responses were *Apex: Legends*, *Legend of Zelda*, *Skyrim*, *Overwatch*, and *Bioshock*. Participants' primarily played games on PC's and mobile devices followed by an even mix between PlayStation, Nintendo, and Xbox consoles.

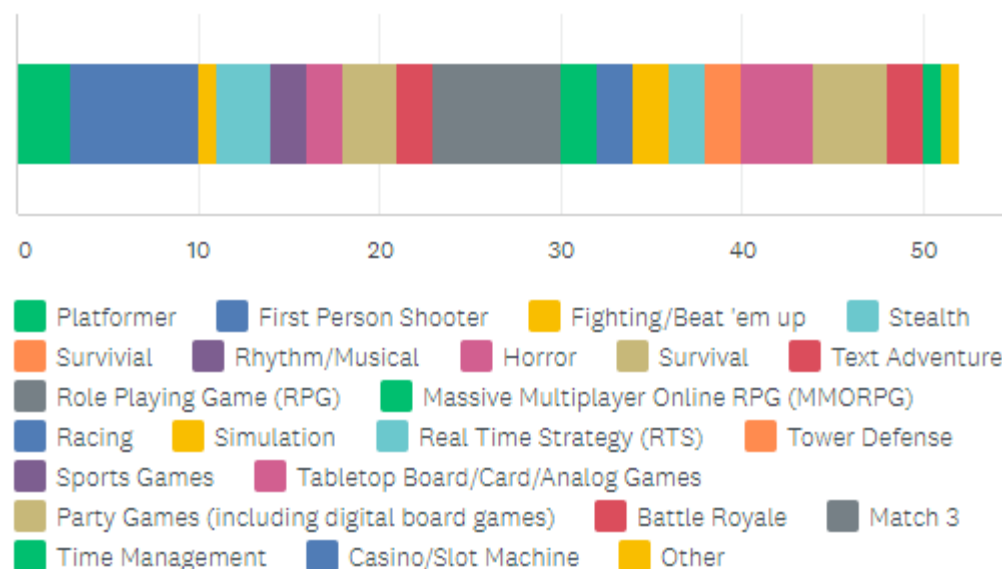


Figure 4.1 Favorite Gaming Genres

Participants were also asked what their favorite and least favorite parts about gaming and gaming communities were.

Many liked the escapism they felt while playing games. Many also expressed that they liked to connect and share experiences with people, even if these people were random online players and/or if they preferred to play individually. The last major commonality was that participants enjoyed exploring new worlds and expressed interest in examining new environments.

Participants disliked the amount of hate speech used in game and on forums, general gamer toxicity, and gamers that have a projected sense of entitlement and pretentiousness. While not all the participants have had these actions directed at them, they all have witnessed them and are aware of these issues.

4.2 Playthroughs Using the Think Aloud Protocol and Semi-Structured Interviews

The next step was to play through an environment while speaking aloud any thoughts and feelings. During this stage the researcher did not interrupt them or guide them to pay attention to anything in particular. The only direction, as included in the protocols in the Appendices, was to think aloud any thoughts and feelings and to pay attention to the environment – though what

constitutes as ‘part of the environment’ was left up to the participant. The participant then took part in a semi-structured interview.

4.2.1 Coded Themes

The data collected for this portion of study were then transcribed and coded. These codes were based on reoccurring themes or ideas that the participants saw and discussed. The figures below show the word clouds for each environment. All the words within the word clouds are listed beneath each figure. The words are arranged from largest to smallest word (most discussed to least discussed). Though most themes addressed specific topics, ‘world construction’ was a general term used for anything that the participant talked about alluding to how the world was built either in engine (ex. particle effects and lighting) or how the world would have been constructed if the game world was real (ex. Tall architecture, supporting beams, use of concrete, plants). ‘Confusion’ means that participant was confused by something or the relation of something with the game world. ‘Class’ alludes to social class and hierarchies.



Figure 4.2 *Cyberpunk 2077* environment themes

Words: sexualization, world construction, culture, gender, race, violence, sex, environmentalism, confusion, class, diversity, Hispanic, inequality, crime, Asian, technology, dystopian, sex positivity, Capitalism, sexuality, religion, deviant, density, underrepresentation, transportation, representation, Middle Eastern, appropriation, urban culture, stereotype, submission, futuristic, body type, addiction, Hawaiian, Japanese, Chinese, fashion, data



Figure 4.3 Alternative environment 1 themes

Words: culture, gender, world construction, Hispanic, sex, Capitalism, addiction, Asian, race, futuristic, sexuality, equality, food, environmentalism, representation, technology, dystopian, diversity, fashion, economy, Middle Eastern, sexualization, urban culture, globalization, oppression, disability, stereotype, acceptance, dominance, predatory, Caucasian, Japanese, density, Chinese, Italian, English, class, norms

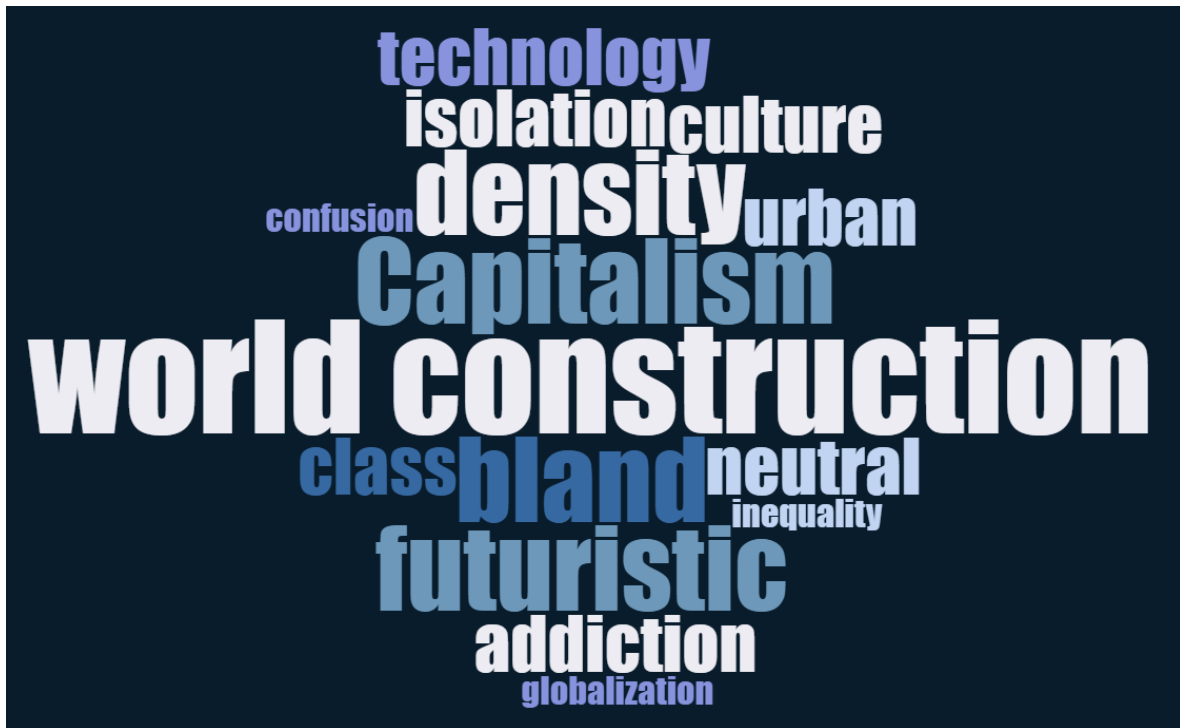


Figure 4.4 Alternative environment 2 themes

Words: world construction, Capitalism, bland, futuristic, isolation, density, neutral, class, technology, addiction, culture, urban, globalization, inequality, confusion

While the first two environments had similar amounts of themes and topics, participants had much less to discuss for the alternative environment #2.

4.2.2 Categories

From these themes the researcher defined five topics that covered all the themes. These categories were developed after analyzing the themes and the way in which participants talked about or discussed the themes. The examples in the table were taken from the interviews.

Table 4.2 Category Definitions

Category	Definition	Example
Detectability	<i>Whether the player detected concepts relating to gender, race, sexuality, and culture. This was expanded to other topics the participants noticed though they were not the focus of this study including class, disability, and environmentalism/sustainability.</i>	"You can definitely see more of the multicultural aspects...like you see a woman in a hijab..and there's just, like, a lot of different styles and classes..."
Player Emotion	<i>Whether the player expressed a specific emotion. This could be their own emotion of perceptions of what other players' emotions would be.</i>	"It's honestly a little unsettling...it feels weird"
Player Experience	Any comment regarding world building in terms of navigating the environment and specific props or details that add to the atmosphere (that they do not extrapolate any understanding from or do so afterward)	"...the fact that the architecture feels like it's...made by architects"
Understanding	<i>Anytime the player deduces or concludes something about how the game world functions in terms of overall narratives, specific events, characters, or gameplay regardless of whether the deduction was correct or incorrect.</i>	"the police car, is really beat up and...the virtual crime scene... must be a really violent society..."
Comparison	<i>Anytime the player compared something from a previous environment or within the environment itself.</i>	"...while the other one was very erotic, this one does not give off that same sort of vibe...with this ad [it] honestly kind of threw me off in comparison to the previous [environment]"

From these categories the researcher broke down how often each of these categories was addressed for each environment and for each participant. These are visualized as percentages in a pie chart. Since the largest and most consistent difference between the participants was their gender, the participants pie charts are grouped along this factor.

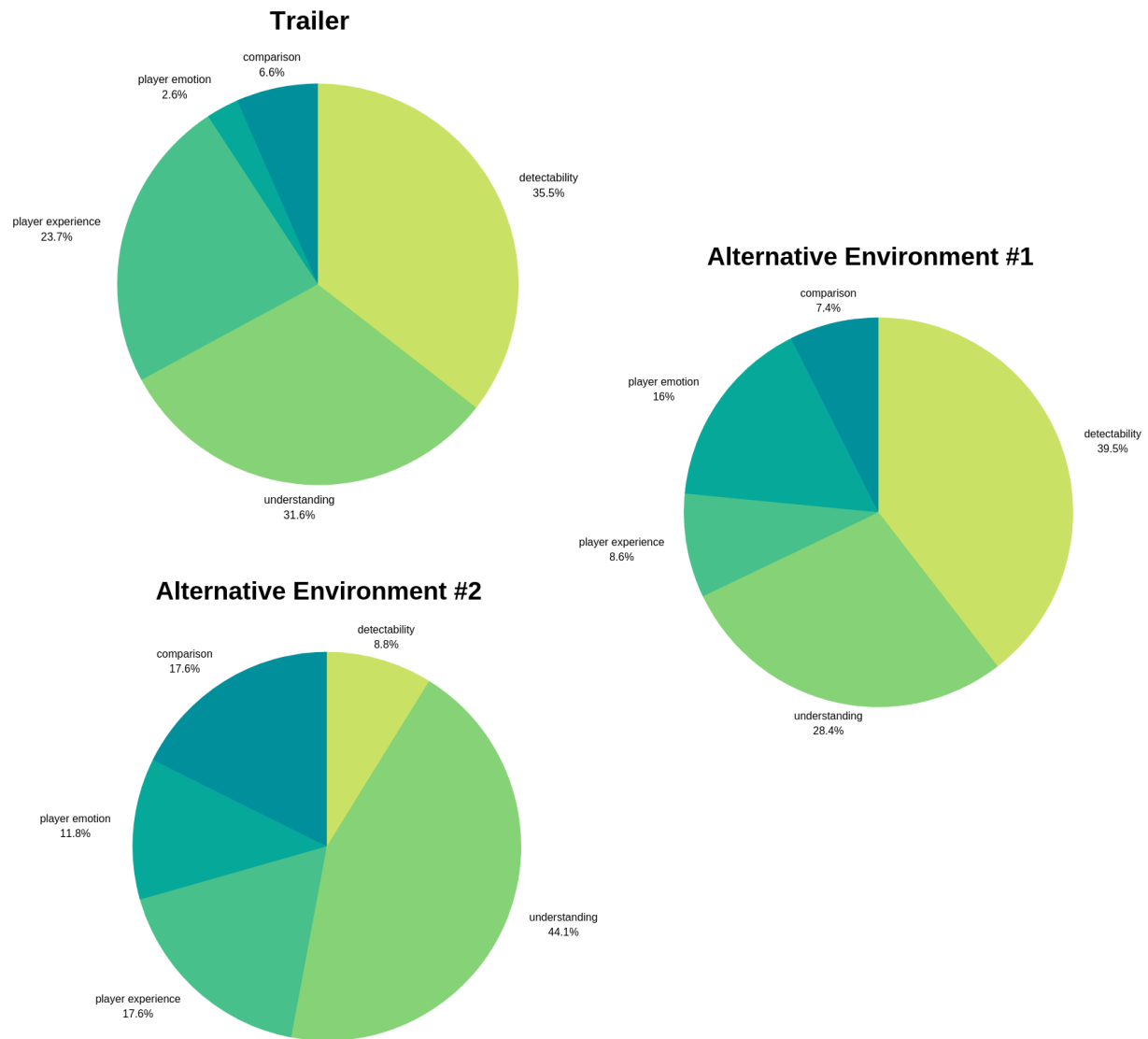


Figure 4.5 Categories by environment

The participants seemed to spend equivalent amounts of time extrapolating their own understandings about the game world for each of the environments. Percentages of *detectability* are similar for the trailer environment and alternative environment #1 but is much less for alternative environment #2. Participants spent more time comparing environments when viewing alternative environment #2. Comments and themes regarding *player experience* were much higher for the trailer environment but *player emotion* was higher for the alternative environments.

S

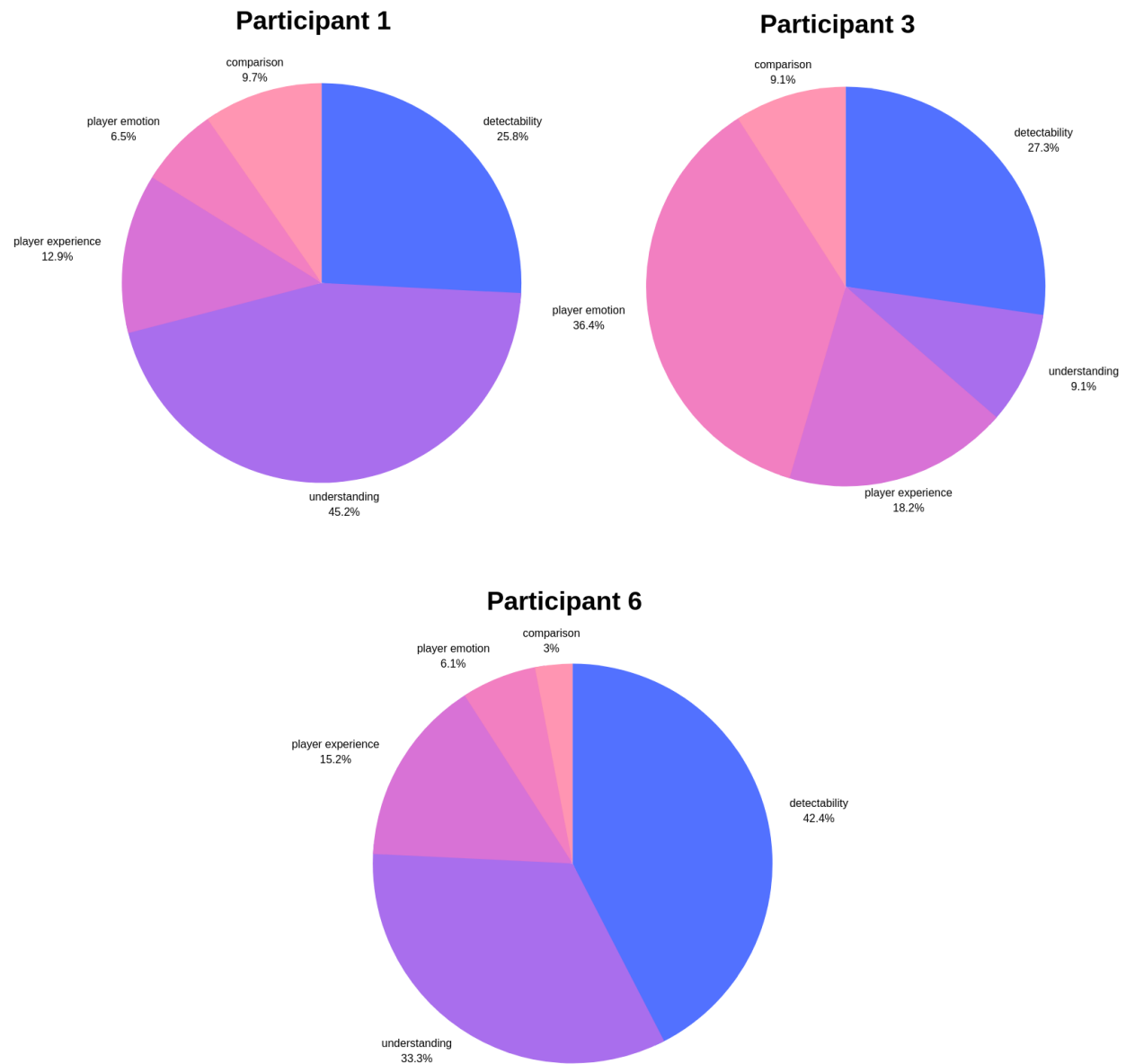


Figure 4.6 Categories by gender – female

The above participants spent similar amounts of time talking about *player experience* and had similar levels of *detectability*. Participant 3 had the largest differences where they spent the most time talking about *player emotions* and the least talking about the world and functions of the world (*understanding*).

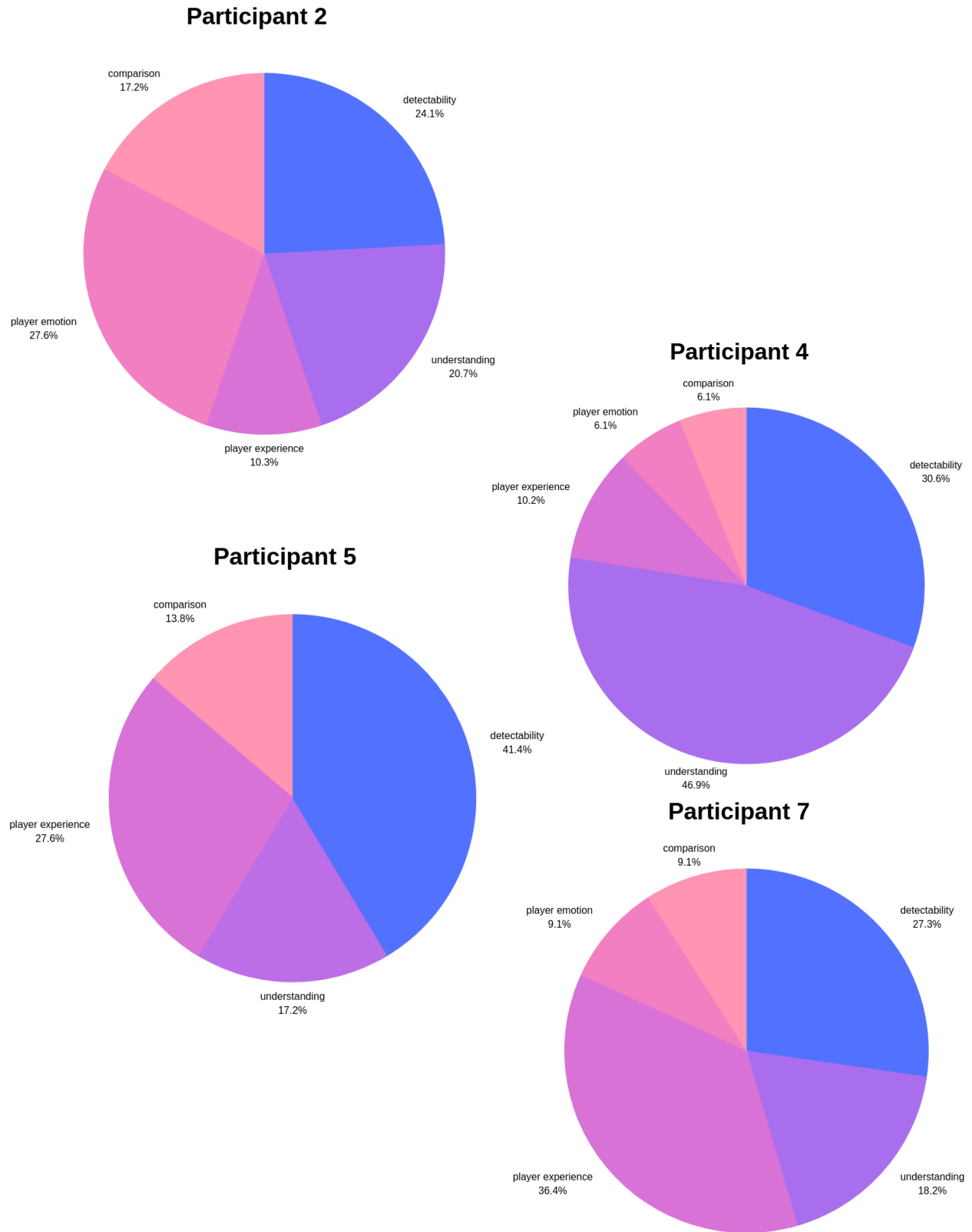


Figure 4.7 Categories by gender – male

Male participants generally spent the same amount of time talking about themes or making comments regarding *detectability* and *understanding*, with the exception of Participant 4 who spent almost half the time with concepts relating to *understanding* and the least amount of time with *comparisons*. Participant 5 never talked about *player emotions*. While levels of significance cannot be determined, it seems that male participants spent more time discussing *comparisons* and *player experience*.

4.2.3 Participants' Thoughts and Feelings on Representations of Race and Culture

Overall, participants thought the trailer environment and first alternative environment (also noted at alternative environment #1) were culturally diverse. Many addressed the signs that were in different languages, the names of the restaurants on advertisements and signs, and the cultural items for sale in both environments. For the trailer environment many participants argued that idle NPC's could be considered "part of the environment". After making this distinction, these participants addressed the different styles of clothing and how that alluded to different ethnicities, cultures, and classes. One participant stated that if you overheard these NPC's, again considering them a part of the environment, their accents and way in which they talked would impart some idea of culture and/or race.

Almost all the participants thought the second alternative environment was completely devoid of any sense or representation of culture. Though the market stalls still contained many of the same goods, the participants pointed out that they either no longer made sense because there was no cultural context, or they could not attribute anything to them without patterns or symbols.

Two participants disagreed. One stated that there was a lot of city and urban culture, consistent with the other two environments, due to the use of trash, dirt, and concrete. The other participant noted that, while it felt emptier, the environment still evoked a city culture that alluded to capitalism and had some level of globalization. This participant noted the different time zones on the tv and the scale of the buildings. They also noted that there was some representation of class as the left side of the street with more neon lights felt cleaner and the right side with the alley way and stalls felt dirtier.

Except for one participant, no one felt or perceived any differences in the way the cultures were treated within any of the environments. One participant slightly disagreed pointed out that in alternative environment #1, while Hispanic and Asian cultures had restaurants and

market booths, the other present cultures only had restaurants. Furthermore, two participants stated there was a larger sense of religion in the trailer environment with the shrine in the doctor's office, NPC's clothing, and the presence of candles. One clarified, "Why would you need candles, especially in that amount, in a futuristic environment, unless there was a certain religious use. There's plenty of lights."

One participant felt that the amount and extreme mix of "cultural trinkets and artefacts" being sold in the trailer environment within the context of a store was haphazardly done. They talked about appropriation and stated, "It's apparent that like, cultural artefacts are very accessible in this place...it doesn't feel like there's an important connection between them... here's a different culture, here's a different culture, here's a different culture.... like society's use of culture and like reselling it." Another participant felt similarly. While they enjoyed the vast representation of cultures in the environment as a whole, this particular section felt "weird". Both participants noticed the sugar skulls.

The above former participant did not get the same feeling in the first alternative environment, whereas the latter participant again had mixed feelings. The second participant still liked the representations of cultures, the specific cultural indications on the market stalls, and felt that the props were more representative and authentic but felt that because the Hispanic stall and Asian stall were so close together, it felt very "black and white"; it felt more like a comparison between the cultures and was borderline stereotypical. Again, this was due to the stalls juxtaposition, not because of the specific cultural props.

The researcher did note two unique instances in identifying and interacting with the cultural representations within alternative environment #1. The participant who identified as Asian laughed and smiled when they read the Japanese letters on the building which read, "all items are tax free". They briefly talked about their memories and experiences from living in Japan and stores with those signs. The participant who identified as Hispanic completely stopped their current train of thought when they saw the cuatros being sold, smiled and said, "Awww, are those tiny cuatros?! You know, the Hispanic cuatros? My brother used to play them all the time."

While many of the participants conflated race and culture as an indication of each other, some participants did address specific racial representations. About half of the participants detected racial diversity within the trailer environment and first alternative environment. For the

trailer environment, again, participants pointed out the actual differences in color in the NPC's skin.

With the exception of two specific advertisements, the participants struggled to detect race with the advertisements. Even if the character was not Caucasian, participants often identified them as Caucasian.

The advertisements that participants did detect included the "All Night. Every Night" advertisement during the *Cyberpunk 2077* title reveal and the advertisement during the city shot on a building right before the protagonist meets with the Corpo agent. Participants addressed the darker skin tone in both of the advertisements. One participant noted the difference in representation between the white women and the women of color during the title sequence scene. The participant noted that both were sexualized, but the women of color was shown more explicitly and fell under the Amazonian stereotype. The other participant noted the second advertisement (on the building) and her ethnic hair.

Both the trailer and first alternative environment contained men and women of color with ethnic hair. However, only the women of color were identified when participants were asked if they saw any representations of race during the think aloud playthrough in which participants identified their hair.

4.2.4 Participants' Thoughts and Feelings on Representations of Gender and Sexuality

Sexualization was the most discussed topic concerning gender and was the easiest theme to detect overall for the participants besides 'world construction'. Many addressed the hypersexualization of females in the trailer environment and the abundance of this sexualization in the advertisements. They noted how there were no equivalent advertisements that sexualized men. During the interviews participants also made comments that there were extreme overtones of dominance and female submission within some of the advertisements. Though many of them talked about the exaggeration and sexualization of female body parts, only one of the female participants specifically addressed 'body type' and that all the women were extremely fit and skinny.

Two participants stated though they were uncomfortable with these depictions, they did not feel like it was out of place within the constructed world or for the dystopian genre. One of the participants that stated this was female and the other was male. However, the female

participant also noted that in relation to alternative environment #1, which only had one type of ad relating to sex and was not explicit, that they did not miss it. Furthermore, they stated that alternative environment #1 felt like it could take place within the *Cyberpunk 2077* universe and conveyed many of the same ideas besides sexualized women.

The only sexual ad in alternative environment #1 received mixed feedback. While the aim of the researcher was to make the ad as androgynous as possible, two participants could not perceive a certain gender, one thought it was a man and a woman and related it to heteronormativity, and another thought that it was two women. The last participant noted that, while it was not as explicit as the trailer environment nor as abundant, they perceived 100% of the sexual ads in the first alternative environment as pertaining only to women. Another participant also talked about how the horizontal version conveyed similar ideas about dominance but not the vertical version.

One point of confusion for some of the participants was that in the trailer environment. Sex seemed to be a very open and accepted topic, especially with all of the ads relating to sexual services or clubs. The actual location of the services and clubs was still, as one participant noted, “tucked away”, “hidden”, and extremely dirty, much like modern buildings of a similar nature, thus alluding to the fact that it may not be acceptable. This juxtaposition of hypersexuality next to dirty alleys and tight spaces made two participants think of trafficking, pimps, and sexual violence.

More participants related a state of confusion when comparing the NPC’s fashion to these ads. One commented how diverse the crowd was, stating they noticed about an equal number of men and women. They talked about how it was hard to imagine any of these ads actually making money because it looks “quite frankly, like it was made by a white man” and not being able to reach a large demographic as was showcased within the game. Relating it to current trends in society, the participant noted that while this may be a good cautionary tale, it seemed confusing and ironically unrealistic. The other participant made note of all the women that were not wearing any pants in the ads. To them, it did not seem like a logical way to advertise and it also did not seem like a fashion statement because all of the NPC’s, especially women, were wearing pants.

One of the female participants stated in a way, the environment was very gender and sex positive. Though they mentioned that the ads were very sexual, they were, again, out in the open,

and the NPC's wore "whatever they wanted"; no one seemed to be harassing another about it. Another participant slightly disagreed stating that it had mixed notions of female empowerment and ultimately missed the mark. The extreme depictions within this environment left such an impression on this individual that by the end of the interview, they could not decide whether or not the game was supposed to be satirical, and even then "if it is satire done well."

Though there were no NPC's within alternative environment #1 or #2, many participants talked about women and the use of products in alternative environment #1. While many explained that they saw a more equal amount of men and women, there were still slightly more women, and it felt like they were associated with high fashion. As one participant put it, "Women are still being used to sell products while men participate in products."

None of the participants saw representations of sexuality in the trailer environment beyond the heteronormative male gaze in the advertisements. They also did not see anything within alternative environment #2. However, in alternative environment #1 almost all of the participants noted the gay pride flag. One stated that, "even if there is not equal treatment in this world, at least, like, someone is willing to pay for an advertisement, even when there is clearly competition". Only one participant noted that inclusion of the trans flag colors and related that to a representation of gender. No one noticed the indications of race and the two-colored bars pertaining to race on the pride sign. One participant had mixed feelings about the pride advertisements, saying that they were happy it was there, but it was still "just an ad". They related it to *Marvel's Spiderman* and the "beautiful" huge mural dedicated to pride. A final participant explained how they had never thought of using a gay symbol in an environment before this. They related it to the trailer environment and stated they now thought it was weird that it was not present in the trailer environment as: a) it was a futuristic environment and b) the society seemed very open about sexual content yet there was no support, representation, or any indication of different sexualities.

4.3 Post Likert Scale Surveys

Below are bar graphs pertaining to a few of the questions in the Likert scale surveys. The following questions were chosen because the researcher felt they revealed something interesting about the data or the participants. Some of the questions not included asked how much participants enjoyed looking at environments or how much they felt they paid attention to details

within video game environments. Answers indicated that all of the participants had a strong interest in looking at video game environments with the exception of one participant who was generally indifferent.

Q4 I thought the scene I just viewed was bland and/or boring.

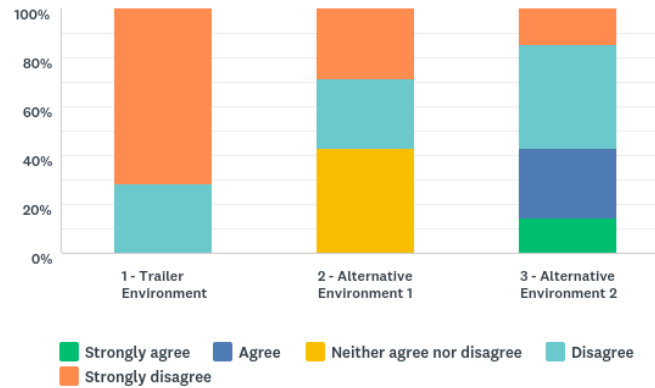


Figure 4.8 Likert Scale Q4

Q7 I found the environment to be interesting.

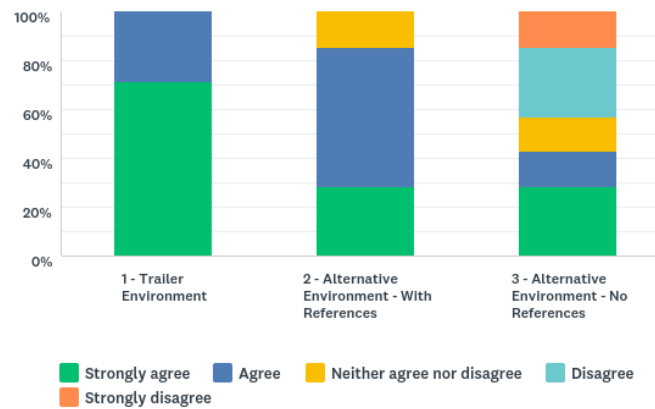


Figure 4.9 Likert Scale Q7

Q9 I was uncomfortable viewing part(s) of this environment.

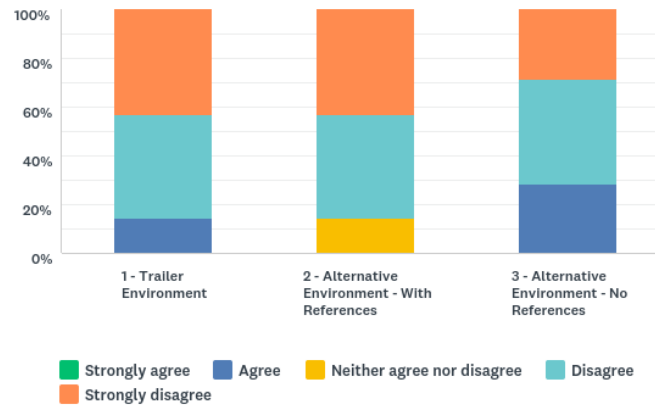


Figure 4.10 Likert Scale Q9

Q12 I was at ease looking through the environment.

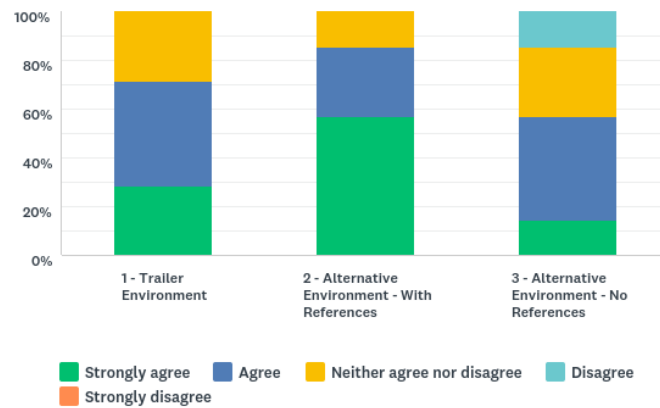


Figure 4.11 Likert Scale Q12

Q13 I think playing thought this environment would bother me.

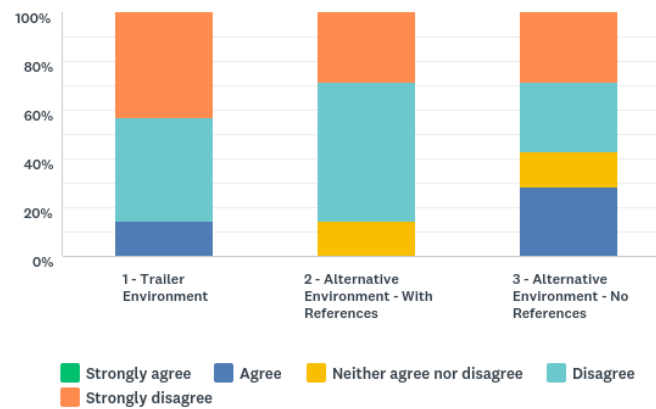


Figure 4.12 Likert Scale Q13

Q15 I thought that aspects of the environment had unfair and/or offensive representations.

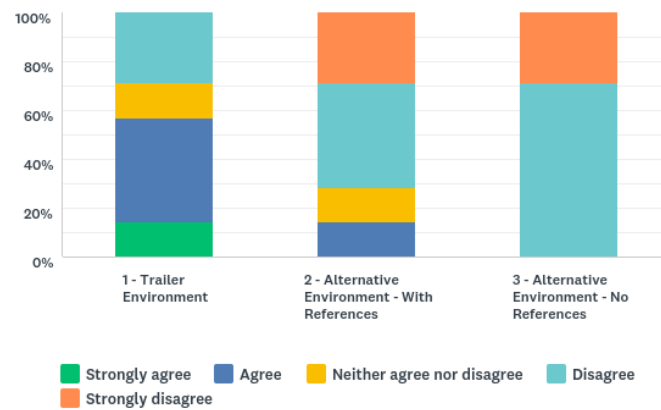


Figure 4.13 Likert Scale Q15

Q16 I think other people would be uncomfortable playing through this scene.

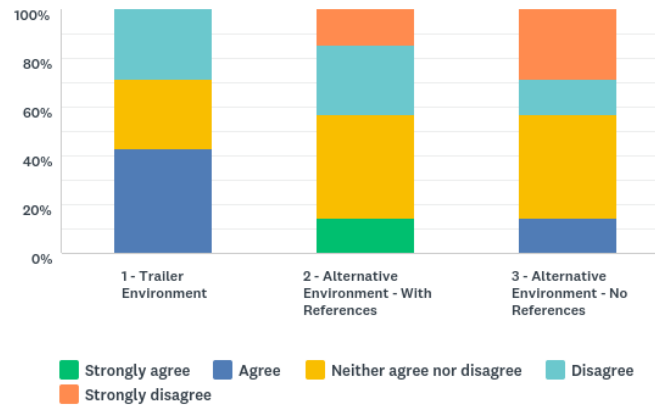


Figure 4.14 Likert Scale Q16

It should be noted and is discussed in Chapter 5 that the same participant that answered 'Agree' on question 15 also answered 'Strongly Agree' on question 16. This is the only response and comment of which the researcher questioned the honesty and validity of all the answers.

CHAPTER 5. DISCUSSIONS

5.1 Analysis

As discussed in the ‘Limitations’ section, the environment in *Cyberpunk 2077* was shown in a video format. While the trailer did carry the viewer through a connected environment for most of the trailer, it was not a playable level like the alternative environments. Players discussed in detail common or differentiating themes between the environments and spent approximately the same time ‘exploring’ each of the environments (pausing, replaying, and zooming in for the video.) There was no way to gauge how much or how consistently this made an impact.

While most of the participants talked a great deal during the think aloud portion and the interview, the researcher did notice that as the study continued, and participants viewed more environments, all of the participants became more talkative and detailed in their descriptions and responses. This may have happened because they were more comfortable with the research as time went on or found more thorough and specific ways to discuss themes and values after discussing a single environment. If the participant became more comfortable, then the researcher believes that is just a factor of adjusting to a research environment. If it was because they were able to think more about these topics and what these topics mean, participants could have started to develop a more open and direct way to detect and analyze these topics. One participant, using the contact information on the Confidentiality Form, contacted the researcher an hour after the study with a picture of papel picado that was hung outside of a nearby Mexican restaurant stating, “... just noticed these. I’m already paying more attention to my environment.” While this was not a longitudinal study nor was it in the scope to study behavior changes, it is of note that it had some impact on this individual.

As noted earlier from looking at the word clouds from the separate environments, the biggest theme from all three was ‘world construction’. Part of this was because when participants were looking at the world they were repeating directly what they saw. Many of the specific props or ideas for this included the architecture, use of concrete, and lighting. However, the way in which they talked about this was different – sometimes they extrapolated a certain understanding from the world or explained how this added to the overall futuristic dystopian feel of the environment.

‘Sexualization’ was the most notable topic in the trailer environment beside ‘world construction’. This was probably due to the fact that it was so clearly defined in this world and so visible and blatant in the presentation. However, the researcher noted that because most of the participants were Caucasian this could have had an effect. Discussions of gender and sexualization have become more popular and are easier for most of the participants to discuss as they do not relate to another race or particular culture.

Sex and sexual characters are not inherently problematic, but the combination of extremism, bias, and use of stereotypes is harmful. As indicated in the Likert scale post surveys, more participants felt uncomfortable and thought there were unfair representations in the trailer environment compared to the first alternative environment. (Participants were uncomfortable in the second alternative environment because of the isolation and “lack of life”.) Furthermore, most of the participants thought the first alternative environment would fit into the *Cyberpunk 2077* universe, or would with a few tweaks like adding more smog, adding more dirt and trash, or adding vehicles. Though two people stated they thought the sexualized representations fit within the genre, only the female participant of the two said it was not missed in the first alternative environment and still conveyed the same overall ideas. This again, questions, how necessary the extreme and abundant use of these ads in the trailer environment are needed.

Continuing this idea one participant pointed out mixed signals of female empowerment. They stated that the society in the trailer environment seems very open about sex but is still based heavily on stereotypes and tropes in how the women and women of different races are depicted. Though this manifested itself in a different way, this was a problem many pointed out in *The Witcher 3* and may have been a carryover effect.

Though participants did not feel there was sexualization in the first alternative environment, as they related the ‘Every Night’ ad more to just sex itself, they did point out that there were still slightly more women, that these women seemed to evoke a sense of “high fashion”, and fell into the idea that “women are used to sell products while men participate in products”. Despite the researcher’s awareness and studies into many of these topics and approached the alternative environments with very specific ideas and intentions, they still fell into this modern advertising trope.

The researcher really began to think about how these personal experiences and lack of other experiences could manifest within the environment after one participant stated that the first

alternative environment looked like San Francisco. As the *Cyberpunk 2077* game takes place in California, this could be viewed as a success; however, the researcher did spend a week in San Francisco during the middle of development for the two alternative scenes.

Two other detected examples with this group of participants included the emissive levels on the ads making race harder to read and the placing of the market stalls next to each other. This highlights why it is important to get other people, besides the core developers and developers within a sphere of influence, to review the art and environments.

Overall, more participants agreed that they thought other people would have issues with these representations within the environments. Even if they themselves thought the representation fit the genre, they acknowledged how it could turn other people away. One anomaly in the Likert scale data was questions 15 and 16. The same person that put ‘Agree’ for the first alternative environment in question 15 put ‘Strongly Agree’ in question 16. This is notable as this participant expressed extreme interest in the cyberpunk genre and was one of the few participants that knew about the game and was actively waiting for the games release. They clarified on this decision pointing to the “Every Night Your Desire” ad in the first alternative environment. They thought that it contained two women and as it was the only portion of the environment advertising sex was unfair. This was the only issue they had with the environment in terms of representations and noted how the trailer environment had worse representations, yet only answered ‘Agree’ on questions 15 and 16 for the trailer environment. Due to these comments and the participant’s answers, this was the only response the researcher questioned the honesty and validity of, especially since they noted the differences in the trailer environment and the agreed the representations were “more extreme and worse”.

While participants were able to easily distinguish a multicultural setting in the trailer environment and first alternative environment, ‘culture’ was still a relatively debated concept in the second alternative environment because participants either talked about the extreme lack of culture or presence of urban and city culture.

Participants debated the dirtiness of each of the environments: some thought there was a lot of trash and dirt while others stated it was relatively clean for a city. However, the trailer environment evoked a larger sense of violence and sex. This was due to the number of police NPC’s, the damaged police car, the sexual advertisements, and the colors, fonts, and shapes used in, as one participant noted, “the red light district”. The first alternative environment, however,

evoked a larger sense of addiction, with the amount of coffee cups, number of soda cans, and energy drink advertisements. A few participants also thought the large building was a casino.

Looking at the categories and how each environment was discussed, it is clear that overall, participants struggled to understand anything about the game world based on the environment alone and spent more time comparing it to other environments. However, there was still a similar level of '*detectability*' within the second alternative environment compared to the previous two. This was offset and affected by how often some of the participants stated they could *not* detect any sense of race, sexuality, culture or gender represented within the environment. Despite this, since there was less to look at, many more noticed the trash and grunge and were more likely to talk about class and addiction. Furthermore, the participants that viewed this environment first out of all three went much more in depth in talking about the environment and were more open to learning about the possible game world, whereas participants that viewed the environment second or third spent most of the time comparing the environments. The researcher thinks this was due to the strong contrast in the environment and a carry over or priming effect.

The first alternative environment evoked more responses relating to player emotion, and most of these emotions were positive. This is consistent with the events in which this was the only environment that made the two participants of different race or ethnicity smile and laugh as they personally related to the props within the environment. However, it was noted that the stark contrast and juxtaposition of the stalls felt like a comparison, therefore future adjustments should keep the specific cultural props but layout the scene, so it felt less like a contrast between cultures.

Participants made comparisons between environments or between aspects within a single environment. Multiple participants described a sense of confusion with the trailer environment and the second alternative environment. The trailer was confusing for some of the players because the representations in the illustrated NPC population did not match the advertisements. The style of clothing in, even the slightly less sexualized ads, did not match the fashion the NPC's were wearing, despite the fact that there was still a wide variety of fashions. There was also a diverse female population, yet the advertisements still catered to a heteronormative white male gaze. Participants stated that it made even less sense in a futuristic context, where if these issues are still present, they would not be as blatant or as commonly represented in the trailer environment.

Participants were confused in the second alternative environment due to the severe lack of representations. They struggled to garner any meaning, and some noted that the props that were still there, especially the remaining market stall goods, no longer made sense.

Analyzing these viewpoints together, it is clear that it is important to have these diverse representations within the game world but that the message needs to be cohesive within the given setting. Furthermore, the types of representation in the environment matter as participants noted certain degrees of uneasiness for both of these environments. In the trailer environment this related to the biased sexualization towards women, where no one detected a single sexualized man. For the second alternative environment, it related to a sense of isolation.

The study provided an example of “playtesting” in relation to solely the environment and how this imparted certain understanding and values. Though the researcher had Hispanic men and women, men and women of color, and Asian men and women present in the advertisements, on the vending machines, in the magazines, and in the graffiti, most players thought they were all white or a majority white. Though one person saw the Asian woman, and three people noticed the men and women of color, they still talked about how they thought it was still a majority white representation despite the feeling that the rest of the environment was not “white informed”.

This was a result of two major factors: the first was that adding emissive maps to the advertisements without calibrating the original image led to a whitewashing effect. So while the researcher knew what ethnicities and races were present, this was not as well related or informed to the players. Many players noted a similar problem in the trailer environment where they could not tell the race of a character in the advertisements because of the extreme stylized filter used or because the advertisement was overall brighter. The second issue was how the players moved through the levels. As discussed in Chapter 3, the researcher felt the trailer had a large representation of white people and most of the people players initially saw were white, so they wanted the first representation of people players saw in the first alternative environment to be not Caucasian. Based on the player starting position, if the players looked forward or to the right, or to the left and up, they would either see people of color or have a chance to see an Asian woman first. This did not work out. Players did not move through the environment the same way the researcher did. In fact, none of the participants moved through the environment similarly to the researcher. They did not see the graffiti first, they did not look right, and many did not look

upwards until later. Due to this difference and discrepancy in movement, the first alternative environment seemed to place a higher value on white representation and participants noticed this.

The researcher also noted, that in the trailer environment, whether it was because of emissive levels, lighting, or use of stylized filters, if the players could not see a person's race, they usually assumed they were white. This could be due to the fact that the advertisements were created by a largely white informed society. Though the simple inclusion of different races is a step forward from *The Witcher 3*, there are still overtones of white dominance.

After starting discussions on sexuality, many came to realize the lack of different sexual identities within the trailer environment despite the futuristic setting and, again, the openness of the sexual content. Participants noticed the pride ads in the first alternative environment. Some described how having the Pride flag within an advertisement added an additional value to its meaning. They determined that people in this world value diverse sexual identities because they are willing to pay for advertising space. Another person, while agreeing with this notion, thought it would have been better and more cohesive if this was represented within the graffiti as well. While one participant noticed the trans flag colors, no one noticed the colored bars representing race. Again, this could be attributed to the fact that many of the participants were Caucasian.

Below is a summary of the major topics discussed among all the participants. The major themes or ideas are connected via the lines and the colored circles indicated how much participants agreed or disagreed on the topics. The purple circles indicate "outlier" comments or comments that were only by one person or very briefly by two people, but still revealed something interesting. The location and proximity of the outliers show which topics the comments were related to.

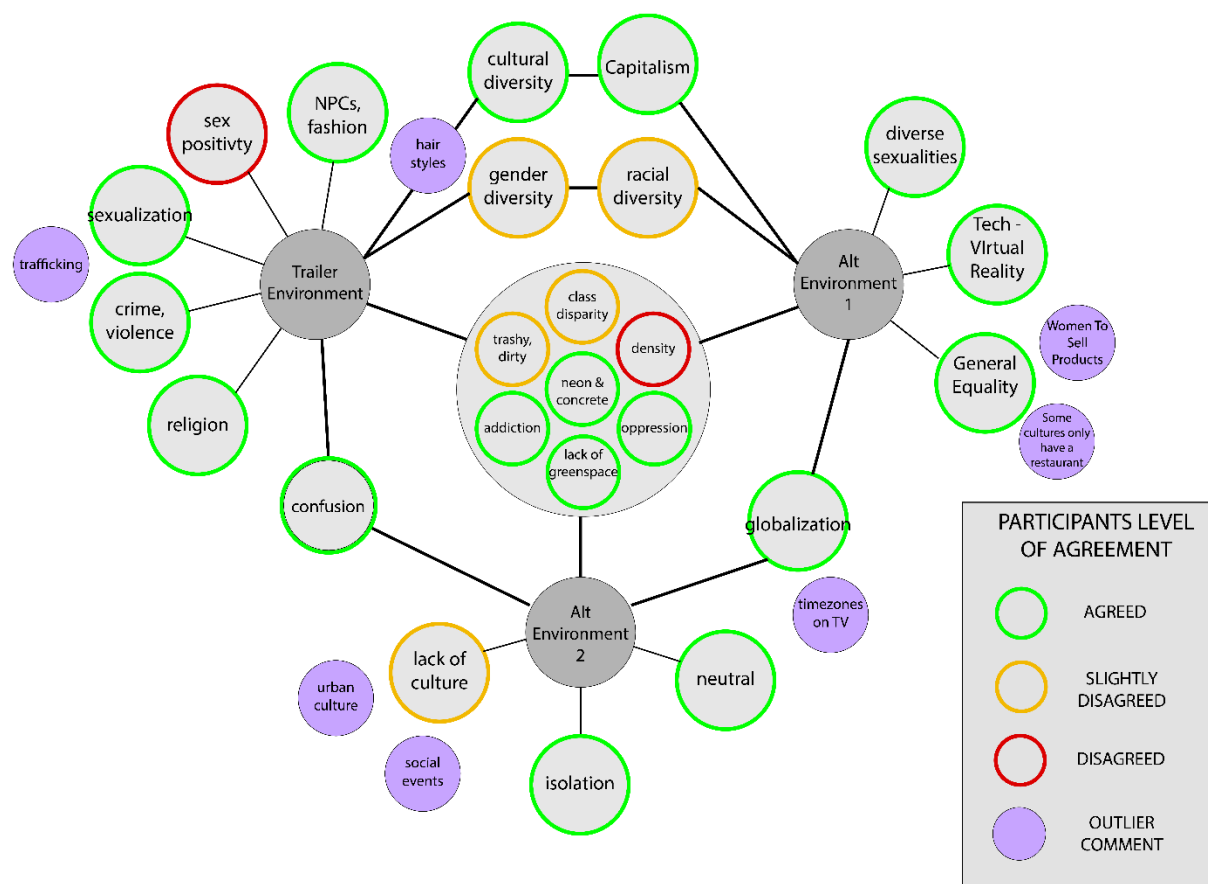


Figure 5.1 Summary comparisons between all three environments

5.2 Conclusions

One of the biggest insights the researcher discovered was the idea of focusing on user testing just for environments in video games. This topic is not addressed in papers or conferences like GDC. Most of the focus is on testing the gameplay, the usability of the UI and controls, or to test for bugs or glitches. While talks have briefly mentioned a comment made about the environment, it is usually something like “I found this rock difficult to climb” or “The texture/lighting was too dark, so I did not see this clue”. Even then these ideas are still heavily focused more around level design, flow, and interactions with the environment, not just seeing the environment in a standalone context and what it conveys.

Specifically, the researcher started to question what aspects did players notice in terms of quantity and repetition? What aspects did they notice in terms of juxtaposition? What aspects did players notice very specific examples of? And how do answers to all of these questions generate certain ideas and values?

For these environments a good example were the cultural goods being sold in the trailer and first alternative environments, and the lack of cultural patterns on the goods in the second alternative environment. The most noticed cultural props were the ones that were being sold because of their repetition, conveying a value on multiculturalism. However, the way in which these two environments were set up and which props were used revealed more specific insights and additional values. The trailer environment felt somewhat like cultural appropriation where people just absorbed culture because they wanted to and had easy access to do so, whereas the first alternative environment seemed more authentic and garnered more personal responses but felt stereotypical because of how the cultures were set up in close proximity together.

Currently futuristic dystopian games focus on race and gender primarily through pictures of humans within advertisements, posters, and magazines. Culture is conveyed through store signs, NPC's clothing, hair styles, items being sold in shops, graffiti, use of construction materials, and the plants present (especially if they seem like they are not part of the natural environment.) Sexuality is more nuanced where only character dialog or specific symbols relating to certain ideas of sexual identities convey these representations.

However, values and themes within these representations are determined and perceived based on placement of these items, repetition of these items, the materials and textures being used, and physically how players move through a space and the order in which they see things.

The researcher concluded that it is possible to create interesting futuristic dystopian video game environments that convey the same ideas, themes, and values, without relying on stereotypes or heavily biased depictions that further an overall narrative of exclusion. Certain values are created and understood when testing the game elements together, and while this is important, this is currently the norm for much of the scholarship that is produced. What is discussed in development spaces misses a key step. In order to design a cohesive and inclusive space, even among darker themes of sexualization, violence, and addiction, it is important to test these environments separately and on their own individually.

5.3 Future Research

As this was a pilot study, possible future research could include a continuation, adaptation, or comparison of this study. This study could be done once *Cyberpunk 2077* is released and have the participants walk through all of the environments. A study that does this could then either draw new conclusions or compare the results of this study to see any similarities and differences. The alternative environments contained environmental snapshots. An adaption of this study could be done with more complete environments in which the player and participants cannot see the edge of the level or map.

There are many nuances when dealing with race, gender, culture, and sexuality (as well as class, disability, ethnicity, and religion). Future studies could focus on a single intersection of these ideas and how they function within game environments and how players perceive them. Studies could also compare different game environments from different genres or continue to look at dystopian, futuristic environments but with multiple games that fit this description.

APPENDIX A. SURVEYS

Information Sheet/Presurvey

The following information will be kept secure and confidential. This information will help with background and demographic analysis of the study. If you do not wish to answer, you may choose to leave any answer blank.

Gender _____

Race: Asian, Native American, Black, White, Pacific Islander, Other

Are you Hispanic or Latino: Yes or No

Age _____

Major _____

Class: Freshman, Sophomore, Junior, Senior, Graduate

When did you start playing video games?

How often do you play video games?

Everyday, A few days a week, A few days a month, Rarely

What are your favorite genres of video games to play (Circle all that apply)?

Platformer, First person shooter, Fighting/Beat 'em up, Stealth, Survival, Rhythm/Musical, Horror, Survival, Text adventure, RPG, MMORPG, Racing, Simulation, Real-time Strategy, Tower Defense, Sports game, Board/Card Games, Party Games

What platforms do you often play video games on (Circle all that apply)?

Playstation, Xbox, Mobile phone, Wii U/Wii, Nintendo Switch, Nintendo DS, PC, Classical consoles (Atari, GameCube, PlayStation), Other

Do you have any favorite video games? If so which ones?

Do you prefer to play games socially or individually (Circle one)? Socially, Individually, Both Equally

If socially or equally, who do you normally play with (Circle all that apply): friends, family, partner, random online players?

Which aspects of video games and gaming communities do you enjoy, if any?

Which aspects of video games and gaming communities do you dislike, if any?

Have you taken any Ethics in Video Games, World Building or Narratives in Video Games classes here at Purdue? (Any of Dr. Samantha Blackmon's video game classes - please circle one.)

Yes, No, No – but I have taken another class from Dr. Blackmon

Likert Scale Survey

Answers on a 5-point scale ranging from 'Strongly Disagree' to 'Strongly Agree'.
Questions were randomized once from the below order and did not contain the descriptions about what the questions was aimed at measuring.

Clarity of the scene and overall "fit" of the environment

1. I thought the scene I just viewed was bland and/or boring.
2. I think I understood the genre and location of the scene.
3. In general, when playing video games, I feel that I do not pay much attention to video game environments.
4. I found the environment to be interesting.
5. I thought the environment was confusing.
6. I enjoy looking at the environments and the details when I play games.

Feelings and understandings toward representations (gender and race) within the environment.

7. I was uncomfortable viewing part(s) of this environment.
- a. If any, which parts:
8. I found diverse representations within the environment.
- . If so, which aspects:
9. I thought that aspects of the environment had unfair and/or offensive representations.
- . If any, which aspects:
10. I was at ease looking though the environment.
11. I would be okay playing through this environment in a video game.
12. I think playing through this environment would bother me.

How much the study changed their perspective or feelings toward content in environments.

13. In the future I think I will pay more attention to ideas and stories conveyed within video game environments.
14. Moving forward, I do not feel like I will notice or like to look for details within video game environments.
15. I think other people would be uncomfortable playing through this scene.
16. I believe other people would be okay playing through this scene.

APPENDIX B. INTERVIEW PROTOCOL

Coding scheme used for the transcribed recording:

TimeStamp	Quote	Category	Themes	Specific props, aspects in env.
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Introductory Protocol

Thank you so much for your time and being here. We are going to get started right away. You will first need to sign a consent form detailing what we will be discussing and studying here today. I will go over the key points on it and then you can read it over at your own leisure and if you have any questions feel free to ask me.

Your participation in this study is voluntary and you may choose not to participate or to not answer certain questions at anytime without penalty. The study aims to broaden discussions surrounding values and certain designs within environments and environmental storytelling for video games. Today you will fill out a pre-survey asking demographic and general gaming experience. We will then look at three environments in a random order. For each of these environments you will have a few minutes to look around and explore. During this phase I ask that you think aloud any thoughts and feelings regarding anything. I will not be asking you questions during this time but again feel free to ask me questions. The only thing I may say is “Remember you may think aloud any thoughts”. After that we will go into an interview. Finally you will fill out a Likert scale survey. We will repeat this for environments 2 and 3.

Unless something comes up in the middle of the study and you wish to reschedule anything that has not been completed we will meet this one time. If needed you may take a break to take a breather or to go to the bathroom.

There are no risks involved in this study that are any greater than that of playing another video game in which you sit down to play.

Your confidentiality is important to me. All physical files, the consent form and notes, will be locked in a cabinet with a key only I have. All other documents, the digital surveys and the screen and audio captures of the play throughs and interviews will be uploaded to survey monkey and Purdue's File Locker which are password protected and with 2 factor authentication.

Here are people you can contact about the study. By signing this you have agreed that you understand what that study entails. You will be provided a copy of the consent form and a card containing my contact information at the end of the study. Do you have any questions for me right now?

Other Quick things before getting started:

Though I will quickly go over some things before you explore each environment here are some overall considerations:

- Is there anywhere you need to immediately be after this? (Asking so I can judge length of interviews)
- I am not a developer at CD Projekt Red. Please answer all questions as honestly as possible and say anything that comes to mind during the think aloud phase.
- I might use the word 'scene' or 'environment' interchangeably. Everytime I ask a question about a scene or environment I solely talking about the environment you just viewed, unless otherwise specified within the question.
- There is no right or wrong answer to anything and though I am looking for patterns and themes I am not looking for any specific answers so please don't feel pressured to answer a certain way. If you need clarification on a question just and I will try to reword it.
- During the interviews I may ask similar or same questions from previous environments.
- I will be stopping and starting the OBS recordings between playthroughs and interviews so that the file sizes are smaller.
- There is not audio in any of the environments.

If Viewing the Trailer Environment:

- For this environment you will view parts of a trailer. Though the video pauses at certain times, these pauses are only for about 5 seconds. Use the spacebar to pause the video for

longer durations and feel free to pause it whenever you want to. You may also rewatch portions of the video. Here is a zoom tool if you want to use it to take a closer look. Since this is from the trailer there is a lot of content within the video. Please try to pay attention to the environment and only the environment as much as possible. Now what constitutes as “part of the environment” I will leave up to you.

If Viewing the Environment with References (Alternative Environment 1)

- For this environment use the WASD keys and the mouse to explore the environment. Think aloud anything that crosses your mind about the environment.

If Viewing Environment without References (Alternative Environment 2)

- For this environment use the WASD keys and the mouse to explore the environment. Think aloud anything that crosses your mind about the environment.

Closure

That wraps it up. Thank you so much for your time and discussions. The data I am collecting is for my thesis. I am defending this semester so it should be published in the next few months. Here is a copy of the consent form and my contact information if you have any questions or want to discuss the study later. Do you have any other questions?

Warm Up Questions:

What were your initial thoughts viewing the environment?

What did you discover while walking through the environment?

Are there any parts of the environments you enjoyed exploring or looking at?

Did anything catch or hold your attention?

Were there any specific props you paid attention to? If so which one(s)?

Was there anything that confused you or you thought did not fit in with the rest of the scene?

What genre do you think this environment takes place in?

After viewing this environment would you be interested in playing the game that it take place in?

How do you think this compares to the previous scene(s) you viewed? What seems different or the same?

Advanced Questions:

Did any of your thoughts or feelings change while viewing the environment?

Did you see any aspect of cultures within the environments? If so, what? How did you feel about it?

Did you see any aspect of gender within the environments? If so, what? How did you feel about it?

Did you see any aspect of sexuality within the environments? If so, what? How did you feel about it?

Did you see any aspect of race with the environments? If so, what? How did you feel about it?

How do you think the representations of the different cultures within the environments compared to one another?

“...representations of race compared to one another?”

“...representations of gender compared to one another?”

“...representations of sexuality compared to one another?”

Are there any parts of the environment you disliked or were uncomfortable with?

What would you change about the environment?

Did any aspects of the environment make you feel uncomfortable or offended? Which parts and why? How would you like to see them changed?/How would you change it?

If you saw this environment being used to advertise a game, what do you think the company believes are the important aspects to convey within the world?

Do you think this, or parts of this, futuristic environment/world is a plausible creation of what could be? Why or why not?

APPENDIX C. EXTERNAL ASSETS AND RESOURCES

List of references used to help create the two alternative scenes. The researcher either used these assets, part of the assets, or used the asset as a base and starting point.

Dirt, Road, Sidewalk Decals available on

<https://www.textures.com/>

Lucky Cats (Maneki Neko) created by bs3; July 13, 2015

<https://www.thingiverse.com/thing:923097>

Normal Decals created by Evgeniy Kashirskiy; March 2, 2018

<https://www.unrealengine.com/marketplace/en-US/slug/normal-damage-decals>

Plant created by papalegoas3; January 27, 2019

<https://www.cgtrader.com/free-3d-models/plant/pot-plant/indoor-plants>

Trash Bags created by Bohdan Lvov; May 13, 2018

<https://sketchfab.com/3d-models/trash-bags-cd134204748b4e28a9e3494638cc595f>

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