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The Game is the Message,
Selected Articles from the
2018 International DIGRA Conference

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The Game is the Message

The 2018 Digital Games Research Association International Conference (DIGRA 2018), *The Game is the Message* was held at the Campus Luigi Einaudi of Turin University, Italy, 25-28 July 2018. Since it was first held in 2003, the DiGRA International Conference series provides a venue for the presentation and discussion of games-related research from multiple and diverse research disciplines.

DIGRA 2018 sought to explore the role of games within the wider media ecosystem. The call for papers for the conference was titled *The Game is the Message*, in an overt attempt to create a dialogue between the methods and findings of game studies and the wider context of media studies. In this sense, the reference to the work of Marshall McLuhan and, in particular, to a phrase that has now reached the status of a veritable truism in media studies, should be interpreted in two ways. On the one hand, the invitation to analyze the game *as* the message aimed at encouraging scholars to discuss digital games beyond their immediate representative and/or narrative content. In other words, we wanted to invite our peers in the game studies community to analyze the features of games as media, as devices that can transmit, record, archive, store content in ways that are specific to games and that depend on a number of technological, social, economic, and historical factors. One of the main questions we asked with the call for papers was, then, what is the language of games? How do they speak. On the other hand, the McLuhanian reference that constituted the title of the call for papers had a second, arguably more political, intent. That is, encouraging game scholars to think about games as part of a larger and more complex ecosystem of media, whose relations rather than specificities are the engines of complex and often contradictory cultural, communicative, and social phenomena. In this sense, we think that video games can be thought of in terms of their trajectories as media objects – which include, for example, labor-related issues, cultural interpretations vis-à-vis other media forms, issues of sustainability, archival practices, and disposal – rather than merely as ways to build narrative worlds.

The call for papers was thus articulated in seven tracks that offered a model of the curators' intent in designing the conference. More specifically, the **platforms** track solicited proposals dealing with technological issues and their relation to different power structures. The **users** track invited proposals from scholars working at the intersection of the humanities and social sciences dealing with the ways in which humans and machines work together or challenge each other in digital games. The **meaning-**

making track focused on the modes of signification and aesthetic devices employed by digital games in dealing with specific themes or content. The **meta-play** track invited scholars to reflect on the nature of play *beyond* the act of gameplay. Digital games are not merely played, but often viewed, modified, hacked, pirated, studied, analyzed. The **context** track focused on the contexts in which digital games are produced, distributed, and played, asking authors to tackle issues of labor, technological tools, and economic contingencies Finally the **poetics** track invited authors to reflect on the specific language of games, on the ways in which digital play has created its own figures of speech, its poetic punctuations, and its rhetorics.

DiGRA 2018 received 315 submissions, including full papers, extended abstracts, panel proposals and applications for the doctoral consortium. Sixty seven full paper submissions were received. From these full paper submissions 40 full papers were selected for publication in the DiGRA 2018 conference proceedings and to be presented at the conference. All submitted full papers were subjected to double blind peer review by an independent international reviewing committee. All full papers were reviewed in their entirety by at least three reviewers. DiGRA 2018 received 216 extended abstract submissions. From these submissions 106 extended abstracts were selected for presentation at the conference. All extended abstracts were peer reviewed by an independent international reviewing committee. All extended abstracts were reviewed by at least three reviewers. Overall, DIGRA2018 had a 52% acceptance rate for full papers and extended abstract submissions.

DiGRA 2018 received 20 panel proposals. From these proposals 19 panels were selected for participation in the conference. All panel proposals were peer reviewed by an independent international reviewing committee of at least three reviewers. Panels were selected by the Conference and Program chairs based on the reviews and interest to the DiGRA audience.

From the 146 accepted full paper and extended abstract submissions to DIGRA 2018, ten submissions were invited to participate in this special issue. Papers were selected from the conference submissions that were given the highest rating by reviewers in each track. Track chairs were also asked to recommend the best submissions from each track. Effort was made to select submissions from across all tracks in the conference to reflect the diversity of submissions to the conference in the special issue. Papers for the special issue were each reviewed by two reviewers and a meta-reviewer. Feedback from reviewers was used by authors to revise and rework the 8 papers in this special issue.

In the first paper in this collection, **Gabriela T. Richard, Zachary A. McKinley and Robert William Ashley** report on a study of communication and collaboration between team members during competition in a major (US) MOBA (League of Legends) collegiate esports tournament. Applying concepts from theories of situated learning and community of practice, they show that negotiation and discussion between team members leads to individual and collective learning, which leads to improved decision-making, domain knowledge mastery, and proficiency.

Miia Siutila and **Ellinoora Havaste** examined the perception of women competitors in esports through an analysis of the responses on Reddit to the announcements of all-female teams in League of Legends and Counter-Strike: Global Offensive. They found that commenters on Reddit typically adhered to the view that esports was a meritocracy and the lack of female players at top level competitions was due to lack of individual skill and dedication to esports, rather than social, identity or biological factors. They argue that these negative stereotypes are an ongoing hindrance to gender equality in esports.

Gege Gao and **Patrick C. Shih** investigated female participation in MOBA games, comparing two games across a variety of dimension to understand why one game, Kings of Glory, has had relatively high female participation compared with other MOBA

games such as League of Legends. Based on their analysis of 20 interviews with experienced MOBA players they conclude that increased female participation in Kings of Glory was promoted by: a lower barrier to entry; mobility; sociability; and, avatar perception.

In her paper, *Playing Whiteness in Crisis in The Last of Us and Tomb Raider*, **Soraya Murray** examines how the politics of "whiteness" is depicted and played out in two video games and argues that whiteness is construed as both normative yet under duress.

Through a consideration of the game mechanics and reward structures of *Hearth Stone*, **Kenton Taylor Howard** considers how the monetization of free-to-play games through micro-transactions can lead "casual" players to adopt more "hardcore" playing styles. Ironically, while a "hardcore" playing style is often associated with spending money in free-to-play games, Howard notes that in order to remain competitive so-called "causal" players who do not spend money on the game need to invest more time and effort on the game – to be more "hardcore" in their approach to play – compared to those who engage in microtransactions, who can afford to be more "casual" in their approach to play.

Responding to current anxieties around potentially exploitative forms of monetization in games, **Rune Kristian Lundedal Nielsen** and **Paweł Grabarczyk** pose the question, are loot boxes gambling? To address this question, they develop a framework for understanding loot boxes as "random reward mechanism" (RRM). They identify four categories of RRMs based on how embedded or isolated they are from real world economies. They suggest that all RRMs have gambling-like features but that RRMs with rewards that can be purchased and sold should be considered as genuine forms of gambling.

Stefan Brückner and his co-authors examine the reception of Japanese role-playing games (JRPG) in Germany and Japan

through a content analysis of reviews and user comments on video game websites, Amazon and Steam. In their analysis they compare professional media reviews with user reviews as well as comparing the reception of JRPGs in Germany and Japan, noting many cultural differences in the ways these games are received.

Finally, **Isaac Karth's** paper presents elements of a new vocabulary developed to describe, conceptualise and critiquing procedurally generated game content. The "poetics" of procedural generation presented in the paper emphasises the importance of understanding the effect on players and games of different strategies for procedurally generated content.

The papers in this special issue highlight the breadth and strength of research and scholarship at the 2018 DIGRA International Conference and in the game studies discipline more broadly. We hope that you find this special issue interesting and thought-provoking. Finally, we would like to thank the other program chair, Torill Mortensen for her assistance with the DIGRA 2018 program.

ACKNOWLEDGMENTS

We wish to thank the anonymous reviewers, the volunteers, track chairs and conference organizers who gave their time and effort to making DIGRA 2018 a successful conference. We would also like to thank conference sponsors for their support.

1.

Collegiate Esports as Learning Ecologies

Investigating Collaboration, Reflection and Cognition During Competitions

Gabriela T. Richard, Zachary A. McKinley, & Robert William Ashley

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ABSTRACT

In this paper, we explore the ways in which a collegiate esports team's play and performance underscore micro-level shifts in learning, domain mastery, and expertise through simultaneously collaborative and competitive gameplay. Specifically, with this aim, we evaluate how esports' high-stakes team play and

organizational activities provide evidence of processes and practices that are important for learning-relevant trajectories in and beyond higher education. Throughout the course of a three-game match in a major collegiate esports tournament, players demonstrated decision-making, reflection and dimensions of individual and collaborative learning. We also found support for improved meta-gaming knowledge – or distributed, community-centered knowledge around the game – which underscored players' domain learning and growth. Our findings highlight evidence of perceptual learning, as demonstrated through the players' flexibility in adapting to increasingly complex challenges. We propose that these findings emphasize the importance of esports as meaningful and noteworthy learning ecologies which need to be more deeply examined in light of historic gender and racial barriers to educational and professional aspirations in gaming.

Keywords

esports, games and learning, collegiate athletics, collaboration, livestreaming, cognitive apprenticeship, equity

INTRODUCTION

The rise of gaming as a spectator sport (i.e., esports) has propelled gaming competitions and interest-driven game-based learning practices into the mainstream (e.g., Kow and Young, 2013; Richard, 2017; Takahashi, 2016; Taylor, 2012; Wingfield, 2014). While video gaming competitions have taken place since the 1970s (e.g., Richard and Gray, 2018), the past few years have seen tremendous growth, in part due to livestreaming. Figures from 2016 indicate that *Twitch*, a popular gaming livestreaming site, alone had over 100 million viewers per month (Takahashi, 2016), and estimates predict that gaming viewership will increase to over 700 million per month in 2019 (Geeter, 2018). In fact, many popular esports games, such as *League of Legends* (a multiplayer

battle arena game) and *Fortnite* (a player-versus-player "battle royale" game), have millions of unique viewers, surpassing hit TV shows like *The Walking Dead* (Geeter, 2018), and generate annual revenues that are on par with traditional sports spectatorship (Taylor, 2017).

Additionally, a wealth of research over the past two decades has demonstrated the potential for commercial and educational games to engage learners and players in distributed and situated learning, problem solving, spatial skill development, systematic thinking, content area knowledge (such as history), and adaptive reasoning (e.g., Connolly et al., 2012; Squire, 2011; Steinkuehler and Squire, 2014; Young et al., 2012). Meta-analyses have found significant measurable educational benefits that favor digital games over other modes of instruction, particularly when including augmented features (e.g., Clark et al., 2016). However, scholars have found that educational and "serious" games often have limitations that inhibit widespread adoption, such as antiquated design features or limited game mechanics (e.g, simulations or puzzles) (Connelly et al., 2012), or they remain narrowly focused on a single health or educational intervention (Durkin et al., 2015). Another area particularly important for educational gaming audiences is how game mechanics involving teamwork, socialization and objectives influence relationships between distributed learning and performance of that knowledge. Collaborative gaming continues to show significant measurable benefits for learning, though the contribution of competitive elements remains contested (Clark et al., 2016). On the other hand, commercial games, though well designed for learning goals (Gee, 2007), are often more centered on entertainment, running counter to schools' aims for individual play or a brief expository approach to learning (Young et al., 2012).

However, the learning ecologies within the unique learner-initiated information spaces offered through esports need further examination. Specifically, there have been few educational research endeavors studying the learning contexts of high stakes

competitive matches in Multiplayer Online Battle Arenas (MOBAs), like *League of Legends* (e.g., Kim et al., 2015). While there have been a number of notable studies on learning-relevant practices in Massively Multiplayer Online Games, most have focused on collaborative role-playing genres (e.g., Steinkuehler and Duncan, 2008). Moreover, though several studies have assessed integrating games and simulations across multiple educational and informal contexts (NRC, 2011), the learning models explored have been comparatively lower stakes than esports.

The scope of our research is especially important when we consider the historic inequities in gaming, across gender and race, particularly as colleges and high schools begin investing in esports in various ways. Over thirty years of research has documented the longstanding barriers women and girls have experienced in gaming (e.g., Cassell and Jenkins, 1998; Kafai, Heeter, Denner and Sun, 2008; Kafai, Richard and Tynes, 2016; Kiesler, Sproull and Eccles 1985), which affect equitable access to knowledge, community information and skill development in ways that would significantly impact their ability to engage in competitive play (e.g., Bertozzi, 2008; Richard, 2013; Richard, 2017). Over the past decade, researchers have found that these barriers intersect across race and ethnicity, and disproportionately affect minoritized players of color (e.g., Richard and Gray, 2018). More recently, high schools have started supporting esports competitions as a way to encourage STEM learning (e.g., Steinkhueler, 2018), and some colleges and universities have integrated esports formally as part of collegiate athletics through scholarships and dedicated facilities (Kauweloa and Winter, 2016). Other higher education institutions have allowed students to compete officially through informal channels, such as student organizations, with the school's support (Kauweloa and Winter, 2016; Wingfield, 2014), which is the case of the one under investigation herein. Given gaming's historic relationship to STEM pipelines (Cassell and Jenkins, 1998; Kiesler, Sproull and Eccles 1985; Richard, 2017) and its rising significance in collegiate pathways, it is increasingly

important to understand the cognitive, social, and collaborative dimensions that underscore esports play broadly and within collegiate competitions.

In this paper, we explore the ways in which players invest in learning-relevant practices and cognitive processes through esports and livestreaming. We explore a detailed case study of one team's progression throughout a collegiate tournament as evidence of micro-level shifts in perceptual learning through simultaneously collaborative and competitive gameplay. This particular team was chosen because the players had both strong and weak ties – due to last-minute changes in team composition – and different levels of expertise (though all were sufficiently proficient for competition). To this end, we explore the following research questions: How do players engage in learning and collaboration during esports competitions? How are these interactions influenced by individual and collaborative expertise and actions? How are these interactions influenced by learning-relevant practices?

BACKGROUND

Many competitive sports offer possibilities for team play and collaborative learning. The importance of selecting top players to create high-performing teams is well established in both collegiate athletics and professional sports. In traditional sports such as football and basketball, a franchise will draft players that are expected to benefit the team. In team-based electronic sports (esports), and, in particular, Multiplayer Online Battle Arena-type games (MOBAs) like *League of Legends* ("*League*"), there are two synergistic dynamics in this respect: the players themselves and their in-game draft picks. Thus, a player's past performance is a crucial element, but in-game character drafting, which involves consideration of system patches and updates that happen frequently, also affects performance characteristics. At the time of the study (April 2016), there were 130 different "Champions" (characters); each brings something different to the game, such

as abilities and characteristics that can change weekly, based on upgrades ("buffs") or downgrades ("nerfs") delivered through developer patches. Thus, while a player may be proficient with one character, his/her ability to keep up with the "metagame," or even learn different characters within a class, may be just as significant marker of his/her abilities.

Metagaming has deep roots in game studies and has more recently been used by designers to integrate gamified principles into commercial products and websites in order to drive engagement and incentivize participation through rewards and feedback systems (Kim, 2010). However, players have been creating their own metagame experiences for years, such as through "affinity spaces" (e.g., Gee, 2005; Squire, 2011; Steinkuehler, Squire and Barab, 2012) that have a wealth of fan-derived knowledge and content. More recently, the term has been adopted by the gaming community to refer to external resources, experiences and information that contribute to distributed, community-centered knowledge around the game (Garfield, 2010). Donaldson (2017) broadened this definition by proposing two expertise-related elements of metagaming: mechanical expertise and metagame expertise. According to Donaldson, a player has to attain a certain level of mechanical expertise within a game before they can start to build up a baseline for metagame expertise, or the "awareness of and ability to negotiate the game around the game" (2017, p. 440). Herein, we integrate this contemporary definition, which is akin to many of the practices and activities that foster situated learning and legitimate peripheral participation in communities of practice (Lave and Wenger, 1991).

Matches themselves represent a moment in time when mastery can be tested and, therefore, an interesting case for investigating how learning occurs when effortful practice can be analyzed. Before the match begins, teammates collaboratively decide on their best strategy. This includes (a) choosing champions that each individual player can play effectively, (b) negotiating which champions work together based on individual skills and team-

balancing needs, and (c) banning other champions, which would strengthen the opposing team. This has been described as the proficiency-congruency dilemma, a framework developed from research on organizational behavior and team dynamics (Bardzell et al., 2008; Bradley et al., 2013; Cohen and Bailey, 1997; Kim et al., 2016). To effectively compete in popular MOBAs, a team must make collaborative decisions before, during and even after a match, since most games are played as the best of several matches. Team members speak candidly to one another and gain expertise by addressing this dilemma through consistent gameplaying and by reading forums, keeping up with and evaluating patch notes, and watching professionals. In other words, more experienced players have gained an understanding of the intricacies involved in play, such as choosing characters based on anticipated or actual complexities that can occur.

Research shows (Kim et al., 2016) that teams that are better able to prioritize team proficiency (i.e., expertise with the character roles needed on the team) instead of individual proficiency (i.e., individual expertise with certain characters) perform better, as do teams that have good congruency, or group cohesion. Congruency is achieved by matching the best roles needed by the team and with the characters available for the team. Unsurprisingly, players with more expertise are better able to have both high individual proficiency and team congruency because they have developed "superior mental models of how in-game roles complement each other [which] novices have to develop . . . over time" (Kim et al., 2016, p. 4359). Research shows that when teams balance individual and distributed roles and skills, they will outperform teams that lack this cohesion (Kim et al., 2016; Goodman and Shah, 1992; Huckman et al., 2008). However, unfamiliar teams and blended teams with expert and novice players can partially bridge the gap through discussion.

The proficiency-congruency dilemma extends upon deliberate practice (e.g., Ericsson, Krampe and Tesch-Römer, 1993), which describes how people become experts in their chosen fields

through extensive and effortful repetition and training. Specifically, studies of athletes find that, unlike their less experienced counterparts, experts are more likely to engage in targeted effortful practice on their weaker skills rather than their stronger skills, which results in measurably significant improvement that holds over time (Coughlan et al., 2014). In other words, the more one engages in deliberate practice, the better one will comprehend and predict the intricacies involved in play, such as choosing characters based on anticipated or actual complexities that can occur. To further this argument, players' evolving expertise is coupled with developing and refining heuristic techniques around champion interactions, mechanical play, and larger metagame team strategies, which are dependent upon both consistent practice and community engagement.

In the research literature, little is known about collegiate competitive game-based learning, which can be simultaneously informal and formal. One area in the growing body of research on collegiate esports explores how formal or informal university support affects players' perceptions of esports as work or play (Kauweloa and Winter, 2016); findings illustrate support for Stebbins' (2007) construction of "serious leisure," which describes activities that distinguish themselves from casual activities, in that they have social, professional and identity benefits, and in which they require effort and skill development. Kauweloa and Winter's (2016) analysis of a formal, structured, scholarship-based university model versus an informal, student-organization university model found that both could enhance players' self-image, self-expression and self-actualization, but that players in the formal model demonstrated slightly stronger confidence in their identities as competitive gamers.

In many ways, informal collegiate esports organizations work like communities of practice (Lave and Wenger, 1991), and the communities of practice framework has increasingly been utilized to document game-based learning through communities (e.g., Kow and Young, 2013; Richard and Gray, 2018; Shaffer et al., 2005).

Jean Lave and Etienne Wenger (1991) originally coined the term "communities of practice" (CoP) to refer to the "legitimate peripheral participation" that occurs in hobby and practitioner communities. The CoP framework integrates situated learning, which is meaning-making produced with others in social and contextual practice. For example, members of the esports student organization under investigation gathered at weekly meetings to discuss patch notes and strategies. More proficient players offered advice and training to newer players. They also engaged with media platforms such as *Discord* to facilitate team chats and *Facebook* to share ideas surrounding gameplay. Furthermore, they utilized livestreaming, primarily through *Twitch.tv*, to broadcast their team play and reflect on it, as well as learn from other players' strategies.

Four team-level interpersonal beliefs can affect learning behavior: psychological safety, cohesion, interdependence and group potency. Psychological safety indicates a collective belief that the team is safe for interpersonal risk taking (Edmondson, 1999). Task interdependence refers to interconnections between sub-tasks that contribute to overall group performance (van der Vegt, Emans and van de Vliert, 1998). Since sub-tasks are dependent on each other, task interdependence can lead to open and effective communication between team members. Outcome interdependence refers to team members' "personal benefits and costs" being tied to "successful goal attainment" by other members of the group (van der Vegt et al., 1998, p. 130), similar to team and individual proficiency and congruency. Cohesion has two dimensions: task cohesion and social cohesion. Task cohesion, which leads to better learning and performance behavior, refers to the collective effort by all members working collaboratively towards completing an enjoyable and motivating task, whereas social cohesion reflects and is dependent upon the emotional bonds between team members. Group potency describes the shared belief in the group's effectiveness, which has been shown to increase performance and satisfaction (Miyake and Kirschner, 2014). Miyake and Kirschner (2014) suggested that collaboration requires

not only construction and co-construction of meaning, but also constructive conflict to create mutually shared cognition. For example, criticism is often voiced by less experienced individuals, but prompts better strategies and explanations by more knowledgeable ones.

Players can also engage in reflective processes of comparison and improvement. There are two primary forms of reflection: abstracted replay, which occurs when individuals look back at their own performance (Collins and Brown, 1988) and perceptual learning (Bransford et al., 1989), in which learners hone a specific set of skills. This form of cognitive apprenticeship typically happens through various forms of replay and contemplation, and gives learners greater flexibility in adapting and transferring their skills to different contexts and domains. Of particular interest to our investigation are learning theories that highlight the ways that knowledge occurs in, or is applicable to, real life, thus suggesting applicability for near and far transfer to other learning or performance contexts. Cognitive apprenticeship (Collins, Brown and Newman, 1989), for example, is derived from models of traditional apprenticeship and sports, and emphasizes cognitive rather than physical skills. Through cognitive apprenticeship, one initially begins learning complex physical skills through imitation, such as when a coach or expert demonstrates how to perform an action. However, the theory of cognitive apprenticeship further suggests that there are three major forms of reflection that can significantly affect learning, for which multimedia technologies provide unique advantages: replay, when a coach videotapes a player's actions and compares them to those of experts; abstracted replay, when a coach focuses on specific critical points of action; and spatial reification, which happens when several critical points of action are mapped out over time so a player can see his/her learning progression. Perceptual learning, on the other hand, is thought to happen over time through different reflective processes that help learners to flexibly adapt to complex challenges (Bransford et al., 1989). Over time, the complex interplay between these forms of replay and learning allow for mastery or expertise

development to occur. While these developments happen at an individual level, they also occur at a group or team-level through consistent practice and collaborative play. Negotiation between differing or "blended" expertise is fundamental in establishing powerful moments of team-based reflection.

Summary of Learning Theories

In summary, since we know that higher skilled players and teams are better able to navigate the proficiency-congruency dilemma (or deliberate practice), we used this framework to understand both decision-making and domain mastery. Due to the mixed expertise of the team under investigation, we expected to see the following: (1) interactions based on blended expertise, which should lead to more discussion and negotiation; (2) instances of reflection within and between matches; (3) heightened task interdependence leading to more open communication; and (4) micro-level shifts in effective individual and collective performance. As this was a newly formed team in a tournament (or high-stakes performance domain), we also expected to see more outcome interdependence, which would improve over time. Due to the event being high-stakes, we anticipated that the team would exhibit high task cohesion. Finally, we further expected to find more risk-taking if the team members felt psychologically safe, and greater group potency (or self-efficacy) as their performance and team dynamics improved, which would lead to perseverance against the odds.

METHODS

Data Collection and Analysis

Data sources included participant observation, both during physical club meetings and tournaments, and during online streams of practices on *Twitch.tv*. We focus herein on a subset of data collected during a collegiate esports tournament. The following analysis is a case study of a match between "Team

B" and "Top Big East" in the *2016 Home Institution Collegiate Esports Tournament* (we have given pseudonyms for the sake of confidentiality). We video recorded the interactions of Team B during the tournament, and two members of the research team analyzed the data for themes, utilizing constant comparison analysis techniques (Strauss and Corbin, 1997). Specifically, two coders (authors McKinley and Ashley), after being trained by author Richard, analyzed similar parts of a subset of the data (two games) and transcription using open coding techniques, followed by discussion and negotiation of codes with all three authors. After the axial codes were negotiated, all of the data was recoded with the axial codes. We analyzed a subset of the data (20 minutes of the three hours of video), finding that most codes were in agreement (Cohen's Kappa = 0.67; 83% agreement). All team members then reviewed the video data with the axial codes, followed by analytic memo writing. Themes were derived from the collective fine-grained analysis of the data, codes and analytic memos over several team meetings. Findings were also checked by other researchers and *League* players (n=3), who sat in during some of the group meetings and verified thematic connections.

Participants and Setting

One team, made up of five participants (herein, "Team B"), was observed during a major collegiate tournament hosted by their home institution. A total of four teams from the home institution competed, along with four teams from universities across the United States. This particular institution did not have official support for esports, and instead maintained their collegiate esports status through a student-run organization, thus illustrative of an informal university model, according to Kauweloa and Winter (2016). Other competing teams were from institutions with both informal and formal scholarship-based university models.

As college students, team members sometimes had to skip practice or withdraw from teams in order to deal with other pressing matters such as schoolwork. When Team B entered the LAN, the

members were not well practiced as a team. While the university utilized an informal model, the esports student organization maintained a "Division 1" (herein, D1) team, a recognized top team that officially represents the university at national esports tournaments and events. At the time, the student organization independently organized esports representation for the university through several national collegiate esports networks, many of which required one official team. The D1 consisted of highly ranked competitive players in the organization who had competed for their placement. The D1 team also maintained a manager, coach and two analysts, who were all unpaid club members, and attended weekly coaching sessions where they examined competing teams' strategies, evaluated the D1 team's performance at the individual and group level, and focused on areas for continued development. Thus, in many ways, the informal model mirrored the formal model, without scholarship support or facilities.

However, the student organization also supported other teams, characterized as "Division 2" teams, that could compete in certain national tournaments, when multiple teams were allowed, or in university-hosted tournaments. Team B was a D2 team without the tailored support dedicated to the D1 team. Team B was largely considered to be the underdog of the tournament because it had formed only shortly beforehand due to another team disbanding. In particular, one team member (given the pseudonym "C5" herein) served as one of the organization's leaders for the *League* division, but was not originally on any of the competing teams, though he was widely regarded as knowledgeable and capable of filling the empty position. It should be noted that, unlike the other Team B players, who were at the diamond level (i.e., top 2% of players nationally), C5 was at the platinum level (i.e., top 8–9%); thus, this player was regarded as highly competitive, but perhaps in a lower tier than most of the players in the tournament. We chose to focus on Team B because the members were blended in expertise and, perhaps as a result, were the most vocal during the tournament in describing their interactions, thus providing a salient case study of

the kind of learning-relevant practices observed during collegiate esports play.

The tournament was hosted on campus at the home institution. During play, competing teams were separated into meeting rooms with a referee assigned to each room (see Fig 1). Spectators watched the entirety of the tournament from an auditorium in which the gameplay was projected on a large viewing screen as it was livestreamed on *Twitch.tv*, with commentary provided by broadcasters—many of them students honing their sportscasting skills at the same time. We focus here on the interactions in the room where Team B played, and where we set up a camera and microphone. While these cameras were checked regularly between matches, the researchers were not in the room while the competitive matches were played, in order to limit interference. We labeled each participant from C1 to C5 based on their distance from the camera (see Fig 1, bottom). Each players' seasonal ranking can be found in Table 1.

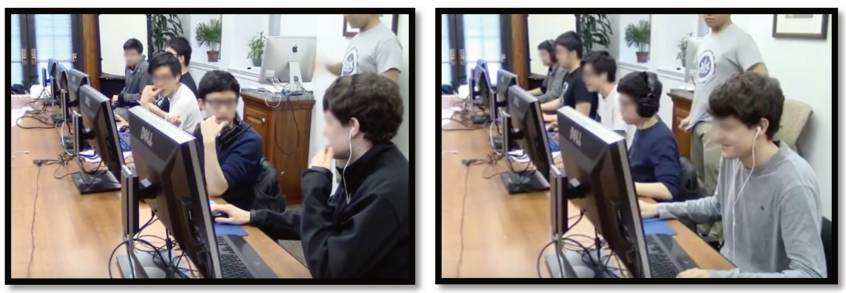

Figure 1: Left: Picks and Bans phase; Right: In game. Study Participants (closest to furthest): C1 – Tank (Top Laner); C2 – Jungler; C3 – Mid Laner; C4 – Attack-Damage Carry (ADC); C5 – Support / Team Captain. Referee stands behind them.

Position (Player)	Season Ranking
Top Laner (C1)	Diamond
Jungler (C2)	Inferred at Platinum or Diamond (Unable to locate)
Mid Laner (C3)	Diamond
ADC (C4)	Diamond
Support (C5)	Platinum

Tiers from the lowest to highest (percentage of total players in each tier in parentheses): Unranked (N/A); Bronze (25.40%); Silver (39.15%); Gold (25.05%); Platinum (8.41%); Diamond (1.95%); Master (0.03%); Challenger (0.02%).

Table 1: Participants' solo queue season ranking during the tournament (April 2016; Season 6).

Game Setting

In *League of Legends*, two teams of five champions battle it out. The goal of the game is to march to the other team's base with your fellow teammates and minions to destroy the enemy's Nexus (see mini map in Figure 2). The players control a character known as a champion, of which there were 130 as of April 2016 when the data was collected. Each champion assumes a different role: Marksmen/Attack-Damage Carry (ADC), Mid Laner, Tank, Jungler and Support (see Table 2).

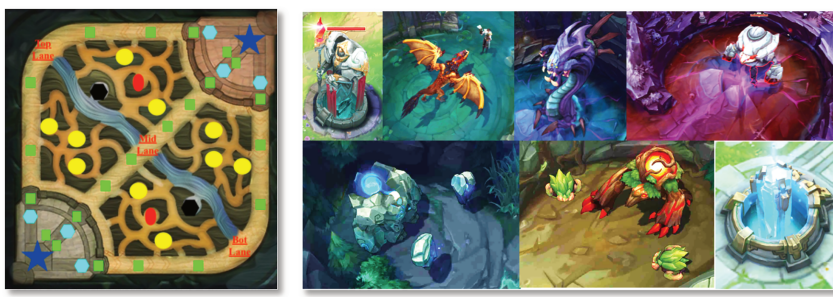

Figure 2: Left: Mini Map of Summoner's Rift (Nexus: Blue Stars; Turrets: Green Squares; Jungle Camps: Yellow Ovals; Dragon/Baron: Black Hexagon; Inhibitor: Blue Hexagon). Right: Objectives, Left to Right: (Top) Tower, Dragon, Baron, Rift Herald, (Bottom) Blue Buff (Dark Blue oval), Red Buff (Red Oval), Inhibitor.

Position	Position Description	Example Champions	Category
Tank **Top Lane**	This is typically a solo lane filled with characters who are specialized in very high health, armor and/or resistance to magic.	Malphite, Trundle, Rammus, Ekko, Nautilus, Poppy, Graves, Vladimir	Tank, Bruiser
Mid Lane	This splits the battlefield in half. It is filled with champions, who use their powers, or Assassins. It has a high impact early on and mid-game.	Zed, Vel'koz, Ekko, Kassadin, Annie, Ahri, Azir, Talon, Vladimir	Mage, AP Carry, Assassin
Jungle	This takes up most space on the map. Champions in the jungle are very mobile and constantly look for easy ambushes.	Graves, Hecarim, Trundle, Kha'Zix, Kindred, Vi	Jungler (almost any role)
Attack-Damage Carry (ADC) **Bottom Lane**	Comprising one half of the bottom lane, the ADC is responsible for killing minions (farm), dominating the enemy ADC, and supporting the building of powerful late-game items.	Graves, Ezreal, Corki, Ashe, Vayne, Tristana, Jinx, Twitch	Marksman, Assassin, ADC
Support **Bottom Lane**	Support keeps the team alive and frustrates the opposition. This is accomplished through slows, stuns, heals and shields.	Braum, Malphite, Morgana, Nautilus, Brand, Sona, Soraka	Tank, Support, Mage

Table 2: Champion Roles and Mechanics in League.

As one can imagine, there is a complex interplay between the champion roles, and certain characters may even swap roles through the course of a match. The mechanics of play are also quite intricate. Each champion has four skills, which are mapped in a similar way to the Q-W-E-R keys on the keyboard. Each skill has a different effect, and the "R" skill (or "Ultimate" ability), when used effectively, can transform the game.

Once a player is in control of a champion, she/he must plan out a build path for itemization. *League*, at the time of this study, had about 200 separate items to choose from in any one match. This helps illustrate the complexity of decision-making that any player with a single champion alone would need to make in order to be successful. However, items are needed, not only to maximize a character's effectiveness, but also to balance the team's choices and counter the enemy team's build path. Finally, due to the nature of strategic team play and coordination, communication is the

backbone of successful game outcomes. *League* facilitates communication via an in-game ping system through which players can signal information to their teammates with the click of a mouse, and chat via a window when more detailed messaging is needed. This is further enhanced by utilizing popular team communication platforms such as *Discord*, which can be used for both text and voice chat from a distance or while in the same room.

Preparing for a Match

Before the match is played, both teams must draft their champions. In *League* Tournament Mode, there are three phases of drafting: ban phase, pick phase and trade phase. Each team receives three bans and has thirty seconds to decide which champion to target, proceeding in an alternating fashion. In the pick phase, a team has sixty seconds to choose a champion. The order is A/BB/AA/BB/AA/B, where A represents Team 1's pick and B represents Team 2's pick. Once a five-champion roster is selected, each team is given sixty seconds to trade champions within their team. This enables changes based on both individual abilities and team balancing, as well as advanced strategizing around the champion pick order to counter potential enemy picks. Once in game, players are able to view other players' profiles for information such as their rank and their most-played champions. Profiles can provide immediate feedback for the purpose of last-minute strategizing and final preparations.

FINDINGS

In our analysis, we focus on Team B's progression from game 1 through game 3 against a more favored team in the tournament. The tournament matches consisted of the best of three games. During this match, Team B won games 1 and 3, and progressed forward in the tournament, which they eventually won against a different favored and significantly higher ranked team from an institution with a formal, scholarship-based university model. We

begin by focusing on changes in their drafting strategies over time, followed by interactions across the games during the match.

Drafting Strategy Progressions

Team B's first significant interaction begins before the drafting phase of game 1, when the team is still setting up their equipment. While this is happening, the team begins to discuss their pick and ban strategies. As this conversation progresses, the Jungler (C2) asks if anyone knows what champions their opponents play. This prompts the Top Laner (C1) to investigate the opponents' player profiles and point out a champion that one of them favors. The Jungler (C2) encourages them to look at the opposing team's match history in the hope that it will provide critical strategic information. C1 points out another champion that the other team will probably pick, and C2 quickly questions whether the character should be banned.

> **C1**: One of them plays Malphite [*viewing opposing player's Summoner profile*].
> **C2**: Yeah, look at their history.
> **C1**: He plays Aurelion.
> **C2**: Should we ban Aurelion, just to troll him?

In particular, this exchange reveals important aspects of the proficiency-congruency dilemma. For example, if the team knows what their opponents are comfortable with, denying the option to play as those champions may reduce their effectiveness. By knowing who their opponents are likely to play, the team can begin crafting strategies for countering those particular champions.

Through the first game of the match, the players were observed refining their strategies and the synergies amongst the team. In game 2, we saw two new developments during drafting. The first was the confidence Team B members got from their game 1 win. C3 stated that he wanted to play a direct counter match-up. C4 questioned this by asking if C3 had something to prove. C1

suggested that C3 should play the champion that his opponent had just played if he truly wanted to make a point. C1 and C3 briefly discussed what this match-up would be, and as C1 reviewed this strategy, he realized that it might work:

> **C3**: I feel like playing a direct counter matchup just cause . . . I don't know.
>
> **C4**: Why, just to prove a point?
>
> **C3**: Yeaahh
>
> **C1**: You want to play, umm uh, whoever they played. I don't remember.
>
> **C3**: Ari
>
> **C1**: Yeah, against an Azir.
>
> **C3**: Maybe
>
> **C1**: That actually sounds like it would be pretty good for Ari's . . . charm until he ults.

A common strategy is drafting for team synergy, where all five champions have a good balance between them (congruency). Otherwise, a player can play toward his/her individual expertise (proficiency). In this case, we saw C3 wanting to show his skill and to challenge his lane opponent personally by playing a direct counter character. C1's suggestion would make a bigger point if C1 played the same champion his lane opponent had just played and won the lane in order to demonstrate his expertise over his opponent.

The second development in game 2 was that both teams could integrate information learned from game 1 into their drafting strategy. Their strategies towards picks and bans changed based on what worked well in the previous game and what did not.

During the drafting phase, we saw Team B react to Team Big East's banning decisions. For instance, in game 1, Team Big East banned the champion Poppy. This could have been done because they felt Team B had a strong Poppy player, or that she might have been overpowered in the current meta. However, when Team Big East chose not to ban her in the second game, it raised strategic questions for Team B, such as whether they wanted to use her themselves.

> **C1**: Okay, Kindred bans.
>
> **C2**: That makes sense.
>
> **C1**: They didn't ban Poppy like they did last time. I don't know if any of them play Poppy, or we could just go for . . . what do you think?
>
> **C5**: I think we should ban Poppy, like cause like you guys don't seem to be afraid of anybody, so just hover Poppy.
>
> **C2**: Yeah
>
> **C1**: Okay so ban her?
>
> **C5**: Yeah like who else are we going to ban?
>
> **C4**: I mean, it's bad if we ban more, honestly, cause we're purple side, cause like, if we leave one pick open, we have less to choose from.
>
> **C4**: We might get Nautilus again, who knows?
>
> **C1**: They might go for the CC again.

In game 1, the team made more predictions of what the opposing team would play based on their Summoner profile, whereas, by game 2 and certainly in game 3, there was a more in-depth discussion surrounding the new knowledge they had over the

previously played games. For example, as we see below, during game 3's picks and bans phase, Team B began debating a choice for the ADC on their team during their sixty-second window. They reflected on the previous game, focusing on how their team composition seemed to counter the enemy's when proper execution techniques were utilized. C1 mentioned that they tried to "peel" (i.e., protect their ADC from) the enemy, Morgana ("Morg"), but alluded to the strategy being unsuccessful in the prior game (game 2). Finally, in order to pick the proper ADC, Team B needed to determine who the enemy Top Laner/Tank was likely to pick and set up an effective counter-ban.

C2: Is there an ADC that can kill tanks really well? Like Corki?

C3: You play Vayne, just play Vayne.

C4: Vayne's not that good at (. . .)

C2: Corki he's . . .

C1: There's Lucien, Lucien is pretty broken.

C2: Corki with BotRK.

C3: They were doing the double AD comp last game, like, where do they go,

like . . .

C3: They would do all the initiating, we just had to pick em like Malz would peel Morg.

C1: Idk I tried, like . . . idk.

C2: Did we ban Poppy?

C1: Yeah because, well, I don't know if their Top Laner plays Poppy . . . . I don't see him playing it.

> **C4**: Yeah, let's just see what he plays first. He picked Trundle last game, right?
>
> **C1**: Umm, he played Trundle, then Malphite.
>
> **C1**: We aren't planning on banning Malphite, are we?

In this exchange, we see fundamental changes from game 1 to game 3. For example, during the champion selection phase, the team presented more confidence in their decision-making by applying knowledge from prior games to make informed predictions of the enemy's picks. In particular, we start to see elements of refinement in their group potency (i.e., collective self-efficacy), which, in turn, leads to modifications in their strategies for picks and bans. In many ways, group potency highly influences task cohesion, which occurs when learners collaboratively work toward completing a task, and is connected to better learning and performance. Thus, these improvements in performance could be considered a benefit of their effective and distributed collaborative learning. We also see specific instances of reflection, when team members discuss the previous team composition as well as the successes and failures of countering the enemy's strategy.

From Individual to Collaborative Reflection and Perceptual Learning

Dedicated players, particularly those competing formally or informally, spend several hours each week attempting to improve their gameplay, either through formal team practice or analyzing past matches on *Twitch.tv* or *YouTube*. In other words, they engage in reflection techniques such as replay or abstracted replay in order to compare their strategies to those of experts. When game 1 ended, the players were allowed to use their web browser. Realizing that the game was being broadcast on *Twitch.tv*, the players quickly tuned in to the livestream. The stream was showing footage (on a built-in delay to prevent cheating) of one of the bigger team-fights during the match. C4 (who died during the fight) pointed out the instance in which he attempted to heal his

character, but for whatever reason was not able to. He knew the moment in which he needed to heal, but was unable to complete the action, blaming technical issues.

> **C2**: Are they casting?
>
> **C4**: Oh, look right there . . . . *[points to screen]* I couldn't heal! The f—! Literally my screen froze!

By honing in specifically on one action, we could argue that he was engaging in abstracted replay. In this particular case, he did so individually; thus, while he may have learned from the exchange to improve his individual performance (i.e., individual proficiency), his team was not integrated into this process. By game 3, however, the team engaged in a collective review of a past game where there were errors in team-fight execution:

> **C3**: I should have went Kha'Zix.
> **C4**: Dude Malphite was going on you then.
> **C3**: No. I was watching for the ult. I was back far enough. Ezreal just ulted me, so I'd say yes.
> **C4**: *[Laughs and shakes head]*
> **C3**: The laser worked pretty good.
> **C4**: *[Laughs]*
> **C3**: The same thing.
> **C5**: *[Claps]*

In the exchange, we see that C3 was questioning his champion pick in the previous game, saying he should have gone with Kha'Zix, based on the gameplay. Yet C4 did not agree because the enemy tank, Malphite, was focused on C3 for the game, and Malphite would have countered Kha'Zix in that match-up. Paying attention to the screen where he was watching the replay of their last game, C3 explained the rationale for his actions: "No, I was watching for the ult. I was back far enough. Ezreal just ulted me so I'd say yes." By moving from individual abstracted replay to team abstracted replay, there is evidence they were engaging in a holistic review

that capitalized on their shared expertise. As a result, they could collaboratively correct their shared schema through discussion, in order to heighten their team proficiency and congruency. In many ways, the team's heightened congruency can be argued as a byproduct of subtle yet distributed shifts in perceptual learning happening through reflection and discussion.

Risk Taking and Psychological Safety

Throughout the following exchange during game 3, there were many instances elicited where members were able to ask questions, test strategies, and enact risky maneuvers for the overall benefit of the team. For example, the exchange below shows the team members communicating their plans to push out their lanes to take the next tower. While this was happening, the team got vision on the enemy, Hecarim, and the Mid Laner (C3) attempted to destroy him. C3 ultimately took a risk in attacking Hecarim, but ended up failing because he was stunned and exhausted (i.e., his damage output was reduced). Killing Hecarim would have provided the team with more time to be aggressive and push out their lanes more safely, a key strategy for successful game play.

C3: I think we're fine.

C5: We have vision.

C4: Switch, switch

C2: Alright, he's going to try and come in.

C4: Just shove in, shove in.

C3: Shove down work mid.

C5: Yeah, we're shoving.

C2: I'm going to go get the, uhh . . .

C2: Hecarim's at blue.

C4: You can go warpath if you want.

C5: Hecarim's right there, sitting gromp.

C2: You gonna go in?

C3: One second

C2: You gotta go in and kill him.

C3: Omg

C2: I thought you had him, dude.

C3: I got like, stunned again.

C3: Yeah, I was exhausted so . . .

C2: Oh, you were exhausted.

C3: Yeah

C2: Oh ok, that's why.

C5: Let's just stay there, hold blue.

As seen above, not all risks pay off. The Mid Laner (C3) failed to capitalize on destroying Hecarim. Individual players often make risky decisions without team consensus. However, in this case, we see that C3 was pressured to go against Hecarim by C2, perhaps at a time where he was not entirely ready for the exchange. Teams benefit when players can take risks, fail and still be supported by their team. In the exchange below, which occurred after the completion of the game, team members started poking fun at the Mid Laner (C3) for having the most deaths (i.e., "feeding" the opposing team).

C3: Oh, my god.
C2: Dude, why did our Zed feed guys?
C5: Way too much feeding, bro.
C4: [*Looks at C3's screen and laughs*]
C4: Nice feed! Four times! That's 80% of our deaths [*Laughing*].
C3: [*Laughs*]
C3: Oh, my goddddd, yeah 80%, oh, my god.
C2: Omg, Maokai, did so much damage! Holy crap.
C5: Alright, good win. That's what I like to see!

An assassin champion, like Zed, is inherently risky to play due to its ability to dive into the backline of an enemy team. This can strand a player from his/her own teammates, but it also has the ideal outcome of eliminating one or more high-threat targets. Here we see the majority of the team poking fun at C3, the Mid Laner, who had four deaths in this match. Due to how well the other players performed, four deaths equaled 80% of the total for the team. However, this good-natured teasing acts as a form of implicit communication and reflection that helped highlight the enjoyment of the task of gameplay in competition.

C5: That one Zed snipe that you had where you picked off the Ezreal,that's what we needed. It helped us a lot.
[C3 and C4 laughing]
C2: This one here?
C5: Yeah, because Hecarim panicked and he went in . . .
C4: Wait, wait – I was back in the bush with the Brand where he flash-Q'd me!
C4: Then the Nautilus TP behind.
C2: The second they don't have a Maokai, it's safe.

In order to ensure that team morale and individual player worth were fostered, the Support (C5) pointed to a specific instance in a team-fight toward the end of the match. In this fight, C3 was able

to perform his role effectively by eliminating the opposite team's ADC, Ezreal. In doing so, C3 was able to swing the encounter in Team B's favor and allow for a clean fight that led to winning the match. This is important to mention here because, while the teasing was amicable, C5 felt that it was necessary to show the rest of the players that C3's contribution and performance were integral to the team's success. In fact, C5 served as the team's support champion, both figuratively and literally, throughout the tournament. In other words, by helping refocus the team on their individual and collective strengths and by reinforcing positive exchanges, C5 helped ensure psychological safety, which, in turn, reinforced both their group potency and risk taking.

Group Potency and Self-Efficacy

In a high-stakes, collaborative performance, the belief that the group is powerful and can adapt to problems encountered is vastly important to its success. While the team elicited several instances of group potency, one of the more powerful instances can be found right before game 3 began:

> **C2**: What if it's a Nautilus Jungle?
>
> **C3**: Nah, it will be Hecarim.
>
> **C1**: I think it's going to be Nautilus support again.
>
> **C2**: We're doing Zed?
>
> **C3**: Yeah, I feel like Zed is good. 'cause I feel like they can't initiate, if I can dive.
>
> **C1**: I have confidence in you, you can get onto someone important.
>
> **C2**: Plus, we need an Assassin.
>
> **C3**: Yeah, I can pop to the backline, so…

> **C2**: So, Zed will kill the backline and me and (. . .) will just kite out their . . .
>
> **C1**: Peel the Hecarim off the Corki and everything.
>
> **C2**: They got Morgana support, that's fine, no big deal.

This exchange occurred in the pick and ban phase, prior to the beginning of the match. The conversation above was built upon the previous win in game 1 and loss in game 2. Here, one can see the team members building confidence in one another around their individual skills with champions, as well as their overall need as a team to have a champion that can eliminate important enemy champions. Beyond the importance of C3's pick of an Assassin champion, it can be observed that they are confident in their ability to "kite out" the enemy and "peel" for their ADC, Corki. These are integral mechanics to keep their most important champions alive to influence team fights and ultimately come out on top in exchanges.

Individual and Collaborative Performance and Task Interdependence

For the most part, the interdependence on task and outcomes occurred at nearly every point in the game when the team members were coordinating an attack on a major objective. As a reminder, outcome interdependence is the connection between personal benefits and costs tied to collective goal attainment, and task interdependence acknowledges interconnections between tasks that contribute to group performance, which leads to open and effective communication. Objectives in *League* include Towers, Dragon, Baron, Rift Herald, Blue Buff, Red Buff, Inhibitor or the enemy ADC (see Figure 2 in the preceding section). These all have very significant outcomes for an individual champion and for the team as a whole when they are secured efficiently. Usually, this consists of one or two champions working together directly to secure the objective while the rest of the team holds back the enemy, provides vision, applies pressure to other areas of

the map, or provides healing/shields for the champions capturing the objective.

Throughout a match, players constantly need to strategize. They must think about farming and gaining experience, their individual item progression, and timers for objectives (Dragon, Baron, Buffs). Players must not only keep in mind their abilities and cooldowns, but also remember when the enemy's abilities are on cooldown, in order to coordinate an attack. The following excerpt from game 1 is a standard example of how players communicate with one another in order to coordinate:

> **C1:** Trundle is missing. I have TP and my Ult is up in forty.
>
> **C2**: Want to do rift, so we can push?
>
> **C4**: I'm going mid. You can do it. I'll get bot – there is a huge wave.

In the first line, we have C1 stating that the enemy champion in his lane was missing, that he had a teleport ability ready (which would allow him to teleport to a friendly location on the map), and that his ultimate ability would be ready in forty seconds. C2 suggested that the team's next action should be to take the Rift Herald, a powerful neutral monster, which, if slain, would provide a game-changing "buff" (e.g., enhancement) to the individual who secured it, and allow them to push down the lanes more easily. C4 made a calculated decision not to help his team take the objective. Instead, by going mid and then rotating bottom, he accomplished three things: (1) he continued to gather farm and experience that he would have missed out on attempting to take the Herald; (2) he kept the lanes pushed out, which not only gave his teammates a bigger cushion and provided more vision, but also made it more difficult for the enemy team to take objectives; and (3) since C4 was visible in the lane, the enemy team was less likely to think they were attempting to take a major objective.

In game 3, we observed an exchange across the team about securing a very important objective, Dragon. They were negotiating their positioning strategy for repelling the enemy team, and the need to establish vision and clear out the enemy vision wards, while constantly keeping track of the enemy Jungler, Hecarim. This was important because the Dragon is a neutral monster that can be secured with a summoner spell, such as Smite, which does a very large amount of "true damage" to a monster or minion. One strategy that is commonly used is "stealing" the dragon, where an enemy Jungler waits until the precise moment that Smite would kill the monster, and then sacrifices themselves to secure it for their team. In other words, a sole Jungler would receive credit for an enemy team's kill after they had expended significant effort to defeat it. This almost always leads to the enemy team attacking and killing the Jungler, who has left him/herself alone and vulnerable, but the objective being secured is more important to the team's overall success. Finally, as mentioned earlier, interdependence was shown throughout the match. Below we see instances where effectively managing one's individual role, balanced with the needs of the team, led to rapid instances of communication around securing objectives. While the communication may seem shallow, it is deeply infused with knowledge about the game as well as an understanding of how fellow teammates would react to these tense situations.

> **C5**: They have a pink ward in here and Hecarim is in there.
> **C4**: Dragons in twenty, we should move soon, swap down, swap down.
> **C5**: Yeah, Nautilus is staying here.
> **C1**: I have TP
> **C1**: I don't know where Hecarim was, he tele'd last time I did.
> **C2:** Dragon is in five.
> **C1**: I'll TP too.
> **C4**: Yeah, there is pink ward right here.
> **C4**: Watch this right here.
> **C5**: Nautilus is trying to TP.

C1: Nautilus is walking down.
C4: Uhh, you're alone.
C1: Should I come?
C4: Yeah come, come, come, come. Brand's really low.

Task cohesion, as mentioned previously, refers to the degree to which team members work together to solve an interrelated task or problem. For a high-stakes tournament, individuals will self-select a team to compete against others. In particular, at the Diamond level in *League*, players are competing against the top 2% of players in the world. It is necessary that the team members work together efficiently in order to win. We found that, in general, task cohesion was prevalent throughout the interactions of team members. A specific instance can be found when the team coordinated a team fight in game 2:

C3: I don't think we can.
C4: . . . Ulti my shield.
C2 : I'm TPing.
C4: Team . . . TEAM!
C2: We can't do that.
C4: TEAM!
C3: We were walking top.
C4: Yeah, we were walking. top probably shouldn't of engaged there.
C1: Yeah my bad . . . . I just . . . I don't know what to do.
C3: It doesn't matter. We can win this. We just have to solve the game.
C4: Our late game is really good.
C2: Okay, let's just split push and . . .
C3: I don't think we can do it.
C2: They don't have an ADC, so let's just split push.
C5: That was a two for three, it wasn't the end of the world.

It is evident that task cohesion does not always correspond to successful outcomes. Here, the team coordinated an attack against the enemy, but many of the members were out of position. C3

mentioned that they were walking top, while C4 was stuck fighting at a disadvantage near the bottom lane. Part of becoming a more cohesive team is anticipating these types of occurrences, and communicating movement effectively. Though communication broke down here, C3 and C5 provided encouragement (e.g., "just [having] to solve the game"; "it wasn't the end of the world"). This communication pattern helped re-establish psychological safety and group potency, while also acting as an anchor for continued task cohesion toward the greater overall goal of winning the game.

DISCUSSION AND CONCLUSION

Throughout this case study of one team's progression through a critical tournament match, we saw strong evidence that players were engaged in meaningful aspects of individual and collaborative learning processes important to our considerations of learning ecologies around informal game-based learning, such as improved decision-making, knowledge mastery, and reflection. Over the course of the match, we saw evidence of micro-level progressions in domain mastery, as evidenced through the framework of the proficiency-congruency dilemma. As expected, we observed the players' high investment in gaming, along with strong task cohesion. As a newer team, we also witnessed more discussion and negotiation, but also engagement in reflection through replay and abstracted replay, which improved the team's task and outcome interdependence over only three games. Specifically, we argue that even within the short temporal scale of a weekend tournament, we saw evidence of perceptual learning, or the improvement of learning over time through the refinement of individual and collective skills, as demonstrated by the team members' flexibility in adapting to increasingly complex challenges. While Team B seemed to display strong team proficiency and congruency, the progression through the three games further strengthened these qualities. Overall findings indicate that the team exhibited psychological safety and engaged in productive risk taking. These, in turn, worked in tandem with

their group potency, which improved over time, and, according to theory, would also positively influence persistence and perseverance. We saw evidence of this happening, not only by continuing to persevere through the tournament, but in their dedication to improvement over the course of several matches. In fact, we would argue that this played a key role in Team B winning the tournament, particularly as the team least expected to do so.

Tournaments are not just temporal sites of performance mastery, individually or collaboratively. We argue here that they help highlight ways that teams have reflected upon and provide evidence of deliberate practice and situated learning. For instance, their continued references to metagame knowledge, and balancing of proficiency and congruency dynamics help to underscore their dedication to their craft. In this sense, they exhibited features of proficient players who have engaged in effortful practice and cognitive apprenticeship. In fact, almost all members of the team have reached the highest levels of gameplay in *League*, ranking amongst the top 2% of players worldwide. On the one hand, this case evidences applications of performance mastery utilizing practices we glean through interpretation; however, on the other hand, it is through high-stakes play that experts continue to hone their craft and apply transferable knowledge to novel challenges. While this case serves as just a snapshot of collaborative expertise, cultivated through situated learning and deliberate practice in a community of practice, it helps inform future directions in the study of how informal learning occurs in and through esports.

As mentioned previously, these findings are strongly connected to educational research on effective collaborative learning and a vast body of research on traditional athletic performance and improvement. By analyzing these psychological, social and performance-regulatory techniques as they are connected to informal learning, we can begin to understand the value of competitive esports as a legitimate interest-driven learning ecology, and increase general awareness of the development of individual and team-level expertise among players. However, of

equal importance are the historic barriers to participation that women and girls, and non-dominant players of color face in gaming and related computing and STEM pipelines. This tournament, like most professional and collegiate esports competitions, typified a lack of gender and racial diversity: almost all players were white and Asian men. Despite the university organization's diverse membership, and its strong efforts to support women's participation, the vast majority of its competitive players reflected these demographics. As the legitimacy of esports increases at a societal level, we must more meaningfully attend to the variety of ways differential access may affect educational and professional opportunities for historically marginalized groups.

Future work will explore more longitudinal analyses of collegiate esports team members, moving from beginners, or peripheral members, to expert players and central members over longer periods of time, such as over the course of an academic year. We will also explore barriers to participation that inhibit psychological safety in this learning ecology, in order to better understand the continued lack of diverse gender and racial participation in high-stakes esports learning and performance, more generally.

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2.

A pure meritocracy blind to identity

Exploring the Online Responses to All-Female Esports Teams in Reddit

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ABSTRACT

Despite recent growth and popularity, esports as a scene is struggling with a number of problems ranging from payment problems and cheating to questionable treatment based on various factors such as race and gender. In this paper we seek to uncover how perceptions of women in esports are guided by stereotypes

of all-female teams and ‘female professional players’. Our data consists of 952 Reddit comments on two announcements of all-female teams in *League of Legends* and *Counter-Strike: Global Offensive*. The nature of esports was perceived as a working meritocracy where only player skill matters. Especially all-female teams were seen to be a threat to this order, since they were considered to lack dedication and have ulterior motives for playing the game. Ultimately, getting to visibly exist as a woman in the scene was a reward for compliance in the esports meritocracy: exhibiting skill, playing in mixed teams, and tolerating harassment.

Keywords

esports, female gamers, all-female teams, professional players

INTRODUCTION: WOMEN’S ROLE IN COMPETITIVE GAMING AND ESPORTS

In this study, we seek to uncover how the esports-networked public receives women as professional and casual players into the scene. Rather than directly studying women or women’s experiences in esports (Vesterby, 2005; Beavis and Charles, 2007; Taylor et al., 2009; Ratan et al., 2015; Cote, 2017), we are researching how women are perceived as esports players by the esports community. Our aim is to uncover stereotypes and perceptions that stick to two concepts in particular, which we call the ‘all-female team’ and ‘female professional player’, in the eyes of mainly male esports audiences and fans (Newzoo, 2017; Superdata, 2018).

Women have always taken part in esports. For as long as games have catered for player versus player, there have also been initiatives aimed at creating more women-friendly spaces and women-only teams and tournaments. Justine Cassell and Henry Jenkins (1998) introduced the ‘’girls’ game movement’ as a relevant participant in the 90s competitive gaming culture, and

in 2013, Gabriela Richard and Christopher Hoadley further established PMS Clan as the largest and most renowned 'female-oriented' gaming group since the 2000s. They also point out that the members of the clan felt highly connected to gaming, despite varying levels of skill. Industry interest in recruiting for and sponsoring women-only competitive teams is likewise already reported in Janelle Brown's article from 1997, which introduces PMS and CrackWhore (another all-female gaming clan from the 90s) as 'all-girl Quake (1996) clans' aggressively disclosing their gendered identity in the male-dominated world of Quake. Furthermore, Tore Vesterby describes a female division in the 2004 Electronic World Sports Cup (Counter-Strike) in his 2005 dissertation on professional Danish female Counter-Strike (2000) and Liquidpedia.net records 2003 as the earliest instance of a public professional women's tournament in Counter-Strike (liquidpedia.net).

Regardless of this indisputable role in the history of competitive gaming, women have remained a minority, especially as professional and semi-professional players. While studying women's roles in the 2008 competitive LAN tournament scene of *Halo 3* (2001), Nicholas Taylor, Jen Jenson and Suzanne de Castell (2009) found that women were mostly relegated to various supportive roles familiar in the world of traditional sports; the 'cheerleaders' cheering on their sons' or boyfriends' teams, and helping them monetarily, or the 'booth babes' advertising gaming products to the assumed straight male audience. The rare women who were competing in the tournaments risked being labelled as 'halo hoes' who only play the game to get attention from male gamers (Taylor et al., 2009).

A decade later, women can increasingly be found as casual players and streamers in esports titles, and in the audiences, as both spectating and betting on esports (Gainsbury et al., 2017), but the public face of the scene remains male. Major tournaments are open to all players, yet women rarely play in them. Although women-only tournaments and leagues are becoming more widely

available, they tend to be low-level competitions. Even when played in conjunction with major open tournaments and carrying the same name, women-only tournaments have smaller prize pools and are often played exclusively online.

Professional female players that have appeared on the esports scene, such as Maria "Remilia" (formerly also known as Remi and Sakuya) Creveling in the 2016 North American league of *League of Legends* (2009) (*LoL* onwards), have largely been signed by low-tier teams, and found little success in official championship tournaments – although exceptions to the rule exist, such as *StarCraft II* World Championship 2012 North American champion, Sasha "Scarlett" Hostyn. Reluctance or trouble in signing women as professional players is still apparent, such as when the *Overwatch* (2016) premier esports league launched on 10th of January 2018 without any female players, despite team managers and spokespeople widely endorsing the equal treatment of women in the scene in the hope of signing women and women-only teams under their ranks (Beck, 2018). Some progress was made a few months after the launch when South Korean, Kim "Geguri" Se-yeon was signed by the Shanghai Dragons and debuted on April 5th 2018 as the first female player on the league (Morrison, 2018).

Recent increasing interest in esports in the US collegiate sports scene may help women's position in the future, as esports can offer US universities and colleges relatively easy opportunities to better comply with Title IX requirements if they actively promote esports for women or establish women-only teams (McTee, 2014; Kane & Spradley, 2017; Keiper et al., 2017). Despite such future possibilities, the larger growth of esports into a highly profitable market does not come without problems. Jennifer Jenson and Suzanne de Castell argue that instead of helping, "new and emerging economies of gameplay […] threaten a further entrenchment of gendered relations" (2018, 1). Thus, it continues to be important to look into how women are received into esports,

in order to assess how they can have a fair shot at reaching more central roles in the scene.

DATA AND METHOD

In November 2015 and June 2016, Team YP (owned by YouPorn, pornographic video sharing website) announced their sponsorship for two new esport teams comprising solely of female professional players in *Counter-Strike: Global Offensive* (2012) (*CS:GO* onwards) and *LoL*, respectively. News articles of both announcements (Juillet, 2015; Cocke, 2016) were posted on the social media site and forum, Reddit.com, in the two games' respective subreddits r/GlobalOffensive (November 13, 2015) and r/leagueoflegends (June 13, 2016). The general contents of the articles followed very closely the contents of the actual Team YP announcements (Team YP, 2015; Team YP, 2016), establishing that such teams were now active, had been playing in women-only tournaments and would henceforth be playing in mixed amateur tournaments. There was no mention of the monetary value of the sponsorships or the long-term goals of the teams. In the announcement of the all-female *CS:GO* team, YouPorn also announced their acquisition of an all-male *CS:GO* team.

These two comment threads were originally chosen as case studies for uncovering how a company producing pornographic content, that broke into the scene, was discussed by the contemporary online fan communities of esports games. However, it quickly became apparent that discussions such as whether YouPorn was an acceptable sponsor in esports was not a topic of interest to the community, in the least. Instead, what we did find were intense discussions of the players chosen by the sponsor. Especially the terms 'all-female team' and 'professional female player' were repeatedly raised and discussed by Reddit commenters. As a result, we found ourselves asking: how are women as esports players discussed in Reddit fan communities? What kind of perceptions and stereotypes are attached to women as players?

Stereotypes are commonly understood as generalized beliefs about a certain group of people, and while they might be useful in some situations, they can also be incorrect when applied to individuals, and can give rise to prejudice. They can also affect their targets in negative ways, by causing a situation where negative stereotypes add extra pressures on an individual and thus cause them to perform worse than their peers, even if they do not believe the stereotype themselves (Steele & Aronson, 1995). This effect has been shown to work with several different kinds of stereotypes concerning race (Steele & Aronson, 1995), social class (Croizet & Claire, 1998), gender (Spencer, Steele & Quinn, 1999), age (Lamont, Swift & Abrams, 2015) and other features.

The data comprises of the 3rd of August 2017 archived versions of the comment threads that ensued the posts. All in all, the two comment threads had over 1100 comments, of which 952 were accepted into the study. We excluded comments that had been removed or deleted, as we could not gain access to their content. The comment thread on r/leagueoflegends was significantly larger (910 comments used in study) than that of r/GlobalOffensive (42 comments used in study). The two threads also differed in composition: for example, over 40 percent of r/GlobalOffensive comments counted as jokes, whereas only 8 percent of comments in r/leagueoflegends did. Despite these differences, both comment threads were eager to discuss the 'female professional player' and 'all-female team' with great intensity, and shared a similar enthusiasm in sharing a different side to the story than the one presented in the news articles of the announcements.

In addition to the textual content of the comments, we considered their position in regard to other comments: whether they were part of a conversation between commenters, a reply to the original news article or a reference to other topical issues, stories or gags. Attention was also paid to what kind of comments had received most points from other users to figure out what kind of comments and opinions were considered popular. Reddit features a voting system where each user has the possibility to add a point (upvote)

or take a point (downvote) from discussion threads and individual comments. While up and downvoting in Reddit is supposed to be used to vote on content based on contribution to discussion (Reddit.com, 2017), at least in our experience it tends to be just as often used to vote on the basis of opinion.

While the opinions expressed in the two subreddits cannot be said to reflect those of the esports community as a whole, they certainly do give insight into general opinions and expectations of women in the scene. Especially the r/leagueoflegends subreddit has become the central venue for *LoL*-related discussion, heavily surpassing the official forums moderated by Riot Games on their own web domain. Threads containing over 900 comments are a common, daily occurrence. The thread's low number of total points (483) compared to its relatively high number of comments shows the controversiality of the subject. As a comparison, the highest number of points that a post in r/leagueoflegends subreddit has had is about 69,000 on an April fool's day thread about Riot Games giving Graves (a playable character in the game) back his cigar that Riot Games had earlier censored (SimplifyEUW, April 1st, 2017).

The opinions expressed by those commenting must also be understood in the context of Reddit and its scoring systems. Reddit is a link aggregation board that allows for and encourages discussion, and houses a number of dedicated communities. In her book, Adrienne Massanari (2015) describes the content on Reddit as a carnival, for one, where a single comment thread may contain anything and everything, from memes and puns to grotesque images, racist speech and sincere commentary. The community/ies reaffirms its culture through ritualistic retellings of stock answers, phrases and memes, and can be considered to participate in play while creating content and voting on it to gain points (Massanari, 2015, 19-25). The importance of voting is emphasised even further by Jenny Kennedy, James Meese and Emily van der Nagel, who list voting and the Reddit algorithm as the primary building blocks for Reddit culture (2016).

A highly-rated comment not only rises towards the top of the discussion thread, but also at the time of the two discussion threads (November 2015 and June 2016) posters were given a chance to earn a month or more of Reddit premium membership, called Reddit Gold. This membership could be awarded[1] by other Reddit members, as part of "a long-running tradition in the Reddit community as a way of saying 'good job' when someone provides a particularly insightful comment or funny post" (Bond, 2017). Thus, commenters are not merely sharing their opinions, but taking part in a discussion in which writing in an insightful, persuasive or funny way can become lucrative in multiple ways and currencies. In Craig Finlay's research on what comments are successful in relation to a user's karma, which is yet another score system within Reddit for individual users, there is a correlation between long and complex comments and a higher karma score (2014). Thus, although the Reddit community is the loudest community for LoL in particular, long and winding discussions are also directed by how Reddit works as a platform.

On the other hand, Massanari argues that Reddit culture can be described as geek masculinity, where technical expertise combined with "a white, able-bodied, young straight cisgendered male" is the norm (2015, 129). While both of the subreddits we studied prohibit "hateful language" (r/GlobalOffensive) or "hate speech" and "discriminatory language" (r/leagueoflegends), the threads we looked into did contain slurs and discriminatory comments towards minorities. While moderators may frequently remove such comments, this merely keeps the language civil while actual discriminatory opinions can be expressed as long as they are worded in a polite way.

Our research method consisted of two phases. In the first conventional content analysis phase (cf. Hsieh & Shannon, 2005) the comments were read through individually and divided into sets by topics or functions, emerging from the comments themselves.

1. Since 2018 this gifting system is still in place albeit with some slight differences, such as the possibility of gifting an award without any premium membership time.

Comments that covered multiple topics or functions were counted into all of them. During this initial phase we identified eight different sets across the two threads that can be found in Table 1. In the second phase of the study we focused on identifying stereotypes and perceptions of women, and "all-female teams" and "female professional player" in particular, from the comments in context of the larger conversations they were part of, using close reading (cf. Brummett, 2009) as our primary method.

	Esport	Professional players	YouPorn as a sponsor	The all-female teams	Women's abilities	Women's experiences	Jokes	Miscellaneous/off topic
r/leagueoflegends	277	62	74	186	179	44	148	148
r/GlobalOffensive	5	13	12	3	2		19	2

Table 1: Number of comments divided into different topics for both threads.

We will first discuss how esports, gender segregation and women as potential professional players were discussed. Then we move on to the perceived skill difference between men and women and the suggested reasons behind it, and the reception that the announcements of these particular sponsorships got. Finally, we will focus on how the stereotypes were moulded by previous all-female teams' public appearances and the influences brought on by YouPorn as the sponsor. We end the paper with opinions and expressions of the few self-proclaimed professional or semi-professional female players in the comment threads.

DISCUSSIONS ON PROFESSIONAL PLAY, SKILL AND GENDER SEGREGATION IN ESPORTS

One of the most commonly occurring themes in the two threads was the commenters' comprehension of esports as a meritocracy. The commenters were very eager to proclaim how the scene of competitive play was ruled by skill, above all else. As one

commenter put it: “What I like about gaming is that it’s a pure meritocracy blind to identity” (ID 613). Another commenter stated that “[o]ne of the biggest appeals of esports is that literally anyone can play on the same field. Fat, thin, man, woman, muscular, doesn’t work out except when he picks up his Red Bull lol” (ID 532). Overall, we tracked 64 comments emphasising the same idea: regardless of the player’s background, gender, identity or looks, their position in the competitive ladders was based only on their individual skill. Anyone could reach the highest tiers of the ladder if they were dedicated and worked hard.

Similar expressions have been found in a number of previous studies on different competitive gaming communities. Todd Harper (2013) and James Thompson (2014) both discussed in their respective studies of fighting game players that players see their scene as a strict meritocracy, while T. L. Taylor notes the same on esports in general as “fundamentally individualistic and meritocratic” (2012, 124).

The same meritocratic attitude was reflected in the fact that the comment revealing Team YP’s *LoL* team members’ individual rankings in the game’s competitive ladder was the second highest voted comment of the entire thread, with 334 points. Part of this particular comment’s success probably had to do with it being posted about 25 minutes after the thread opened, but out of all r/leagueoflegends’ 910 comments, only eight had a score of 100 or higher. Discussions of the team’s rankings and perceived skill were a popular topic and on the receiving end of several jokes, with 85 comments taking part. The general consensus of these comments was that the team was not professional enough to consider even trying to enter LCS[2], nor should they have received a sponsorship to do so.

The news article by Taylor Cocke, posted as the opening of the r/leagueoflegends thread, briefly mentions the team’s previous

2. EU/NA LCS: League of Legends Championship Series, the highest level of competitions in North America and Europe respectively, preliminary to entering the world championships of League of Legends.

success in women-only tournaments. Commenters were very eager to discuss this in length. Women-only leagues caused derision and they were mostly considered to be interfering with the established esports meritocracy. Most of the commenters that mentioned women's leagues considered them to be a negative or at the very least a redundant phenomenon. Often commenters talked about how women-only leagues and tournaments were an unneeded restriction on competition, or even disrespectful towards women as they suggested that women were "mentally deficient" (ID 365). They were also considered to be "coddling" (ID 424) women and did more to hold women back than actually help them (ID 446). The general reasoning behind these comments was that, unlike regular sports where women have a more or less clear physical disadvantage, in esports men and women should be on a level playing field without any physical or mental advantages.

However, some commenters saw a need for female only leagues: they gave women safer and more familiar opportunities to enter the competitive scene until they were ready to "compete on a real stage" (ID 613) and "having a BIGGER woman's league would promote more girls to playing, therefore being better, and then being taken more seriously" (ID 203).

Whereas the r/leagueoflegends thread was very invested in discussions of rank and gender segregation in esports, the r/GlobalOffensive thread was less interested in the subject. The topic was breached only in three comments (ID 15, 38, 39), all of which pointed out that female players were simply not good enough at the game to make it to the professional scene at the moment. Similarly, though, they were not unanimous about whether women-only leagues were necessary or not.

GAMING SKILL AS A BIOLOGICAL, SOCIETAL OR CULTURAL DIFFERENCE

Interestingly, even though many of the commenters touted the idea of esports as competition with a level playing field, the longest conversations in the r/leagueoflegends thread circled around the reasons why there were so few women in the top leagues of any esports game, or playing video games in general. The general belief was that women are a minority demographic in all esports scenes. Eight comments established a specific percentage, estimating that women make up 5 or 10 percent of players in most esports games. This might be referencing a statistic released by Riot Games four years earlier, which stated that women make up 10 percent of their players (Riot Games, 2012). There were no comments estimating that women were the majority, or even an equal half of the playerbase.

Why women play less esports and video games in general was a question that was posed and answered with considerable attention by many commenters. The longest discussions in the r/leagueoflegends thread (especially under comment ID 60, with 293 replies) as well as comment lengths (for example ID 108 with 756 words) were involved with finding out if women were so much worse in esports and playing video games that they could never be top professional players, and if they were, why that was. In comparison, the r/GlobalOffensive thread had no comments seeking to explore the topic.

In r/leagueoflegends, two main reasons were proposed. Either women had some sort of a biological or physical disadvantage, or they faced societal and cultural pressure. One commenter even suggested that women had not gotten above the rank of high Diamond[3] (ID 111). All in all, commenters in the thread agreed

3. Diamond, Platinum (or Plat): Ranks in League of Legends competitive ladder, from worst to best: Bronze, Silver, Gold, Platinum, Diamond, Master, Challenger. Bronze to Diamond is further divided into 5 divisions, Master and Challenger have only one. Challenger tier consist of the 200 best players in each region. Changes to ranks are incoming in 2019.

almost unanimously that women exhibit less skill in video games; only the reasons behind the skill difference was debated. To summarize the conversation, this particular snippet of a comment is quite representative of the others: “Nobody really knows, exactly. But they [women] are [worse at playing video games]” (ID 115).

Some commenters felt that the lack of women among gamers was natural to gaming culture; “women generally aren’t as hardcore into games” (ID 76), “it’s naturally a guy thing” (ID 133). The biological hindrances that some of the commenters considered women to have were slower reflexes, lower spatial intelligence, receiving less pleasure from gaming and less competitive nature. One commenter argued that “videogames activate the reward centers in the male brain to an enormously larger degree than they do in girls” (ID 77), according to academic research and, after requests by other commenters for the source of the claim, the commenter posted a link to a Stanford University School of Medicine internal news piece covering the study in question (Brandt, 2008). Despite the fact that esports is mostly seen as an equal and fair competition for both men and women, very few people who commented on women’s gaming skill seemed to believe that there was absolutely no difference between men and women. There might be some truth to this claim, at least when it comes to *LoL* players. In their study on learning to play the game and acquiring skills, Rabindra Ratan, Nicholas Taylor, Jameson Hogan, Tracy Kennedy and Dmitri Williams (2015) found that when controlled for time spent playing *LoL*, men and women acquire skill at the same rate. Men, however, on average played more than women and had a higher average skill level (Ratan et al., 2015, p 15-16).

In direct rebuttal, a few commenters pointed out that women have an advantage over men in fine muscle control, which could be beneficial in esports (ID 705). Furthermore, many suggested that it’s impossible to know how many women might be in high levels of ranked play, as many choose to keep their gender secret. Few

also mentioned the high-level women players that they knew of, either in their personal lives or those very few who have reached the top levels of public competition, like Sakuya in *LoL* or Scarlett in *StarCraft II*. Eleven comments purposefully excluded existing female professional players based on transmisogyny, but these views were also readily challenged in other comments. Inclusion of trans athletes is not a new debate in sports culture, where transphobia continues to be an all too familiar issue in general (Love, 2017).

However, a number of commenters also felt that men did not have a natural tendency to play more videogames than women. An alternative opinion for the difference in demographics was that contemporary society and culture do not encourage women to compete or play games like men (ID 374). For example, comment ID 209 wrote that "[i]t has to be a societal/cultural thing that leads to women not caring about gaming in the first place, thus lowering the potential talent pool for competitive gaming", while ID 374 added that "women are not encouraged to play video games by their peers the same way that men are and they're certainly not encouraged to take them seriously in the way that men are". Furthermore, some commenters thought that women playing publicly were subjected to more scrutiny (ID 229), more harassment (ID 175) or lacked role models (ID 74).

Commenters who favoured biological reasons answered these comments by pointing out that cultural and societal factors were created on the basis of biological differences (ID 133) or claimed that societal pressure, indirect barriers and sexist stigma as "feminist/SJW rhetoric" (ID 136) did not really exist in society, or at least not in the phenomena of or connected to esports. Furthermore, some commenters considered discussing the issue to be pointless, and it would be better to "[j]ust let them be worse at it" (ID 115).

DEFINING THE PLACE FOR THE 'PROFESSIONAL FEMALE

PLAYER'

Regardless of what the commenters considered to be the underlying reasons behind women's lack of skill and competitive success, they tended to have very similar answers on how to improve this record. 31 comments in r/leagueoflegends and three comments in r/GlobalOffensive encouraged women to simply get better at the game. The biological reasons were considered to be only minor hindrances, and societal and cultural factors something one could ignore if they so wished. 12 comments in the r/leagueoflegends thread argued that harassment specifically was a part of the game that every professional player had to deal with, even if female professional players might receive significantly more of it.

Insistence on personal hard work and dedication being the key to overcoming any barriers one might have to reach top teams and competitions further supports the idea of esports scenes as meritocracies. Commenters stated over and over again that anyone unwilling or even unable to overcome the inevitable barriers and hindrances is considered "not worthy of that career path" (ID 72). A person who cannot "take the hits" should not "go for it" (ID 263). The commenters also stated that the "correct" way for a player to earn a place on a team with sponsors, is to climb the competitive ladder on their own, without help from others; upon reaching the highest tier, professional teams would automatically recruit the player as a promising talent (ID 197). The commenters' insistence on focusing on the act of climbing the competitive ladder as the measure of one's worth as a player has been recorded in earlier studies on *LoL*. For example, Yubo Kou, Xinning Gui and Yong Ming Kow (2016, 5) argue that players "emphasized not only their present rank, but also the trajectory of ranks changing through their gaming history" as important descriptors of themselves as *LoL*-players. Climbing the ladder is thus a way to not only prove one's skill, but an origin story that endears the professional player to the fans.

Some commenters also made a very clear distinction between those female players who revealed their gender and those who did not. ID 176 suggests that if women wished to just play and become good at the game, if she "[was] really focused on playing and climbing, I don't think [she] would feel the need to bring up [her] gender". The suggestion seemed to be that if a woman does reveal her gender, she wants something else than to merely play the game and climb the ladder. In fact, as comment ID 147 puts it: "Gaming is one of the few avenues in life where a girl can be treated 100% fair, which has a lot of appeal to certain types of people. That falls apart if they go online and say, 'omg i'n [sic] a girl guyz!!'". Coming forward as a female player is thus not only a reason fair treatment does not manifest, but it is a choice made and wanted by the player herself.

The comments of r/leagueoflegends not only define the place for the 'female player' on the competitive or professional scene, but also suggest a set of behavioural rules for her. A good, skilled female player does not reveal her gender, but focuses only on playing (but without some of the social aspects, such as the use of voice communication). A bad female player discloses her gender in order to get special treatment. Interestingly enough, a number of comments also suggest that it is impossible to openly be a female gamer and not receive special treatment. Thirteen comments even considered it easier to get on the professional scene as a female player purely for the novelty value of being a woman.

YOUPORN AS A SPONSOR OF THE ALL-FEMALE TEAMS

Seventy-four comments on the r/leagueoflegends thread and 12 comments on the r/GlobalOffensive thread addressed the owner of the newly signed teams, Team YP. Many of the comments offered clear reasons for the acquisitions. As the teams had quite low rankings in their respective competitive ladders, they had to be a publicity stunt for the company behind the team, YouPorn. The highest voted comment on the r/leagueoflegends thread, with

a score of 376, was worried that the esports community would see the acquisition as a PR stunt "causing yet another time period of women gamers being mocked. Especially because of this team sponsorship specifically" (ID 60). Very few comments considered YouPorn and the porn industry to be despicable directly. Commenters were much more worried about how the sponsor would affect the way women in general, and these women in particular, would be viewed by the esports community and mainstream audience. In the r/GlobalOffensive thread, one commenter joked that "[m]om's and dad's will be proud" (ID 25) about the players working for a porn company. In another comment the same commenter specified that this only affected the female team, and not the male team, as it is "[n]ot as bad I wouldn't think" (ID 27).

The sentiment was not shared amongst all commenters, as some saw Team YP as doing the scene a favour by giving women a chance to play professionally. In the official announcement of Team YP's LoL team, a similar story was presented to the scene: "…female teams are still offered less time under the spotlight. Team YP believes in equal opportunity for all, which is why our organization is ecstatic to support the female LoL scene by forming its own roster, consisting of some top female talents active" (Team YP, 2016). The emphasis on social awareness and respectability in acquiring and sponsoring the team is similar to the brand construction lately undertaken by Mindgeek, the company owning YouPorn, and especially that of another pornographic website in its ownership, Pornhub (Paasonen et al., in press).

Comments about the teams' ability to enter top competitions in their respective games were particularly interesting, since in both *CS:GO* and *LoL* pornographic companies such as YouPorn are banned from visibly sponsoring teams in top competitions. In the case of *LoL* the official LCS 2016 rules state that "[s]ponsorship acquisition is unrestricted", but sponsorships that are related to pornographic imagery or products cannot be displayed in any way in any relation to *LoL*, *Riot Games* or LCS (Riot Games, 2015,

17). In *CS:GO*, ESL[4] organizes most of the major professional competitions, and they have banned Team YP from participating because of their pornographic sponsor (Grubb, 2016). ESL's decision also affects the *LoL* team, as ESL also organizes lower level *LoL* tournaments. Due to these rules it would be impossible for Team YP to sign a higher-level team and still get exposure for the YouPorn-brand.

Comments in the r/GlobalOffensive thread jokingly suggested the reason for acquiring the two single-sex teams was pornographic in nature, and bluntly said: "'why?' money" (ID 40). In r/leagueoflegends, 13 comments drew attention to how the team members' skill level was likely an intentional choice on Team YP's part: "Of course they're not professional. The org that picked them up isn't even allowed in lcs" (ID 53). Furthermore, no information was released on how big the sponsorship was. Consideration about whether the teams would actually receive enough money to live on, or if they would be living in a gaming house (as is common for professional teams) did not appear in the comments that were miffed about the teams' sponsorships. Perhaps the assumption of the *LoL* teams, and the sponsor's aspirations to break into the professional competitive scene was an effect caused by a previous all-female *LoL* team called Team Siren (discussed in more detail below), who announced that their aspiration was to become a fully-paid professional team, and had moved into a gaming house even before they had accrued any significant sponsorship or public interest. As of 26 January, 2018, there is no mention on Team YP's website that either team is still signed by them.

4. Originally Electronic Sports League, an esports company that organizes various professional and amateur competitions and tournaments worldwide in several esports titles.

RUNNING JOKES ON WOMEN AS GAMERS, SEX APPEAL AND PORNOGRAPHY

Both threads had a lot of jokes and banter in them. In r/leagueoflegends, there was a specific joke that was very popular. The fourth highest voted comment on the thread was "I'm a Siren" and there were 19 similar comments, 8 that said "Siren 2" or something similar, and 46 other comments alluding to the infamous all-female Team Siren. The 73 'Siren-jokes' were exactly half of the total number of jokes in the r/leagueoflegends thread.

Team Siren was an American all-female *LoL* team established in early 2013 or late 2012. On May 30, 2013, they released an ambitious introductory video[5] that was soon posted on the r/leagueoflegends subreddit. After a loss against a team of streamers and ex-professional *LoL* players led by George "HotshotGG" Georgallidis[6], and a parody of their introduction video posted on YouTube by Jason "videogamedunkey" Gastrow[7], Team Siren became a running gag that tended to appear at the time when a thread in r/leagueoflegends somehow related to women in esports or *LoL*. Comments with Siren jokes were also likely to have a good score in Reddit. On June 19, 2013, it came to public attention that Team Siren had disbanded.

Although Team Siren was not the first all-female team in *LoL*, it was the first to gain such infamy in the Western *LoL* audience. The team moulded the figure of the 'all-female team' as one that is likely to be a publicity stunt not expected to persevere – or even attempt to persevere – in competitive play. This ties into the expectations of women as professional players in general. The case of Team Siren is a convenient example of women having thought too much of themselves and their skills, but also of having used the revelation of their gender as a way get attention, money or

5. https://www.youtube.com/watch?v=_Gz9um3wV1o
6. https://www.youtube.com/watch?v=zparciz8Res
7. https://www.youtube.com/watch?v=7onpZl0tayA

special treatment from (male) gamers. Many of the Team Siren players were active streamers and saw subscription spikes in their personal channels as a result of the team announcement. However, publicity runs within the scene are not rare nor limited to one gender in general, even in official leagues. For example, the North American Challenger team, Delta Fox, which comprised of male ex-professionals turned streamers, purportedly took part in the Challenger Series[8] 2017 for team franchise visibility rather than expected tournament success (Bates, 2017).

Most of the other jokes in the two threads were sexual in nature or related to the players' gender. In r/leagueoflegends, these jokes often carried on familiar memes related to Reddit, internet pornography or the porn industry, such as "5 Girls 1 Rift[9]" (ID 643) (alluding to the infamous "2 Girls 1 Cup" porn video (cf. Paasonen, 2017)) and wondering if the team used the casting couch to do interviews (ID 680) (alluding to the 'casting couch' meme (cf. Knowyourmeme.com)). The sexual jokes were not very popular among other commenters, as they were among the comments with the worst scores. The third and fourth lowest voted comments (-11 and -10 scores) wished to "see some videos of them playing, if you know what i mean :PPPPPPPPPPP slurp hehehehehe" (ID 679) and to "[r]ace to backdoor[10] them first" (ID 3). Also, a transmisogynistic joking question about the players' genitals ("are this grills or grills with sausage" (ID 354)) was not received very well (-8 score). Many jokes in comments also carried on widespread stereotypes associated with female *LoL* gamers. One such stereotype is that women only play support characters, so a few jokes wondered "how can you win with 5 supports?" (ID 860) while others asked what would the team do if Janna (a popular support champion) was banned (ID 738). The low

8. CS: Challenger Series, used to be the semi-professional series in League of Legends, top teams could compete over entering the LCS.
9. Rift: Summoner's Rift is the name of the map on which professional League of Legends competitions are played on.
10. Backdooring: Winning the game by destroying the enemy's base behind their back, a term originally coined in relation to Enrique "xPeke" Cedeño Martínez securing victory for Fnatic against SK Gaming in IEM Katowice 2013.

scores of the sexist, sexual and transphobic jokes show that the r/leagueoflegends-subreddit does not receive straightforward discrimination of women well, even in jokes. Casual sexism, misogyny and transmisogyny had a more positive reception in serious or persuasive dialogue, as established in the previous subsections of this paper.

In the r/GlobalOffensive thread, over 40 percent of the comments were sexual jokes. The highest voted comment of the thread with a score of 47 suggested "how about they mix the 2 rosters (͡° ͜ʖ ͡°)" (ID 7). The other sexual jokes commonly alluded to the two teams doing pornography together, or them being something akin to a sex worker due to the sponsoring party. Interestingly, there were also a few sexual jokes about the all-male roster. The commenters felt "let down" (ID 3) that the players they had wished to be in the team, such as Dosia who was called "the sex god" (ID 6), had not been signed. The jokes in r/GlobalOffensive were more blatantly sexual in comparison to r/leagueoflegends, and they were received much better. This might be because the original post included a link to a news story of Team YP announcing their two new single-sex rosters for *CS:GO*, instead of only the all-female roster. It might have also been caused by the fact that there had not been an iconic all-female team like Team Siren in the *CS:GO* scene in the recent years, and therefore no familiar gag or meme to fall back to in the thread, or simply because of cultural differences between the two games' subreddits.

WOMEN COMING FORWARD WITH THEIR OWN EXPERIENCES

Reddit does not have any features that would let us know users' genders, but a small number of commenters came forward unprompted with their gender and drew from personal experiences in the matters discussed. In r/leagueoflegends, 21 comments were from self-proclaimed women, whereas r/GlobalOffensive had none. Commenters in r/leagueoflegends were also keen to reveal

their gender as men, which did not happen in r/GlobalOffensive either, possibly due to the fact that commenters in r/leagueoflegends drew from their gendered experiences in more serious discussions, which the thread had plenty of, compared to r/GlobalOffensive.

Especially interesting for our purposes were comments from members of Team YP and Team Siren, and a woman who proclaimed to be part of a mixed team that was competing seriously in amateur competitions. Firstly, Tanja "Escape" Reither (using the name xTanii in Reddit) from Team YP gave her perspective (ID 800) on the sponsorship and the team's goals and made a clear distinction between Team YP and Team Siren. According to her, Team YP differed from Team Siren as they did not aim to reach the LCS or CS, but would instead focus on competing in amateur tournaments. Reither described her team as "just 5 girls who are playing and having fun and trying to get better at League" and responded to the critical comments about the team members' individual ranks with, "Hey, who cares?" In addition, she explained that Team YP did their sponsorship with the roster "like every other organisation would do". The comment received a score of 251, the fifth highest on the thread. The highest score (60) response to Reither's comment asked for a statement on the negative behaviour in-game and alleged boosting[11] (ID 807) by one of the team's members, addressing major concerns commenters had had earlier, and that had not been initially answered by Reither. Most of the direct responses to Reither, however, wished the team good luck and success in the future, in clear contrast to the rest of the comment thread where the team was often described as being too bad to even compete publicly.

Secondly, Caitlin "ilysuiteheart" Shloush from the former Team Siren commented (ID 904) on the thread with her own experiences in Team Siren as an example of a failed all-female team. According to her, it would be better to make a mixed team that

11. Boosting: Helping someone to reach a higher rank than their skills allow by f.ex. playing on their account. This is prohibited in most competitive games and can result in a ban.

could compete consistently on amateur level rather than stick to the concept of all-female teams, leagues and tournaments. Shloush also expressed that the only thing keeping her from reaching LCS was her own lack of natural talent, not sexism or missed opportunities because of her gender. She finished her comment with a reminder that, instead of hating the girls signed by Team YP, people should hate the organization sponsoring them. Shloush felt that the organization was exploiting the girls (ID 904). Unfortunately, her reply was written after the most heated discussion had already run its course, and therefore it accumulated no responses from other users.

Thirdly, a female member of a mixed amateur team gave her perspective on all-female teams receiving sponsorships (ID 848). In her comment there is a clear distinction between "girls like [her, who] are serious about wanting to make a name for themselves and people that aren't even high Diamond create all-female teams for a publicity stunt". According to her, all-female teams use their gender as "an excuse to not be as good as males", describing them as lazy and only wanting attention. Her argument draws directly from the lower ranks of the Team YP members, who were all below her rank of Diamond 1-2. She finishes her comment by stating that "I hate that these people are the face of female e-Sports and making the rest of us look like a fucking joke… angers me to no end" (ID 848). Her comment solidifies a core part of the meritocracy expressed directly or indirectly by other commenters too: sponsorships should be reserved for those teams that are already at, or close to, a professional skill level. One of the responses to her comment exclaims: "[f]inally a girl which just straight and knows what she is talking about" (ID 855). Both ID 848 and ID 855 seem to be upholding the idea of two kinds of female players, of which only the latter should reveal their gender publicly: women undeserving of their position in the limelight and women with a 'correct' approach to gaming and competition, and thus, being a '(professional) female player' in esports.

ID 848 is not the only self-proclaimed woman in the thread who draws from this dichotomy. ID 166 states that it is impossible to be yourself, as "[y]ou're either seen as a quiet, reserved, don't speak and play gamer or seen as one of those pandering 'girl gamers' who uses their sex to get them advantages by any means necessary […] your always put into one of the two categories. :/".

CONCLUSIONS

The comment threads in subreddits r/leagueoflegends and r/GlobalOffensive offer an insight into how women are currently received in the esports scene as players. The dominant discussions revolved around esports as a meritocratic haven where the only thing that matters is individual skill, not gender or identity. While some commenters believe that women are about to make their grand entrance as professionals in esports at any minute now, the majority were content with establishing that, since women have not reached the top of any esports titles as professional players, it means that there must be something they are lacking.

The commenters did recognise that there are possible biological and social hindrances for women, stopping, or at least slowing, their ascent to the highest levels of competition. However, most of the commenters still seemed to consider these hindrances to be something that could be overcome with hard work and dedication. Public proclamation of one's gender was a heated topic in the r/leagueoflegends thread, with commenters arguing that a dedicated woman should not bring her gender into play or general knowledge, but preferably hide it altogether. The figure of the 'female professional player' – one unapologetically disclosing her gender – was established as one more likely to be a casual player who didn't truly care about competing in esports, but was instead in favour of getting attention from the male audience for monetary gain, publicity or other reasons.

While the problem of being a female player in the esports scene did elicit solutions from the commenters, such as hiding one's

gender and embracing the harassment as a natural part of the game, the concept of the 'all-female team' was one that could not be imagined as being part of the competitive scene; and, was even considered to threaten its credibility. The individual players in Team YP's teams were urged to work on proving their worth in mixed teams or in solo play. Whereas, as a team, they were considered to be little more than booth babes or a public relations stunt bringing fifteen minutes of fame to the YouPorn brand.

The terms 'female professional player' and 'all-female team' have resulted in problematic assumptions and stereotypes that stick to women in esports in general: women are seen to lack dedication to their sport, and they are readily accused of having ulterior motives for merely existing publicly in the scene. Indeed, there are few possibilities in the esports scene for a female gamer to also be a woman, if she wishes to be taken seriously or become a professional player.

The current situation seems to mostly stem from a combination of blind belief in the meritocracy of esports, that the playing field is truly level for all, and from the lack of women in the highest tiers of competition. Persuasive and investigative discussion that touches on controversy is also popular with (and possibly lucrative for) commenters on Reddit, which suggests that a number of the comments are probably exaggerated or should be taken as playing devil's advocate. And while, in a moderated public forum like Reddit blatant harassment may be quickly acted on, the negative stereotypes associated with female players themselves can affect the performance and participation of women in gaming (Kaye & Pennington, 2016).

As Jenkins and Castell have noted, the recent developments in gaming, from the rise of DIY gaming professionals in Twitch.tv to gendered controversies like Gamergate, threaten to further entrench the oppositional gender positions rather than alleviate the precarious situation that aspiring (professional) female gamers are, and have been, in (Jenson & Castell, 2018). It is crucial to

study how the situation changes in the future without becoming complacent that the scene will naturally grow towards equal opportunity.

In the future it would be interesting to study how contemporary professional female esports players have been perceived by their communities, and also how they themselves believe the professional esports scene could better support women as competitive players.

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3.

Effects of Mobile Platform on Female Engagement in MOBA Games

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ABSTRACT

Previous research shows that fewer female players participate in competitive games than male players. However, it has been reported that there are more female than male players in *King of Glory* (KoG), one of the most popular multiplayer online battle arena (MOBA) games on the mobile platform in China. This study aims to investigate how KoG captures the interest of female

players at a higher level than other games. We compared the game design of KoG with *League of Legends* (LoL), one of the most popular MOBA games on the PC platform. We followed up with a semi-structured interview study with 20 participants about their gameplay experiences on the two different platforms. Our analysis indicates that mobility, sociability, and lower barrier to entry are the main factors that drove female players to participate in KoG.

Keywords

multiplayer online battle arena games, MOBA games, competitive games, game design, gender differences, game control, game platform.

INTRODUCTION

The video game industry has emerged as one of the most popular entertainment platforms in the world, and it continues to draw an increasingly diverse audience in terms of age and gender. Especially in recent years, female participation has gradually increased in the gaming industry. Based on the *Entertainment Software Association* (ESA) 2017 annual report, 45 percent of US gamers are women (ESA, 2018). However, research shows that female players prefer to play non-violent games, such as social games, puzzle games, board games, etc., while male players prefer violent and competitive games (Hartmann & Klimmt, 2006; Inkpen et al., 1994; Lucas & Sherry, 2004; Phan et al., 2012).

This finding is supported by a report from Quantic Foundry (QF). Female participation rates in MOBA games and first-person shooting (FPS) games are only 10 percent and seven percent, respectively, and there is only two percent female participation in sports games (Yee, 2017). Similar results have been found in mobile gaming, especially in Chinese culture where mobile gaming is highly adopted. It has been reported that Chinese female players prefer mobile games, such as Match 3 games, real-time

strategy games, puzzle games, chess games and music games, over competitive games (QuestMobile, 2018a). Furthermore, male players outnumber female players in certain mobile game genres, such as speed running, action and sports (Umeng, 2018). However, when it comes to *King of Glory* (KoG) (Tencent Games, 2015), a MOBA game on the mobile platform released by Tencent Games in China (Jiguang, 2017), 54 percent of the players are women. This surprising phenomenon served as our motivation to try to understand what led to such high female participation in KoG in China.

In this paper, we compare KoG with *League of Legends* (LoL) (Riot Games, 2009) based on interviews of 20 experienced players. Our research objective is to compare KoG with LoL to understand factors that led to higher female participation in a game genre that has been traditionally seen as overly competitive and less inviting to females. As one of the most popular MOBA games in the world, LoL has been well studied. In contrast, there is little systematic research reported on KoG despite it being the most popular MOBA game in China. This study also aims to provide a better understanding about the culture of KoG and how it relates to female gaming participation in China. The findings of this paper not only help introduce Chinese MOBA culture to the general gaming audience, they also encourage game scholars to think about how intercultural differences could offer insights on modern game design. In the next section, we review the literature on gender differences in competitive gameplay and game platform research. We then describe our research methodology, which included semi-structured interviews with players of KoG and LoL. Next, we provide a game design analysis on different platforms and summarize the findings from the interviews. Specifically, we provide detailed comparisons of the similarities and differences between LoL and KoG across dimensions that we identified to be important from the interview study. Finally, we discuss features that could be leveraged to design future games to encourage female participation, especially in multiplayer collaborated competitive games.

RELATED WORK

Gender Differences in Competitive Gameplay

Previous research has found clear differences in video game genre preference across gender. Female players tend to prefer social games, music or dance games, and puzzle games, instead of games with low social interaction and violent content (Hartmann & Klimmt, 2006; Inkpen et al., 1994; Bonanno & Kommers, 2005; Lucas & Sherry, 2004; Phan et al., 2012), whereas men prefer more violent and competitive games (Inkpen et al., 1994; Phan et al., 2012). This is consistent with what QF had found. According to a QF report, only 18.5 percent of the core gamers are females. Consistent with the traditional perception of female gamers, these female core gamers play more casual games such as Match 3 (e.g., *Candy Crush Saga*, *Bejeweled*; 69%), Family/Farm Sim (e.g., *Stardew Valley*; 69%), and Casual Puzzle (e.g., *Angry Birds*; 42%). What separates them from casual gamers is that they also play Massive Multiplayer Online (MMO) games (e.g., *World of Warcraft*; 36%) and MOBA games (e.g., *Defense of the Ancients*, aka. DOTA, LoL; 10%) (Yee, 2017). Specifically, in China, it is reported that male players outnumber female players in certain game genres such as speed running, action and sports (Umeng, 2018).

The low female preference and participation in competitive games should be considered in a competitive context. One explanation for female players not showing interest in competitive games could be because they are less interested in the competitive or violent aspects of play (Cassell & Jenkins, 1998; Hartmann & Klimmt, 2006; Lucas & Sherry, 2004). Some researchers claimed that males tend to be more competitive and effective than females in intergroup settings (Cashdan, 1998; Gneezy et al., 2003; Niederle et al., 2007; Vugt et al., 2007). Specifically, Cashdan (1998) claimed that although men and women feel equally competitive, men are more competitive in athletics and for sexual attention while women are more competitive in appearing attractive.

Schmierbach (2010) mentioned that as "*competition serves to reward and reinforce aggressive play"* (p. 268), female players, who are less likely to enjoy competition, are less likely to learn violence as "rewards" in competitive play in the same manner as males. However, some research found that the motivation of players determines their game preferences. People play games for different reasons, and even the same game may hold various meanings for different players (Yee, 2006). Based on the survey conducted by QF in 2016, the primary motivations for men to play games are competition (14.1%), destruction (11.9%), and completion (10.2%), while completion (17%), fantasy (16.2%) and design (14.5%) are the primary motivations for women (Yee, 2016). Olson et al. (2008) found that male players use violent video games to express their demands for gaining power as well as their feelings of anger and stress. Hartmann and Klimmt (2006) found that female players prefer games with rich social interaction and dislike "*violent content and heavy gender-stereotyping in the presentation of character*s" (p. 925). These findings also support the explanations mentioned previously. However, Olson et al. (2008) also found that a considerable number of female players utilize games to express their anger and other emotions. Hartmann and Klimmt (2006) found that social interaction is more important to female players than the gender-stereotyping and violent content in the game. Furthermore, researchers have found that the level of technology integration and dedicated gaming time affects the motivation of female players (Royse et al., 2007; Shaer et al., 2017). Female players who spend a lot of time playing games usually enjoy mastering the games and are motivated by challenges. Competitive games allow them to achieve these goals (Royse et al., 2007; Shaer et al., 2017). For gamers who play mostly casual games, the motivation could be a sense of self-control. Casual gamers still consider themselves "outsiders" and consider masculinity as the prominent factor in competitive games (Royse et al., 2007).

However, some other researchers say the discourse about gender preferences are not about simple binaries, such as violence or

no violence, but about considering different contexts (Carr, 2005; Jenson & de Carstell, 2010; Yee, 2008). Game attributes such as graphics, interface, characters and participants' ages, amounts, consumptions and locations could affect a player's gaming preferences. For instance, Yee (2016) found that competition is the most popular motivation among young gamers (ages 13-25), but that category drops to ninth place among gamers who are over 36 years old. Fantasy and completion are the primary motivations for these gamers. Regardless of these sub-contexts, the main hindrance to female players' willingness to play competitive games in a general social context could be the existing gender-stereotyping and hostile environment. Previous research has found that female players are often perceived as "outsiders" in the gaming community, and receive both sexual harassment and general harassment due to gender stereotypes (Gray, 2012; Yee, 2014; Nakandala, 2016; Ratan et al., 2015; Taylor et al., 2009; Tang & Fox, 2016; Shaer et al., 2017; Salter & Blodgett, 2012). As players become more aggressive in the game world, these stereotypes are progressively internalized and are more likely to be adopted by experts than novices (Bergstrom et al., 2012), which could easily form an unhealthy gaming environment for female players.

Research has found existing gender stereotypes in games (Beasley & Standley, 2002; Downs & Smith, 2005; Cassell & Jenkins, 1998; Taylor, 2009; Mou & Peng, 2009; Gao et al., 2017; Shaer et al., 2017; Salter & Blodgett, 2012). Underrepresentation of female heroines, hypersexualized female portraits, and the ways in which hypermasculinity dominated over femininity in game designs not only reinforce existing gender stereotypes (Martey et al., 2014; Brehm, 2013; Todd, 2012; Schröder, 2008), but negatively affects women's perceptions and behaviors of themselves (Richard & Hoadley, 2013; Vermeulen et al., 2014; Ratan et al., 2015; Shaer et al., 2017) and the overall dominant work culture of the gaming industry (Salter & Blodgett, 2012; Shaer et al., 2017).

Game Studies in Cultural Context

Different researchers have identified female players with different motivations and preferences in different cultural contexts. However, the majority of gaming research has focused on western countries (e.g., Shaw, 2010) and Japan (e.g., Consalvo, 2016) due to their widespread influence on the global gaming industry. Bjarke and Martin (2016) mentioned that current game studies are centralized on Western Europe and North America, and claimed that this limits the studies across different approaches and perspectives in the interdisciplinarity of game studies. To enrich the game research field, it is necessary for scholars to study the gaming context outside of Europe, North America, and Japan. Chinese game companies, such as Tencent Games and NetEase Games, have released several games that are highly popular among Chinese gamers. Specifically, mobile gaming has become the mainstream among Chinese players due to the wide adoption of mobile devices. In addition, mobile gaming is also one of the approaches to mobile socialization. Both mobile gaming and mobile socialization are nuances of the Chinese gaming culture that are understudied (Liu & Li, 2011) and gender differences in participation have also not been systematically analyzed as well. Existing reporting of Chinese games mostly involves statistical trends, but does not provide nuanced comparisons that could generate new insights for game research, design, and practices. This paper aims to use KoG as a case of comparison to provide new understanding and research directions in terms of culture and game design. The reasons underlying female players' participation in competitive games are diverse and complex. Researchers are still exploring factors influencing female players' participation in competitive games. Thus, it is difficult for game designers to generate a systematic framework to increase female player participation, especially in different cultural contexts. This paper tries to translate successful Chinese game designs that have led to high female participation into high level design insights for future gaming research.

Gaming across Different Platforms

Considerable research has been conducted on gaming across different platforms and controllers to understand their effects on the gameplay experience. Researchers have studied player experience and behavior on immersive virtual environments versus traditional platform desktop (Persky & Blascovich, 2007), and pen and paper platform versus digital platform (Tychsen et al., 2008; Tychsen, 2006). Since few games are developed across different platforms, game companies typically maintain the same game content, but with different game control devices. Therefore, prior research on game input has studied the differences across various controllers, such as keyboards, gamepads, and controllers with different design and functions, and how they affect the playing experience including user enjoyment, motivation, engagement, and social behaviors (Birk & Mandryk, 2013; Brown et al., 2015; Gerling et al., 2011; Lucas & Sherry, 2004; Tychsen, 2006; Limperos et al., 2011; McEwan et al., 2012; Rogers et al., 2015). As more platforms have become available to the public, gaming companies have realized the importance of developing games across different platforms. This paper aims to contribute to game research on gaming across different platforms such as PC, mobile phones, and consoles. No prior research has been conducted on game design to explore how different platforms affect female participation in MOBA games. One of the goals of this paper is to inspire other researchers on studies between game platforms and female participation.

METHODS

Game Design Comparison

We conducted a design analysis that focused on unpacking the differences in MOBA game design on mobile versus PC platforms. We chose to study KoG mainly because it is a popular mobile MOBA game with a high level of female participation in China.

We wanted to understand and explore how KoG successfully attracted female participation. Since LoL is a popular MOBA game on PC that is known for its low female participation and an environment toxic to female participants, the contrast with KoG could reveal factors that could contribute to female inclusion. Beyond that, these two games are also similar in the following ways: 1) The fundamental game mechanics and design elements are very similar; 2) they are the most popular MOBA games on mobile and PC platforms; 3) they are owned and developed by the same game developers.

MOBA Games

MOBA games, as a genre, were originally derived from the Aeon of Strife map in *StarCraft*. Later, Blizzard Entertainment released *Warcraft 3* (Blizzard Entertainment, 2002) that included a mod called *Defense of the Ancients* (DOTA) that popularized the MOBA genre. Later, the emergence of LoL and DOTA2 gradually formed a stable map mode and game mechanics of MOBA games. A MOBA game typically contains the following map layout and game mechanics: two teams with five players each located on opposite ends of the map with the goal of destroying the nexus located in the enemy's base. Three lanes (top, mid and bottom) connect the two bases, and two turrets are located on each lane for each team. Players need to destroy all of the turrets on all lanes to approach the nexus, for which players need to slay enemies and non-player characters (NPC) such as minions and monsters to level up, get buffs (a buff provides a status uplift effect in the game), and earn money to buy necessary equipment from the in-game store.

Players usually fill different roles on different positions. For example, the top role is mainly for guarding the top lane, and it usually requires avatars with high defense and/or damage ability, a.k.a. "Tank." The in-game avatars are called champions, and there is a wide range of champions to select from in MOBA games. These champions are designed with distinct appearance, abilities, and fantasy backstories, which allows players to form various

team compositions in the games, depending on their preference and strategy. Although most MOBA games are released on the PC platform, since 2013 more and more MOBA games are being released on mobile platforms. The earliest mobile MOBA games, such as *Solstice Arena* (Zynga, 2013) and *Vainglory* (Super Evil Megacorp, 2014), only supported 3 vs. 3 mode and with abstract maps, compared to the maps on PCs. Later, KoG and *Mobile Legends* (Moonton, 2016) started to support 5 vs. 5 mode as their main game mode. The complexity of the maps in these games is pretty close to the maps played on PCs. The 5 vs. 5 mode has become the typical and main game mode in MOBA games on mobile platforms. *Vainglory* started to support 5 vs. 5 mode this year to attract more players.

King of Glory

King of Glory (or 王者荣耀 in Chinese) is a multiplayer online battle arena (MOBA) game on the mobile platform in China developed by Tencent Games, which is a subsidiary of Tencent (King of Glory, 2015). In July 2017, it was reported that the game had more than 54 million daily active players and 163 million monthly active players, according to Jiguang, an IDG Capital-backed big data platform (Jiguang, 2017). Specifically, it was reported that females made up 54.1 percent of the overall players, outnumbering male players for the first time in any MOBA game (Jiguang, 2017). KoG is a new and highly popular mobile MOBA game in China that is understudied. The goal of this research is to introduce KoG to a broader audience, and to uncover factors that encourage female players to participate in competitive MOBA games such as KoG.

League of Legends

League of Legends (LoL) is a MOBA game on the PC platform developed by Riot Games, which is a subsidiary of Tencent Games. It is one of the most played video games on the PC platform in the world with more than 27 million daily active

players and 67 million monthly active players (LoL, 2017). Female participation was reported to be 35 percent in 2017 (Bloomberg, 2017). Besides the classic 5 vs. 5 mode, LoL also provides other play modes, such as All Random All Mid, Bot, and The Twisted Treeline (3 vs. 3) for players to enjoy different playing experiences. In this work, it is our goal to compare and contrast player experiences on KoG and LoL to understand the difference in female participation in these games given that, since they are developed by the same company, they share very similar map layouts and game mechanics.

Semi-structured Interviews

We conducted semi-structured interviews with 20 Chinese participants (10 women, 10 men) who were recruited by the researchers on game events and conventions in the US from June-December 2017. To obtain more meaningful data and reduce gender bias, the researchers recruited women and men in equal numbers, and ensured all participants had at least a half year of playing experience on at least one platform. The interviews were conducted in Chinese and in person, with consent to audio record. The recorded interviews were transcribed and translated into English by the first author. All participants participated voluntarily with no compensation. The interview protocol was adapted from the authors' prior research on MOBA games (Gao et al., 2017) with a particular focus on topics such as what game the participants mainly play, what motivated them to participate in these games, what in-game role they usually play, how they communicate with other players, etc. Table 1 details the demographic information for all participants. Table 2 shows the gender distribution regarding their game platform experiences.

Interview Data Analysis

We applied open coding (Corbin & Strauss, 2015) to the translated transcripts. The authors discussed the initial codes. Chinese gaming culture was considered during the coding process to

identify the data more accurately. For example, we identified and transcribed Chinese gaming slang, such as “开黑” (friends who play together) “腿短” (champions with a small area of effect), and others based on popular Chinese gaming culture. An affinity diagram (Holtzblatt & Jones, 1993) was used to organize the open codes to iteratively refine emerged themes.

Participant code	Gender	Age range	Education level
P1, P5, P6, P16, P17, P18	M	21-28	Master
P2, P3, P4, P15	M	24-26	Bachelor
P12, P20	F	24	Doctoral
P7, P8, P11, P13, P14	F	23-28	Master
P9, P19	F	24-27	Bachelor
P10	F	20	Undergrad

Table 1: Participant Demographics.

Platforms	Women	Men
Both	2	6
Mobile Only	6	2
PC Only	2	2

Table 2: Gender distribution regarding playing experience on different platforms.

GAME DESIGN ANALYSIS

In this section, we compare the game designs of KoG and LoL in terms of avatar design, gameplay design, and social interaction design, as well as tutorial design.

Avatar Design

Avatars, also known as champions, are the core component in MOBA games. Champions feature different appearances, backgrounds, and capabilities, and they give players a wide range of options in the game. At the time of the writing of this paper, there were 141 champions in LoL, including 46 women (32.6%), 94 men (66.7%), and one dual-gender champion (Kindred) (LoL, 2018), and there were 84 champions in KoG, including 23 women (27.4%) and 61 men (72.6%) (KoG, 2018). Although champion gender distribution between LoL and KoG was similar, most of the champions in KoG were depicted based on well-known Chinese historical figures or fictional novel characters. For example, champions such as Daqiao (Chinese: 大乔), Xiaoqiao (Chinese: 小乔), and LüBu (Chinese: 吕布) are historical figures from the Three Kingdoms period (220-280 AD) who were documented in the Records of the Three Kingdoms (Chinese：三国志). Champions such as 哪吒 and 姜子牙 are fictional characters in Investiture of the Gods (Chinese: 封神演义), a fantasy novel written during the Ming dynasty (1368-1644).

Gameplay Design

Different platforms require different methods of input. A keyboard and a mouse are required for input on the PC platform, while the touch screen is the input method for the mobile platform. Figure 1 shows the input control method for KoG on a smartphone (KoG, 2018). A virtual joystick is created for the left thumb to control the avatar movement, and clickable virtual buttons are designed for the right thumb to attack and cast spells, or use abilities. LoL requires the combination of a keyboard and a mouse. The mouse is used to control avatar movement, and select items, and keys such as Q, W, E, R, and other number keys are used to attack, cast spells/use abilities, and consume or activate items in the inventory (LoL, 2018). (See Figure 2)

Figure 1: The input control method for KoG.

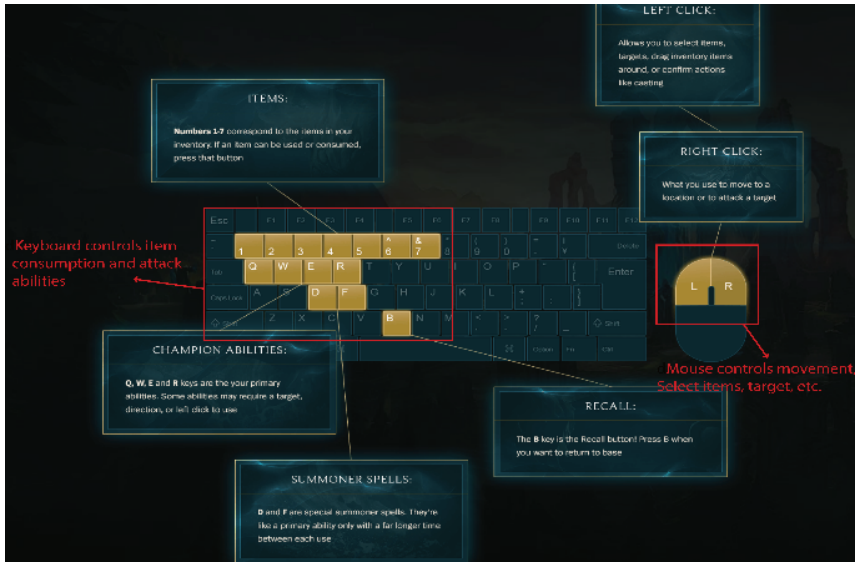

Figure 2: The input control method for LoL

Besides the differences between input control methods, several game mechanics that are common in MOBA games on PC platforms such as LoL have been adapted for KoG to be more playable on the mobile platform. First, all players have full vision

of the map, which means players don't need to place wards and fight to gain vision of the map during the game. However, KoG provides another mode called the "fog mode," in which players could experience the fog of war just like in LoL. Second, the number of abilities of each champion is reduced from five in LoL to four in KoG, and the required level to learn the most powerful skill of a given avatar is reduced from Level 6 to Level 4.

Social Interaction Design

While LoL players need to register for accounts to log in, and must either acquire other players' IDs to add them as in-game friends, or add friends by linking the game accounts to social media accounts (see Figure 3(a)), KoG has omitted these tedious tasks by allowing players to log in using either a QQ account or a WeChat account. QQ and WeChat are the two most popular instant messaging applications in China, both of which are developed by Tencent. Thus, players can communicate and play with their friends on social media immediately after logging in, and they can send daily gifts to their friends, and invite their friends to play together (see Figure 3(b)) (KoG, 2018). Additionally, KoG incorporates the mentoring and relationship systems of massive multiplayer online role-playing games (MMORPG). In the mentoring system, an experienced player could join forces with a new player to help new players quickly become more familiar with the game, and gain experience and rewards by completing specific tasks together. In the relationship system, players could build different relationships, such as a "romantic partnership" or "close friendship," with other players, based on their closeness in the game. Special game effects will appear in the game when they play together.

Figure 3: Interface of the Friends tab: (a) in LoL (top: in English and Chinese); (b) in KoG (bottom).

Tutorial Design

LoL provides complete tutorials in which players are introduced to all necessary information at the beginning of the game. The tutorials include a basic tutorial and battle training (see Figure 4(a)). The basic tutorial teaches the fundamentals of LoL, such as how to move and how to attack, and battle training teaches advanced skills such as how to ambush and get jungle buffs. Players can repeat these tutorials to gain more experience. The tutorials usually use pictures and videos to illustrate the gameplay in both LoL and KoG (see Figure 4(b) as example). Different from LoL, KoG provides a series of interactive tutorials for new players to learn and practice (see Figure 5(a)) (KoG, 2018). The tutorials are presented in multiple sections. Players can focus on certain skills by repeating the specific section instead of going through the whole tutorial. In addition, KoG provides an incremental reward task structure that helps them become familiar with the game mechanics and environment, with careful scaffolding (see Figure 5(b)) (KoG, 2018).

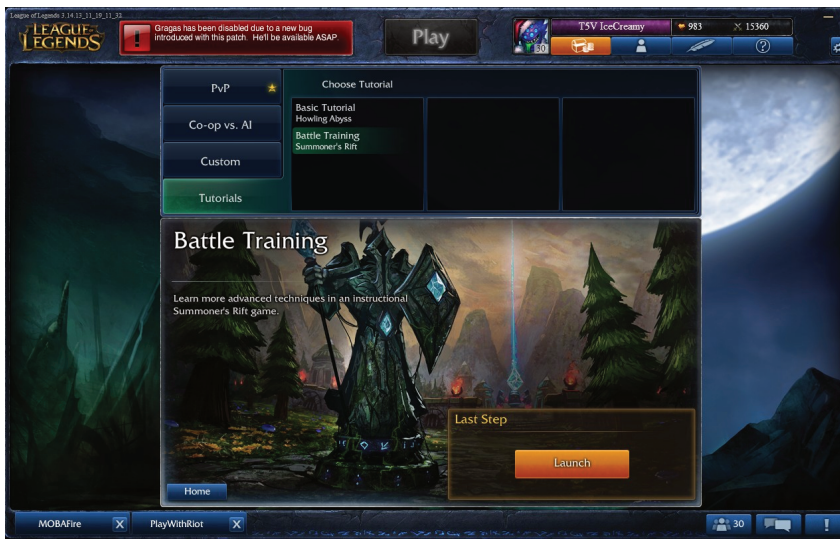

Figure 4: (a) Two training tutorials in LoL (top);(b) gameplay instruction in the tutorial of LoL (bottom).

Figure 5: (a) Series of interactive tutorial in KoG (top); (b) incremental reward task structure in KoG (bottom).

FINDINGS

Based on our analysis of game design and interview transcripts, we identified the lower barrier to entry, mobility, sociability, and avatar perception as key factors that drove people to participate in KoG. Additionally, we compared the interview results in terms of gender differences and tried to explore the connection between these factors and gender.

Lower Barrier to Entry

As opposed to casual games, MOBA games typically feature a steep learning curve at the beginning (Gao et al., 2017). It usually requires a lot of time dedication and discipline from the player-base. In order to win, players usually practice a lot and spend large amounts of time on the game. Thus, it is very difficult for new players to get comfortable with the game.

Design for casual gamers

By reducing the difficulty level of the gameplay and input control, as described in the Gameplay Design section, Tencent Game developers made the game easier for players to learn. These changes also reduced the time required to play one round of KoG. In our interviews, all participants mentioned that KoG was very easy to learn, the game control was simple and intuitive, and it had a shallow learning curve. Participants also reported that the interactive tutorial series, the incremental reward task structure, and the mentoring system made KoG easy to learn for the new players.

> *P2 (M, 24): "KoG is easy because the virtual joystick is highly fault-tolerant, which could provide a good gaming experience to most players."*
>
> *P6 (M, 28): "I think the mobile gameplay is very convenient and simple compared to PC. KoG also requires fewer playing skills and strategy, and is friendly to new players."*
>
> *P7 (F, 23): "KoG is much easier than LoL. It enlarges the cast area of effect of champions and provides functional tutorials for new players. Therefore, new players could get in very fast."*
>
> *P10 (F, 20): "My friends all recommended KoG to me. I was not interested in MOBA games before, (but) since KoG is much easier to control and play, I tried and found it pretty interesting."*

Six out of eight female participants that we interviewed were novice MOBA players, whereas six out of eight male participants were experienced MOBA players. While we only interviewed 20 participants, these findings are consistent with the statistical trend that KoG is attracting many more new female gamers to play the game.

Frustration in certain serious gamers

Although KoG lowered the entry barrier for mobile players to broaden its audience, it frustrated players who preferred the traditional style of MOBA games. For instance, there were four participants (two women, two men) who chose to play MOBA games (i.e., LoL, DOTA) only on the PC platform. When asked what prevented them from playing KoG, they provided the following rationales:

> *P13 (F, 27): "I do not play KoG because it is not fun to me. I like to play LoL because it requires more serious strategy and teamwork. I also think the screen on the mobile phone is too small for MOBA games to gain complete control."*

> *P16 (M, 27): "I don't play KoG mainly because there are too many terrible teammates. Since KoG decreased the gameplay difficulty, a lot of players only play for fun. They don't care about the teamwork or win rate, which destroys my playing experience completely."*

We also found that the demand for game complexity and the attitude towards gameplay varied among male and female players playing on the PC versus mobile platforms. Some of our participants made the following comments:

> *P2 (M, 24): "Although KoG has more players and gross than LoL, it can't take LoL down. They have different target users. LoL is more about strategy and teamwork whereas KoG is for social and entertainment."*

> *P4 (M, 25): "I think KoG can't replace LoL because they have different target users. LoL players usually those who have more time to play, and KoG is opposite.*

> *I could gain more self-gratification in long-time playing."*
>
> *P19 (F, 24): "KoG might take away some market share from LoL, but it will not replace LoL. It is because users have different needs, so these two games would have their own core users and market."*

Our research supports previous findings that players have different motivations toward gaming, especially among players with different levels of time dedications (Hartmann & Klimmt, 2006; Royse et al., 2007; Yee, 2006; Shaer et al., 2017; Yee, 2016). Serious gamers (people who dedicate much time to playing non-casual games) such as P13 (F, 27) and P16 (M, 27), usually demand games that present significant difficulties and challenges. In our findings, serious gamers, both female and male, wanted the game to be complex and wanted their teammates to be dependable. However, most casual gamers play games to pass time or to socialize with other gamers, so they want the games to be less difficult and time consuming. Therefore, for serious gamers, mobile platforms might not be a good platform for them to play. Our findings also support the result of previous research that found female players who spent more time on gaming were more likely to play on a computer or a console than on a mobile phone (Shaer et al., 2017).

KoG developers made a conscious decision to sacrifice complexity for playability on mobile devices to broaden its appeal to the public. Such a tradeoff is considered to be positive for both female and male players who prefer social and casual games, which require less time dedication, although female players, being the majority, are likely to be more affected. However, it may be less desirable to serious gamers, who prefer more complex games that are more demanding.

Mobility

Smartphones are highly portable, and are carried by most people at all times. Mobile games, particularly casual games, are often used to pass time (e.g., while commuting on public transport). ESA reports that Americans spend one-third of their commuting time playing games on mobile phones and tablets (ESA, 2016). Therefore, designers of mobile games must take into account the ever-changing context and mobile nature of the environment. In adapting LoL on PC to KoG to the mobile platform, the game design removed some features to reduce the total time cost for each round of the game to accommodate the mobility aspect of mobile platforms. Our female participants indicated that the mobile nature of smartphones also makes it easier for them to play without the limitations of location and device hardware that PC gamers usually face.

> *P8 (F, 23): "I like KoG because it takes less time for each match. It is not like PC games, which take a long time, and it has less delays."*

> *P13 (F, 27): "The mobile game requires less time, which is good for killing time. LoL takes a longer time commitment to set up and play, so it is more difficult to get into the game when you're constantly on the go."*

> *P19 (F, 24): "It takes less time to play one round in KoG, and it is also very convenient to play using a smartphone because it's always with me."*

The mobile feature also makes it possible for people to meet up and play the game together in a collocated fashion. This collocation would facilitate the frequency and quality of communication between players, which leads to higher team performance (Huffaker et al., 2009). Both the male and female participants mentioned that they prefer face-to-face

communication while playing, so they usually gather together first before beginning play.

> *P3 (M, 26): "I usually communicate with my teammates face to face, and we usually meet first then play together."*
>
> *P4 (M, 25): "I play with my friends most of the time, and we always communicate offline."*
>
> *P10 (F, 20): "I usually play with my friends if we meet in person."*
>
> *P12 (F, 24): "It is really fun to sit next to my friends and play KoG together."*

PC platforms usually face many challenges regarding team communication. For example, verbal communications are usually accomplished through text and voice chat. However, text chat is distracting in time-limited competitive games (Innocent & Haines, 2007), and players might find it difficult to type while controlling the avatars. Despite occasionally poor voice connection quality, voice chat sometimes causes players confusion over who is talking (Halloran et al., 2004), especially when mixed with game sounds (i.e. background music, sound effects).

Although the mobile platform provides more mobility, convenience, and communication to players, it causes other unintended consequences that could negatively impact the gameplay experience. Our participants mentioned that people dropped offline on the mobile platform more frequently than in traditional MOBA games like LoL.

> *P5 (M, 27): "There are always people who would drop offline intentionally. Some of them might've encountered a network problem, but some others just quit during the game because they have to go. It is much more common to quit on the mobile phone."*

> *P6 (M, 28): "I know there are some players who drop offline due to being interrupted by friends, poor network connection, incoming calls, and battery issues."*

To avoid this problem, P9 uses the tablet to create a better gaming environment for KoG:

> *P9 (F, 26): "I usually play on my tablet, because sometimes there are incoming calls to my mobile phone while I am playing, which is annoying. In addition, sometimes the network is poor on my mobile phone, and the WiFi connection on my tablet is much more stable."*

The mobile nature of smartphones makes it more convenient for players to play a quick round of KoG while being on the go, which makes it more attractive for casual gameplay and for many female players. However, connectivity, hardware, and interruption issues could all affect the gameplay experience of all players in significant ways.

Sociability

Sociability is a key, if not the most important, feature when playing multiplayer games. ESA reports that Americans are increasingly relying on multiplayer games as a means to socialize with their friends, family, and spouse (ESA, 2018). It reveals a high preference for social gaming by Americans, with 55 percent of the most frequent gamers in the US believing video games help them connect with their friends, and 46 percent believe it helps their family spend time together. Specifically, people in China have formed a lifestyle of mobile socialization, and 10.5 percent of the mobile social time was accomplished through mobile gaming (QuestMobile, 2018b). Prior research found that both female players (Hartmann & Klimmt, 2006; Inkpen et al., 1994; Lucas & Sherry, 2004; Phan et al., 2012; Royse et al., 2007) and male

players (Olson et al., 2008; Yee, 2006) prefer games with the support of social features. Specifically, in Royse et al.'s (2007) research, female players consider social features more important than violent and gender-stereotyping gaming features.

Socially-focused Play in Friend Circle

KoG supports social interaction by leveraging social media account logins to tap into the player's existing social network. It provides random game matches between friends, allowing players to choose to play with friends or strangers. In addition, it incorporates social interaction design features, such as a mentoring system and relationship system, to encourage communication, interaction, and coordination among players. Furthermore, KoG provides periodical milestones in each round of matches, such as MVP and Penta Kills, that can be shared on social media (e.g., moments in Wechat). KoG can form a competitive mechanism between a circle of friends and a gamer circle, which facilitates the interpersonal spread of the game. These social features not only enable gameplay between close friends, but possibly strengthens the connection between social acquaintances when games are played together.

About 90 percent of the participants in our study played MOBA games with friends, and those who only played KoG (six women, two men) reported that they were introduced to playing KoG because most of their friends were playing it. Specifically, both of the female and male participants regard it as a social game, which helps them hang out with their real friends.

> *P1 (M, 21): "I play KoG for social reasons; it is interesting only if I play with the people I am familiar with."*

> *P5 (M, 27): "I play KoG mainly because I can play with many friends, which is fun."*

> *P7 (F, 23): "I think KoG is really good for socializing, I play it with my roommates all the time at first, then I play with my friends who I haven't been in touch with in a long time."*
>
> *P9 (F, 26): "I usually play with my friends. We usually play when we hang out together."*
>
> *P19 (F, 24): "I think KoG is a social method. For example, friends could play together while waiting to eat in a restaurant. It could get a lot of social-driven players like me."*

Although we cannot claim that female players use KoG as a way to socialize more than male players, social play with real friends is especially attractive for novice female players who are new to the game. These novice players are casual gamers who prefer casual games and puzzle games, or have very little gaming experience. While many started playing KoG to socialize with their friends, it is possible for them to gain interest and become serious gamers over time. It is also possible that some female players are "competitive game neophobic", meaning that they fear playing competitive games due to the gender stereotypes (Richard & Hoadley, 2013; Vermeulen et al., 2014; Ratan et al., 2015; Shaer et al., 2017). As the female participation in KoG rises, more serious female gamers may emerge due to the equalizing number of both sexes in the game.

Less in-game conversations with strangers

Strong sociability means more interaction and communication, which has some side effects, and "toxicity" is one of them. Prior research claimed that the gaming environment is especially toxic for women (Gray, 2012; Yee, 2014; Nakandala, 2016; Ratan et al., 2015; Taylor et al., 2009; Tang & Fox, 2016; Shaer et al., 2017; Salter & Blodgett, 2012). The toxicity usually includes aggressiveness, hostility, offensive verbal attacks, and trash talk

from strangers over voice or text chat, which forced many female players to quit the game (Salter & Blodgett, 2012; Shaer et al., 2017). Our findings show that playing KoG on mobile devices can reduce the in-game conversations, which in turn reduces toxic encounters. Our female participants provided several reasons that explain the lower level of toxicity in KoG. In LoL, people could type via keyboards. In KoG, in addition to being collocated with friends, people could also choose in-game chat, either in text or voice. However, it is more difficult to type using the touchscreen because KoG is played on mobile devices. In LoL, people usually play in private places because it is played on PCs. The environment allows them to communicate with their voice using chatting software, such as Skype and Discord. In KoG, people tend to play in public areas in the presence of other people who might not be playing the game (e.g., during school lunch breaks, work breaks, etc.). Playing in the presence of others makes using voice chat less convenient. In addition, similar to the voice chat in LoL, KoG's voice chat can also be prone to poor voice quality.

> *P11 (F, 24): "My hands are always busy playing, so I don't have the time for typing in the game. Also, I sometimes play KoG during my work break, I don't want other people know I'm playing…"*

> *P12 (F, 24): "Many people play KoG in public places, such as work break, instead of gaming environment or private space, then it is not proper to do voice chat."*

> *P20 (F, 26): "I think the gaming environment of both LoL and KoG are getting better. LoL probably because less people are playing it, and KoG is due to the inconvenience of in-game communication."*

Our female participants also reported that the complexity of KoG is less that of LoL, which makes it less necessary to communicate during gameplay.

> *P11 (F, 26): "I heard from others that LoL is very difficult, which needs more communication during the game, no matter texts or pings… So I only play KoG."*
>
> *P19 (F, 24): "I usually play with my friends, and I don't usually communicate when I play alone. I don't think it is necessary except you are playing a top–ranking match just like the matches in LoL."*
>
> *P20 (F, 24): "It is easier than LoL, so there's no need to communicate when I'm playing with strangers."*

With less in-game communication, there is less chance of encountering strangers who treat female gamers with hostility. The lack of in-game communication also makes it easier to conceal one's gender during the game. Five out of eight male participants who play KoG reported that they couldn't figure out the gender identity of other gamers, although P1, P2 and P6 expressed that they could infer the gender from a player's in-game ID and profile photo.

The ability of Tencent Games to turn a competitive MOBA game like LoL into a more social game is instrumental in encouraging female participation in KoG. It not only encourages female players to play with their friends, but affords female players a less toxic gaming environment.

Avatar Perception

Previous research has found that avatar appearance affects players' in-game performance (Peña et al., 2009; Yee & Bailenson, 2007; Gao et al., 2017). The champions of LoL are designed in a fictional fantasy context. As previously mentioned, the avatar design in KoG is based on well-known historical figures or fictional characters in fantasy novels, which might encourage people to play due to their familiarity with the characters. Based on a report from Penguin Intelligence (PI), which is a research institute owned

by Tencent, female players in KoG care more about champion appearance than male players, which is consistent with previous research results (Gao et al., 2017). Male players in KoG care more about historical context of the champions than female players (PI, 2017).

In our study, two female participants (P8, P20) and one male participant (P17) mentioned that they wanted to play the game because they liked the aesthetics of the champions in KoG. Besides aesthetics, two of our male and female participants (P8, P18) mentioned that they were attracted by the Chinese historical contexts of the champions. Although we interviewed only 20 participants, these findings could help explain why KoG is popular among Chinese gamers.

> *P8 (F, 23): "I like KoG because the champions are relevant to the Chinese culture and are very good-looking."*
>
> *P20 (F, 24): "I like the champions in KoG because they are adorable, and both the skins and the skill effects are amazing."*
>
> *P17 (M, 22): "The reason that I started to play KoG was that my friends had posted the pictures of Xiaoqiao (Chinese name: 小乔) and Daqiao (Chinese name:大乔) (female champions in KoG) on Wechat, and I think they are so good-looking."*
>
> *P18 (M, 23): "The champions in KoG, are based on historical figures, which make me feel at home."*

Avatars generated from well-known historical figures establish a connection between avatars and players. This connection might result in a more comfortable playing environment, which attracts people to play. Moreover, the avatar appearance influences players as well. Avatars designed with high aesthetics are more likely to attract both female and male players to play in China.

Conclusions and Future Work

This paper explores the main factors that drive female players to participate in KoG, in a study that involved game design analysis and semi-structured interviews of 20 experienced MOBA players. We provide an analysis of the game in terms of gaming mode, game design, and the gaming culture, and draw comparisons with LoL. We also provide a general understanding of KoG that has not been previously reported in gaming literature. Based on our analyses, a lower barrier to entry, mobility, sociability, and avatar perception are the main factors that led to the increase in female participation in KoG. The lower barrier to enter KoG results from less time dedication and lower level of complexity. Novice players would not continuously get frustrated in the course of learning the game and by losing games to experienced players. Therefore, game designers should consider adjusting the "deepness" of the game to attract more players. To avoid frustrating serious gamers, game designers should also consider adding features that have an element of randomness, to appeal to more players.

Recently, online multiplayer Battle Royale games, such as *PlayerUnknown's Battlegrounds* (Bluehole, 2017) and *Fortnite* (Epic Games, 2017), have become extremely popular. This kind of game, which is packed with a high degree of randomness, can increase the possibility of wins for novice gamers, as well as bring some uncertainty, fun, and tension to the game. Therefore, it has the potential to attract more players to participate in the game.

By comparing the responses of female and male participants, we found that female players are more likely to be attracted by the mobility and sociability in KoG, compared to male players. Females feel comfortable playing KoG because they encountered less trash talking and hostility, unlike LoL. Female players are more likely to be introduced to a game and to play with their friends using mobile devices. Serious female players, however, might focus on PC platforms for high gaming complexity. Therefore, game designers should consider the features of different

platforms during the design process. For games on PC platforms, as the mobility is limited, game designers could focus on improving the sociability of games by providing more social interaction functions for players, such as the mentoring and relationship systems in KoG. Furthermore, PC games could also provide more game modes at different levels of difficulty. Less gaming complexity not only lowers the barrier of entry for novice female players, but also reduces unnecessary in-game communication with strangers. Lessened communication with strangers also allows female gamers to more easily conceal their identity, which decreases the toxicity during gameplay. Moreover, game designers could also make efforts to improve avatar designs. Avatars with appealing aesthetics and backgrounds that people are familiar with are more likely to engage female players. For games on mobile platforms, besides maintaining the current mobility and sociability, game designers should also consider offline problems, such as low battery and poor network connections to enhance experiences for players. Beyond that, game designers should consider player motivation and the factors uncovered in this study to create more socially inclusive games. The design considerations proposed in this study are essential for making games more friendly and inviting to female players. This study not only introduces KoG, a popular mobile MOBA game in China, to a wider audience, but reveals possible factors affecting female participation in MOBA games and casts light on new research directions. The findings of this research could inform game design in other game genres that have similarly low female participation rates, especially in multiplayer competitive team-based games.

There are some limitations in this study. First, we only involved 20 participants; future studies could involve more participants to confirm and generalize the findings. In terms of demographics, our participants were all under 30 years of age, which means the findings of this study may not apply to older gamers. Furthermore, we did not account for factors such as time availability to play video games. The ability to play a quick game on the go on mobile

devices may be even more important for people who may have less time to play video games.

Recently, Tencent released the international version of KoG called *Arena of Valor* (AoV) (Tencent Games, 2018), previously called *Strike of Kings*. The AoV avatar designs and gameplay are different from KoG. Future studies could focus on comparing AoV with KoG and LoL to unpack differences in cultural influence and how game design could impact female participation at the international level. Furthermore, AoV has also been released on Switch, a video game system developed by Nintendo. Therefore, future studies will be conducted exploring other user-related design features on more diverse platforms.

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4.

Playing Whiteness in Crisis in The Last of Us and Tomb Raider

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ABSTRACT

This paper examines the white normative figure under duress, through videogames that present a crisis in American narratives of progress: *The Last of Us* (Naughty Dog, 2013), set in a melancholic post-apocalyptic U.S.; and *Tomb Raider* (Crystal Dynamics, 2013), a reboot of the now-classic Lara Croft narrative that recasts the heroine as desperate and far from invincible. Using

key concepts from critical whiteness studies, popular panics around the demographic shifts in the U.S. away from a white majority, and Richard Dyer's theorizations, I show how "making whiteness strange" can decouple it from the normative, and rescue it from unattainable ideals and self-annihilating tendencies. Running the gauntlet between representing universal humanity and traumatized victimhood, whiteness in games takes a beating within a fraught post-9/11 and post-Obama moment of national transition. Through critical analysis of identity politics around whiteness in video games, larger cultural stakes are revealed.

Keywords

white, whiteness, last of us, Tomb Raider, Dyer, intersectional, culture, cultural studies

INTRODUCTION

This paper examines constructions of the white normative figure under duress, and particularly, an amassing crisis in relation to crumbling dominant Western narratives of progress. The primary game in question, *The Last of Us* (Naughty Dog, 2013), portrays a melancholic vision of a post-apocalyptic United States, two decades after an outbreak of "infected"— humans overcome by an airborne fungal pandemic. As the fungus spreads in their brains and slowly takes over their bodies, they are rendered progressively more deformed and rabid. Scrappy factions of survivors operate in desperation, set against a horrific backdrop of civilization gone feral. In this game, the future is sublime and bleak and terrorizing, and it won't be over quickly. *The Last of Us* has become iconic as a beleaguered, mournful magnum opus, in relation to a cultural moment of anxiety around the United States as an embattled superpower under the dual pressures of economic globalization and environmental catastrophe. In a second example, a cinematic survival action-adventure *Tomb Raider* (2013), iconic white female protagonist, Lara Croft, is reconfigured from her

indomitable super-archaeologist-adventurer status into a figure much more vulnerable, surely capable but clearly imperiled. Lara Croft is also a character almost universally discussed in terms of *gender*; this overburdens possible readings of the character a great deal, for obvious reasons. But, considering the revamped Croft through an analysis of whiteness constitutes intervention that opens up new possible interpretations, for both the *Tomb Raider* heroine and for an aesthetics of ambivalence that seems to mark some of the most iconic titles in mainstream games today. And like *The Last of Us*, there is a narrative of loss, disempowerment or disadvantage, of things going horribly wrong. There exists a tension between the figure and a hostile, brutal or unrelenting environment. In short, this paper scrutinizes a moment of self-consciousness in regard to the interruption of heroic protagonists, as exemplified by these two dominant games that so strongly feature beleaguered forms of whiteness.

I largely focus on constructions of whiteness in visual culture as theorized by film theorist Richard Dyer, alongside critical whiteness studies by scholars like sociologist Ruth Frankenberg and others. Through detailed formal analysis and careful attention to these paradigmatic examples, I critically deconstruct the "normative" invisibility of whiteness and its functioning within mainstream games, at a critical historical juncture in which whiteness is in crisis. The questions posed are, then: within the cultural context of their development and release, how do these mainstream games represent whiteness? How is whiteness seen in them? And what does this tell us about the prevailing sentiments in a fraught cultural moment in which power dynamics are shifting? This should not be confused with unilateral statements (that I would never make) regarding a group of people that one might collectively call 'white'. And, this does not have to do with presumptions of what individuals within that group might be thinking. This has everything to do with *systemic* issues of representation and cultural construction, and observation of the visual politics at play, as it relates to an ideological construction of whiteness.

These games tap into a larger cultural malaise arising from the changes occurring within a U.S. context. That is to say, in the following discussion of whiteness in relation to the games in question, it should be understood that I see whiteness not as "invisible" or "empty" or normative, but as occurring within the context of a dominant culture that is in fact intensely aware of whiteness, and an entertainment industry that is likewise tuned in to what will resonate with the dominant market.

THE LAST OF US

The Last of Us presents a scenario steeped in loss, melancholia and an aesthetics of ambivalence. It tells the story of Joel, a white working man and single parent, and his pale, slight, blond daughter, Sarah, with whom he has a close relationship. It is clear that Joel has long, strenuous workdays, and is under duress—he is not well-off and is clearly represented as doing his best despite the odds. Initially playing in the third person as "Sarah", players wander the domestic space and learn from contextual clues and secondary characters that their Austin neighborhood is in turmoil, and in fact the problem goes far beyond their location, having spread to both national coasts. An aggressive infection is spreading that renders those who contract it violent. In the aftermath of a car accident that occurs in the chaos, the player character role switches to Joel, as he tries, unsuccessfully, to protect his injured daughter from the pandemonium ensuing. Sarah is mistakenly shot by a soldier who has been ordered to execute the potentially infected, and she dies in Joel's arms. Even though all this happens in the dark of night, her skin and hair glow inordinately in relation to the other characters, who are male.

In the aftermath of these events, the player is reintroduced to the primary playable character, Joel, some twenty years later. He is now a smuggler, and a much more disheveled, worn down figure to whom far too much has happened. We find him in a post-apocalyptic Boston that is a crumbling police state. The 'new

normal' is a daily existence of scavenging and desperation, barter and bribery, limited resources and survivalism. Alongside a female companion named Tess, who initially acts as a guide for the player through the perils of the militarized zones and quarantined areas, Joel grimly traverses the environs. As an action adventure survival-horror game, stealth, puzzle-solving and effective utilization of the environment are key, but the game also uses a crafting system that allows for the development of weapons from found objects, in addition to guns and other arms. Killing is a core mechanic, although it is framed mostly as grim and necessary for survival, rather than spectacularized and heroic. While it is immediately clear that Joel is resourceful and jaded enough to address his circumstances pragmatically, he (as the playable character) is clearly traumatized and endangered. His look and manner are consistent with mainstream representations of a "heartland" American male: presumed straight, Caucasian, shortish dark hair and beard, assertive carriage, able-bodied, and wearing a western-style shirt and jeans. He doesn't talk much, and is acerbic when he does.

After a series of scenarios that function as veiled in-game tutorials on controller usage, and to relay content that contextualizes the aftermath Joel lives in, we meet Ellie (voice and motion capture by Ashley Johnson). She is fourteen years old, and a precocious, dark-haired, wide-eyed vulnerable young white tween who predictably invokes the memory of his lost daughter, Sarah. She is the new externalization of his seriously compromised sense of hope. Protected by a revolutionary militia called "The Fireflies", who mysteriously deem her important, Ellie becomes the precious cargo Joel and his partner Tess are enlisted to smuggle safely away from the Boston quarantine zone. Tess is lost soon after, and the remaining gameplay mostly consists of the odyssey undertaken between Joel and young Ellie to ferry her to safety and fully understand her significance to the militia. Along the way, Joel and Ellie grow close as they face tremendous peril, hardship, loss, failures and ethical quandaries.

CULTURAL CONTEXT: WHITENESS AFTER 9/11

My use of the term "whiteness" is not one of simple classification of skin color, but a term that has come to define a much more phantasmagoric position that takes into account ideological dimensions of meaning ascribed to this complex construction. Whiteness studies, or what has subsequently been called "critical whiteness studies" arose from postcolonial and postmodern theory made popular in the 1970s and 1980s, with a strong surge in the U.S. in the 1990s. As Tyler Stallings summarized this moment, "vocabularies and strategies had developed based on the notion that forcing the dominant culture to recognize itself—to *name* itself, when for so long it had claimed to have no name—was the first step toward dismantling it."(Stallings, 2003, 17) Ruth Frankenberg, outlines three key facets of whiteness: "First, whiteness is a location of structural advantage, of race privilege. Second, it is a 'standpoint,' a place from which white people look at ourselves, at others, and at a society. Third, 'whiteness' refers to a set of cultural practices that are usually unmarked and unnamed."(Frankenberg, 2000, 447) She goes on to discuss the ways in which naming whiteness displaces its "structured invisibility", reconnecting it to complex histories of colonialism, imperialism and assimilation; it productively racializes whiteness; and it opens up possibilities for antiracist whiteness."(Frankenberg, 2000, 451)

There are many and disparate approaches to critical whiteness studies, most of which are associated with Frankenberg's delineations, but which also study other dimensions of the subject such as white privilege (Lipsitz, 2006), the stratification of various groups according to race and its effects, ontological questions of whiteness, and the connections between race and power. (Brander Rasmussen et al., 2001a, 6) While there are numerous intellectual resources in many established disciplines that engage with whiteness, I focus primarily on interventions in visual culture, as well as a uniquely post-9/11, and subsequent post-Obama election

moment of anxiety in which the stability of white heteronormative patriarchy is threatened.[1]

The perception that something has changed in terms of white dominance, has taken hold, and "we live in a time when many White Americans perceived themselves to be living in an increasingly 'Brown' America in which they will soon be outnumbered and in which 'being White' is given less overt cultural significance. For these White Americans," Thomas Ross observes, "it is a time of racial anxiety." (Ross, 2005, 225)

The World Trade Center bombings in New York on September 11, 2001, referred to as "9/11", complicated this sense of white racial anxiety further, by traumatizing the public imaginary of white America through, among other things, the ideological configuration of the victims of 9/11 as white firefighters and white Wall Street business people caught in the towers. (Ross, 2005, 235) Of course, the reality was much more diverse—especially given the international melting pot of New York. Nevertheless, there emerged a strong binary opposition between white "heartland" (i.e. straight and Christian) authentic American families, and Arab-looking (i.e. Muslim) men, whose resemblance to the hijackers of the doomed planes installed a new fear into the hearts of white America. The mass media incessantly covered the losses of families that conformed to the flag-flying, white picket-fenced, white ideal that came to stand in for all victims of the tragedy. Images of the Twin Towers collapsing were looped on the news, while pre-existing images of the towers were scrubbed from popular culture so as to avoid distressing Americans while the nation healed. If there was any doubt about the global attack on an American "way of life", this event was politically managed to effect an absolute nationalist, jingoistic sentiment that has religious, cultural, and racial overtones. (Ross, 2005, 238–40)

1. Among the many notable considerations of whiteness see: (Morrison 1993; Frankenberg 1993, 1997; Delgado and Stefancic 1997; Daniels 1997; Wray and Newitz 1997; Hill 1997; Hale 1999; Jacobson 1999; Berger 2000; Kincheloe et al. 2000; Brander Rasmussen et al. 2001b; Katznelson 2006; Roediger et al. 2007; Painter 2011; Wise 2011; Allen 2012; Rothenberg 2012; Gallagher and Twine 2013)

This perspective is similarly supported and enhanced by Frankenberg, who, in the same year, wrote "Cracks in the Façade: Whiteness and the Construction of 9/11" which connects the nomenclature around this event with ideological connections to whiteness and "narratives of innocence, goodness, Godliness and strength." (Frankenberg, 2005, 559) Ultimately calling attention to how "alongside national self-importance, sense of entitlement and the actuality of US military and economic might, is a brittle and fragile sense of nationhood which easily senses danger everywhere", Frankenberg entreats readers to honor the dead by not imbricating them in false narratives of whiteness and Americanness. (Frankenberg, 2005, 569)

Complicating this is the reality that whiteness, in an American context, has shifting associations which fluctuate between: a racial categorization, an ideology of power relations, a Western term of normativity, an "empty" signifier for lack of authenticity or ethnicity, a marker of violence and terror for some, and an extension of an institutionalized and pernicious form of categorization installed during European colonial and imperialist expansion. (Brander Rasmussen et al., 2001a, 10–13) This is shored up through visual culture, of which video games are now a part, and it is through analysis of these forms of dominant culture that insight can be gained.

DYER'S WHITENESS

Insofar as visual culture is concerned, Richard Dyer's *White* is most urgent for this discussion, though the author never specifically addresses video games. Surveying a broad array of Western image-making practices such as photography, cinema and print media, Dyer presents a clear-eyed assessment of images that purport to present "nonparticular" (i.e. white) identities by underscoring their particularities and addressing the underlying presumptions that accompany their imaging. (R. Dyer, 1997) This text is key for my own analysis of the two games in question,

although, given their playable dimensions, I expand upon the innovations of Dyer in constructive ways for the medium.

Dyer unpacks the normative and "invisible" nature of whiteness in both representation and the ways in which the visual is spoken of. While the film scholar clearly identifies that "the privilege of being white in white culture is not to be subjected to stereotyping in relation to one's whiteness," he also points out the contradiction that this perceived sense of being the normative, betrays a persistent and underlying fixation with whiteness. (R. Dyer, 1997, 11)

The nonparticular status of white identity as normal or universal identity subsequently described is often perceived as unthinking or oblivious in its usage. However, importantly, in his book-length examination of whiteness, Dyer does not let those engaged in so-called 'normative' representation off the hook; rather than excusing them on the basis of ignorance, he points instead to the self-consciousness of these representations:

> most of the time white people speak about nothing but white people, it's just that we couch it in terms of 'people' in general. Research—into books, museums, the press, advertising, films, television, software—repeatedly shows that in Western representation whites are overwhelmingly and disproportionately predominant, have the central and elaborated roles, and above all are placed as the norm, the ordinary, the standard. (R. Dyer, 1997, 3)

He discusses whiteness in terms of its tremendous instability, the fluidity with which certain ethnic groups, like Jews and the Irish, may have held different positions in terms of the color hierarchy, as a means to police the privileges whiteness affords. (R. Dyer, 1997, 48–57) Pulling away from a discussion of whiteness as "white ethnicity", and certainly not white nationalism, he is instead deconstructing whiteness itself and conceiving of how it can be possible to go about "making whiteness strange". (R. Dyer, 1997, 4) Covering a history of the term (in accordance with several cited venerated scholars, including Winthrop Jordan and Martin

Bernal), he finds the modern origination of the term "white" to be connected to the American colonies, and deeply imbricated in the Christian tradition. (R. Dyer, 1997, 66) It is all innocence, purity, cleanliness and beauty; but the logical outcome of the ideal of whiteness is ultimately unattainable and self-annihilating.

THE LAST OF US AND IMPERILED WHITENESS

The impossible, imperiled position of whiteness is embodied in Joel, the bedraggled protagonist and primary playable character of *The Last of Us*. He is self-consciously normal and "everyman" in his manifestation, possessing neither superhuman powers nor the skills of a supersoldier. He is vulnerable, emotionally shut down and compromised, definitively an anti-hero. At some point in the narrative, his young partner, Ellie, takes on the protector/provider role after he is seriously injured. Several extended analyses of this game utilize a feminist approach that variously interprets the game as either propping up gender norms or displaying a sense of mourning toward the loss of heteronormative unity. (Joyce, 2014; Voorhees, 2014)

Joel is in many ways a cypher for the so-called American average hardworking man, come to the end of his rope and emptied out of his inherent value in a society that has changed around him. Dyer's examination of this male everyman type is best exemplified in his analysis of the 1993 crime drama directed by Joel Schumacher, *Falling Down*, which describes the events in the day of an "ordinary" middle class man (to be read as *white* man) who finds himself at war with the "everyday world" (to be read as the increasingly diverse world) and descends in to a nihilistic meltdown after losing his job, his family and his sense of purpose.[2] In the case of this film, it is exactly the main character's ordinariness through which the anxieties around the endangered nature of the white man comes into focus: "*Falling Down*'s success may derive from its expression of the state of play in

2. From the promotional materials to the film. See:(Schumacher 1993; Gabriel 1996)

the contemporary construction of whiteness, between a renewedly respectable supremacism, the old everything and nothing-in-particular hegemony and the fear of an annihilation that will be the realisation of our [whites'] emptiness."(R. Dyer, 1997, 222) Importantly, the *Falling Down* model of white masculinity ideologically melds ordinariness and a constructed alterity, something that is repeated to excellent effect in *The Last of Us*. Dyer ultimately summarizes the film as "an allegory of the death of the white man, or at any rate, the white man as endangered species."(R. Dyer, 1997, 217) Teetering at the mouth of this gaping emptiness, Joel of *The Last of Us* demonstrates a similar disorientation, but it comes in the form of a deathward-looking melancholia that is staved off for the purpose of protecting Ellie against a hostile environment.

In the case of *The Last of Us*, this is exemplified in the glowing white, blond Sarah (daughter of Joel), whose life is lost in the game's inciting incident. The ineffectual role Joel played in protecting his child is presumably the origin of his bitterness, and this psychology becomes transferred onto Ellie, a surrogate young white girl. While she has more agency, Joel repeatedly refuses to permit her a weapon, and persists in a dynamic through which he is placed in a protectorate role. In one scene, for example, Joel comes across a bow and Ellie asks to use it, proclaiming, "I'm a pretty good shot with that thing." Joel responds, "How 'bout we just leave this kind of stuff to me." Ellie protests: "Well, we could both be armed. Cover each other." Joel admonishes her: "I don't think so." Given that it would be fairly difficult to shoot one's self using a bow and arrow, it is more likely that Joel is attempting to spare Ellie the traumatizing experience of killing. This is emphasized through the various fatherly shielding gestures enacted during gameplay: for example, while crouched together in a cover position, Ellie often nestles under Joel's arm; or, while standing, he protectively places an arm across her body like a barrier against harm. She is also represented as physically diminutive next to his strong stature. She represents the purity, cleanliness of spirit, a normative sense of beauty, and throughout

the narrative Joel's reticence for Ellie to have the agency to kill (by possessing a weapon) strongly signals his desire to preserve that innocence. Eventually this dynamic shifts, but it comes late in the game and only when it is clear that Joel cannot complete objectives singlehandedly.

Describing the specific role of white women in the colonialist fiction, Dyer asserts that they:

> …voice a liberal critique of empire and are in part to blame for its decline. Because of their social marginality and because, when they do do anything, they do harm, the only honorable position for them, the only really white position, is that of doing nothing. Because they are creatures of conscience this is a source of agony. Yet it is an exquisite agony…Women take the blame, and provide the spectacle of moral suffering, for the loss of empire. For this, they are rewarded with a possibility that already matches their condition of narrative existence: nothing. (R. Dyer, 1997, 205–6)

In an uncanny reflection of this very conundrum, Ellie's character, who is born into the post-pandemic space, moves about within the flickering embers of Western culture as an embodiment of innocence – that is, in the absence of her actual usefulness as an agent of society's redemption and cure, she is instead ideologically overdetermined as an externalization of conscience, as Joel's last grasp of his own humanity, and as a youthful figure who symbolizes the very possibility of a future. For much of the game, he is configured as protector, and she occupies the role of a resourceful kid who needs defending. Her expressions of wonder the first time that she walks in the woods, or sees an old record shop, point to a sense of discovery and a freshness in her perspective that Joel lacks. Yet, increasingly, she constitutes a liability for Joel, in that she causes him to deviate from a self-serving routine that has kept him alive. Through gameplay, it is revealed that her role is ultimately to do nothing. And of course, true to Dyer's characterization, she ultimately saves nothing, as well. In this case, Joel shares with her the blame for the downfall of culture through his refusal to allow Ellie's brain matter to be

harvested in the pursuit of a cure. While she is unveiled as a kind of sacrificial lamb, this actual role goes unfulfilled, in no small part due to Joel's unwillingness to let go of her. There is an argument to be made, as well, for the connectedness between the imaging of the ruins of empire, and the female figure, who, according to Dyer, often operates as the embodiment of a critique, while simultaneously being configured as the cause of the downfall itself. Joel is, after all, imperiled by his growing attachment to a girl, who holds the keys to humanity's survival, and who will force him to face insurmountable odds.

One possible reading of the *Last of Us* – as an extension of the apocalyptic narrative of contagion or zombies, is that the foe (virus/undead attacker) represents the externalization of an inner threat. By making it into a targeted enemy that can be identified, isolated and destroyed. In *The Last of Us*, what is enacted again and again – as a kind of technology that is engaged with—is a traumatized, frustrated white masculinity. Gerald Voorhees writes of *The Last of Us*:

> …trauma and loss are the most frequently recurring ideas. Death colors the tenor of the game and defines the most poignant moments of the narrative: Sarah bleeding out in Joel's arms, Tess in a pool of blood on the capitol floor, Bill's lover hanging from a ceiling fan, Sam and the two bullets from Henry's gun, Joel's incapacitation at the university campus, David stealing the last shreds of Ellie's faith in humanity, and of course, the world that died during the open credits and the dream of resurrecting that world that died with Marlene's final plea to Joel.
>
> But it's the death of heteronormativity, heroic masculinity in Joel's case and heterosexism in Ellie's, that some players and commentators can't seem to get over. (Voorhees, 2014)

The latter part of this observation relates to additional downloadable content, called *The Last of Us: Left Behind*, released in 2014. It contains additional narrative around Ellie, and depicts a same-sex kiss between her and another young female survivor,

Riley. Many hailed this moment as a "breakthrough" for its deviation from heteronormativity that is especially pronounced in game representation. (Hamilton, 2014a)

It is true that trauma and loss operate at a frontal position in the game, as Voorhees describes. However, what is also at work is Dyer's theory of "white death": that is to say, that whiteness has associations with "deathliness" (R. Dyer, 1997, 208) and that whiteness is ultimately configured as being dead and bringing death, something that the film theorist goes on to explicate through his interpretation of the zombie film. (R. Dyer, 1997, 209–11) There is a palpable sense in which the configuration of whiteness as purity, otherworldliness, a certain rigidity of body, and pallor begins—for Dyer—to approach the horizon of death as the absolute expression of whiteness. Through his interpretation of "startling images of white people as the dead devouring the dead" it becomes clear that on the ideological level, whiteness as death results in a kind of inevitable, almost hysterical catharsis linked to finally capitulating to the horrors of its own making—something which Dyer identifies as the apotheosis of whiteness itself: "to be destroyed by your own kind." (R. Dyer, 1997, 211) While misery is at the forefront, more central is the notion of whiteness as endangered and fundamentally unsustainable, albeit through its own complex machinations.

In the game, this is relayed in all the ways that Voorhees has described. But it is also self-contained in the very character of Ellie, the white female, who is at once the embodiment of innocence to be protected, the bearer of the moral suffering for the way things have become, and the unwitting cause of the decline of (American) empire. This is illustrated through the final catharsis of the game, in which Joel learns of Ellie's true importance from the Fireflies leader, Marlene. Ellie's purpose, as someone immune to the fungus, is to submit to an invasive brain matter harvesting that would provide key samples necessary for developing a vaccine. Her function, in other words, is to die. This is relayed in a cut-scene in which Marlene (who, according to the narrative, values

Ellie) attempts to convince Joel of this moral position. However, after all that he and Ellie have been through, Joel is strongly bonded to the girl; so he opts to save her.

What follows is extensive combat in which an injured Joel takes on the Fireflies, in a maze-like defunct medical facility, while locating a sedated Ellie and snatching her from the operating table before it is too late. In an upending of all for which Joel and Ellie strived for throughout their travails, our anti-hero must kill everyone who knows of Ellie, in order that she may be liberated from the burden of her responsibility to humanity. In terms of actual playability, the player has no choice but to pursue this killing, if they wish to continue playing the game. No ethical option to save or not save Ellie is offered. The prototypical last stand that Joel engages in, with the limp Ellie in his arms, is bitter. It evokes the vulnerable body of Joel's dying daughter, and this is confirmed when he calls Ellie "Baby Girl"—a term of endearment he once reserved for his own child. It also generates ethical questions in the player regarding the pyrrhic victory of saving Ellie at the cost of a possible cure.

While the player must be goal-oriented in their efficient killing of the Fireflies, the context of this bloodbath suggests that it is highly problematic, and forecloses the possibility of heroism on behalf of humanity. One may be a hero only to Ellie, and only nebulously so. After preserving her from immediate physical harm, in a conventional shooter/action sequence that culminates with killing Marlene, Joel and Ellie escape. In a cut-scene, the player sees Joel and Ellie returning to a small community of uninfected, where it is presumed that they hope to live. Ellie asks one last time whether it is really true that the Fireflies militia has stopped searching for a cure, and therefore it is no longer necessary for her to sacrifice herself to this cause. While it may be true that her brain matter may not result in a cure (we learn from a found doctor's recording that past attempts have not been successful) it is patently untrue that the doctors no longer want to use her to create a vaccine. Although it is unclear whether Ellie believes Joel, she acquiesces

to his declaration that he speaks the truth. Thus, the dying of the world is symbolically sealed in a lie that Joel tells Ellie, out of his weakness for her.

Voorhees locates the difficulty players have in negotiating the value of Joel's choice as one that issues from the player's own relative attachment to normative heroic masculinity. (Voorhees, 2014) He suggests that the degree to which the player has a melancholic response to the decision is directly connected to their perception that his heroic American masculinity is compromised by his irrational choice made on the basis of weakness, sentimentality and selfishness. A much healthier "mournful" response is one through which the player can see Joel as "flawed but redeemable" (Voorhees, 2014) in the face of highly problematic forms of American maleness. In both cases, the presumption is that there is an erosion of the normative, to which a player will undoubtedly have a strong response. This is likely to be at play to some degree. However, I am less interested in the debate around the difficult ending, than how the representation of Joel and Ellie—as iterations of desperate whiteness set against ruin and abolished social structures—resonated so strongly with audiences.

This suggests a response, not only to the individual narrative of the game, but the conditions or socio-political moment within which that kind of narrative would be understood as impactful. The most notable of these in U.S. culture was the re-election of President Barack Obama in 2012, which drew a dramatically more negative response from Republicans than his first election four years prior. Among the reactions associated with the news of re-election were notable paroxysms of anxiety from major right-wing public figures, like Rush Limbaugh, Ted Nugent, Ann Coulter, Bill O'Reilly, Donald Trump and many others, who declared that traditional America had "died", that they had to take back the nation, or strive to make America "great" again. (Krieg, 2012; Horsey, 2012) YouTube videos documenting Republican emotional meltdowns were circulated. Several reported murders and attempted murders were associated with perpetrators who

specifically named the cause as distress over the re-election of Obama. There was a small riot on the campus of The University of Mississippi, located in a strongly Republican state whose flag still contains the Confederate battle emblem. What was evidenced was a strong anxiety around the future of the United States, one that carries with it a racialized encoding of what in the nation is being lost, and is greatly at play in the persistence of tropes around imperiled white masculinity in games. What was at play was a response to a perceived shift in power within the nation, evidenced in the displays of grief and profound anxiety, but also forms of visual culture that increasingly resonated with audiences, such as *The Last of Us* exemplifies.

TOMB RAIDER, WHITENESS AND THE FEMALE HEROINE IN PERIL

It is worth considering *womanhood* in particular, in relationship to the ideological category of whiteness. One paradigmatic example from the same cultural moment that can be used to problematize constructions of whiteness in relation to race and gender is the revamping of the representation of Lara Croft. *Tomb Raider* (2013), developed by Crystal Dynamics and published by Square Enix, is an origin story in which the player meets a youthful Croft on her first expedition. Unlike the Lara Croft of previous games, the hyper-sexualization of her body is notably toned down: while still clad in her iconic tank top, she now wears long pants, and her breasts seem (finally) more proportional to the rest of her body. She is untested, although she is already obsessed with ancient cultures, and is adventurous in the pursuit of this knowledge. Her confidence falters, and she displays much more vulnerability. This is conveyed through body language, dialogue and the learning curve the character faces in the playable aspects of the game. It is telling that one of the most iconic characters in all of video game history underwent such a radical reinvention following an American cultural moment of fear and besiegement.

As a character, Lara Croft is considered almost exclusively from the perspective of gender. Indeed, despite her popularity with players, her highly contested formulation has become somewhat of an icon for virtually everything that is wrong with the representation of female characters in games. Likewise, the conventional use of a generic white male protagonist has also come under scrutiny, resulting in interventions that seem to embody then break with type, through character development such as in *The Last of Us*. Anne-Marie Schleiner contests the feminist critique of Croft, declaring her "a product of the mechanization of bodies; her fetishized synthetic beauty resides in her slick and glistening 3D polygons, evolved from clunky robotic forms into attire more appropriate for the information society." (Schleiner, 2001) Presenting a broad array of possible readings, Schleiner advocates for the subversion of gender categories by appropriating and hacking the iconic Lara.

In describing female hypersexualization in relation to *Tomb Raider* and other games, Jon Dovey and Helen Kennedy assess that, "the visual imagery in many mainstream games seems to be entirely ignorant of the critiques that have been made of these stereotypes in other visual media and appear to import some of the worst examples in an entirely unreflexive and uncritical way." (Dovey and Kennedy, 2006, 93) Justine Cassell and Henry Jenkins outline the problematics of Croft as a character purported to be liberated and capable, while pandering to chauvinistic teen male interests ("tits and ass", as they put it). (Cassell and Jenkins, 2000, 32) They ponder the potentialities of transgender identification made possible through the male player's engagement with a female avatar.

Helen Kennedy, in her definitive 2002 essay, "Lara Croft: Feminist Icon or Cyberbimbo?" considers the diverging interpretations of this iconic character, in terms of what she calls "gendered pleasures" that occur as a result of play. She surveys the broad array of feminist responses to the polarizing figure of Lara Croft, and importantly attends to the possible transgender readings of

relations between player and character. Additionally, she underlines the avatar's uncanny vacillation between her objecthood as a heteronormative sexual fantasy figure, and her complete lack of a defined sexual identity. "In the end," she concludes, "it is impossible to securely locate Lara within existing feminist frameworks, nor is it entirely possible to just dismiss her significance entirely." (Kennedy, 2002) For Kennedy, feminist theory must turn its attention to games, while keeping in mind the computer-mediated particularity of their forms.

There is also an array of responses that interrupt the notion that Croft should be read through gender representation. Most notably, Espen Aarseth's comments on the figure of Lara Croft, contradict the dominant feminist critiques that occurred early on. He suggests that playability changes the terms of engagement, and that, relative to game mechanics, the avatar is best thought of as transparent: "…the dimensions of Lara Croft's body, already analyzed to death by film theorists, are irrelevant to me as a player, because a different-looking body would not make me play differently…When I play, I don't even see her body, but see through it and past it." (Aarseth, 2004, 48) In this, the game studies and electronic literature scholar attempts to wrestle video games from narrative-based interpretation, identifying them as self-contained forms— a "new material technology"—as opposed to a continuation of story (with its attendant representations) in interactive form. (Aarseth, 2004, 46) In more recent research, Esther MacCallum-Stewart has returned to the subject, surveying the history of responses to the iconic character, while taking into account Croft's reinvention by a female writer in the 2013 reboot. (MacCallum-Stewart 2014) While there is no shortage of debate around Lara Croft, her whiteness is greatly under-theorized.

Whiteness and femininity are both at play in *Tomb Raider* (2013). Particularly during the first portion of the game, many of the missions focus on Lara as unprepared, as overwhelmed, and in serious jeopardy. Dyer discusses the notion of the heroine in peril in relation to visual pleasure, which, although related to exhausted

tropes of female passivity in cinema, is directly relevant to the reinvention of Lara Croft as a woman who is resourceful, yet out of her depth, ambitious but inexperienced and imperiled.[3] Writing on the cinematic desperate heroine, Dyer observes:

> Heroes in jeopardy do something about it; heroines don't. And the pleasure we are supposed to get from seeing these sequences is that of a woman in peril. We're supposed to get off on her vulnerability, her hysteria, her terror. In the way such sequences are put together, we are encouraged to take up a traditional male role in relation to the woman, one that asserts our superiority and at the same time encourages us to feel the desire to rape and conquer. We are superior because we either know more than her (we know that psychopath is there but she hasn't spotted him yet), or because we can see what any sensible person would do but she, foolishly and pathetically, doesn't. (R. Dyer, 2002, 96)

Dyer proceeds to make plain the ways in which the viewer of the sort of rote imagery he is describing is presumptively encoded as heterosexual male, and that this constructed male gaze oscillates between that which is tantamount to a rapist (who sees the unsuspecting heroine's unprotected flesh from a privileged and predatory vantage point) and a savior (embodied in the rescuer who comes to her aid). (R. Dyer, 2002, 96–98) Characterizing this "tendency" in cinema to be organized around what is thought to exemplify heteronormative male sexuality, Dyer sees this impetus as putting women in their place, "as objects of a 'natural' male sexual drive that may at times be ridiculous but is also insistent, inescapable and inevitable. Such representations help to preserve the existing power relations of men over women by translating them into sexual relations, rendered both as biologically given and a source of masculine pleasure." (R. Dyer, 2002, 98–99) Lara Croft's whiteness accords her a kind of purity. Her adventurer status aligns her with the colonial vision of the white explorer in an exotic land, while her white femininity paints her somewhat as

3. An excellent analysis comparing the reimagined Lara Croft to the imperiled Greek mythological figure of Andromeda was presented by (Blythe Adams 2015)

a victim, but simultaneously as the critic of—or even the cause of—the downfall of empire.

Lara's deaths are illustrated in various kinds of startlingly gruesome forms including impalement, butchering, being crushed by boulders, gunned down, stabbed, torn apart by wolves, shot with arrows, hacked at, strangled and burned. (Blythe Adams, 2015) These illustrated deaths are far more ghastly than in previous *Tomb Raider* titles. In addition to their gory detail, they are also notable departures from earlier iterations of the Lara Croft franchise, which paint the heroine as much less fragile, and have a much stronger focus on puzzle solving. Still, this revamped Lara was generally critically lauded, and contained many of the same elements of adventure and discovery for which the franchise is known. (Parkin, 2013; Kollar, 2015; Miller, 2013; Narcisse, 2013; Chambers, 2013)

Survivalism and loss, as well as the identified theft of innocence thematically figure into *Tomb Raider* in a way that feels very much like *The Last of Us*. (Parkin, 2013) In this case, the female form of whiteness is cast against the backdrop of a mysterious Pacific island called Yamatai, filled with hostile inhabitants who are cult followers bent on female sacrifice to their Solarii Sun Queen. Separated from her shipwrecked crew, Lara must learn to navigate the terrain alone and, increasingly, defend herself against both the elements and the obsessed, deranged islanders. As opposed to an unflappable heroine, she is the underdog, initially the victim, and must quickly learn to handle herself in the unrelenting environment. She is no daredevil, as she unsteadily negotiates the perils around her. Scavenging again plays a strong role in the playable elements of the game. Players must search for tools and parts that allow Lara to find and upgrade weaponry, and otherwise provide the means for survival. Like *The Last of Us*, the urgency around finding what one needs, if even in small amounts, feels dire. In addition, the discovery of clues, artifacts and documents that unveil additional knowledge of her location and her attackers provide complexity to the narrative. Like Joel in *The Last of*

Us, the scenario presents another traumatized form of whiteness, although in this case, one that interestingly vacillates between the visual representation of a vulnerable female figure, and the urgent drive to protect that playable figure from harm.[4] This is expressed to great effect in various ways, including the plentiful desperate grunts and cries of the character as she navigates the dangerous terrain. It is also expressed in the small, animated touches such as the way she grasps an injured arm while her character awaits your next move. Although Joel and Lara are both viewed in the third person, from a visual culture perspective, Lara reads differently than Joel due to the overbearing pre-existing image culture around white femininity which informs her reception.

In a brief playable cut scene that received much media attention, Lara is abducted by a male scavenger, who physically intimidates her by suggestively rubbing a hand against her thigh. This scenario was initially described by a representative of Crystal Dynamics as an attempt to abduct and rape Lara, but the language around this was quickly amended to indicate that there was no sexual assault represented. However, the scene is decidedly gendered, and the so-called "pathological situation" which was intended to indicate physical intimidation and fear conveys a strong affective sense of impending sexualized domination. (Schreier, 2012) Thus, the dynamics of simultaneous predator/protector described by Dyer in relation to the embattled heroine is embodied in the player interaction with Lara as a vulnerable woman to be looked at, and also a victim to be saved. Certainly, she is not passive to the degree that Dyer describes in relation to earlier cinematic representations. She finds her agency and transforms into the figure that we recognize, the indomitable Lara Croft. But she too is an embattled figure, set against the backdrop of an uncivilized place, and cast in the role of the victimized other, while mobilizing a visual politics of whiteness that largely goes unacknowledged in analysis.

4. This reaction to be protective toward Lara was reportedly common among play testers. See: (Schreier 2012).

CONCLUSION: A TRAUMA NARRATIVE OF WHITENESS

The overwhelming absence of a discussion of whiteness as core to each of the aforementioned games points to a larger, understudied area in playable media. Namely, whiteness in video games often operates in duplicitous ways as both a universal expression of humanity – which has ideological consequences—and as a specific form of identity politics that goes unrecognized as such. "The combination of extreme whiteness with plain, unwhite whiteness," Dyer explains, "means that white people can both lay claim to the spirit that aspires to the heights of humanity and yet supposedly speak and act disinterestedly as humanity's most average and unremarkable representatives." (R. Dyer, 1997, 223)

The function of deconstructing these complicated representations is to understand the power at play in these pervasive images. These two games, though inclusive of many themes and dimensions, simultaneously reveal a set of concerns of a social grouping of heteronormative whiteness, particularly in relation to navigating a scenario of losing power and dominance. These are the "aesthetics of ambivalence" of which I speak, affective qualities that trade on notions of the white male normative hero, but which in fact betray a larger form of whiteness that is deeply in crisis, desperate and which strategically mobilizes itself as a form of otherness. It is a whiteness that appropriates the moral high ground of victimhood through its embattled status as a form of alterity, even while it trades on itself as normative.

If we suspend the idea of these games as representing the normative, and consider how they are in fact the expression of a particular group, and if we can make the whiteness of these games "strange", it becomes possible to see several things. In the first case, it reveals a trauma narrative of ideological whiteness that repeats itself unendingly in the innumerable fear-based narratives of contagion, besiegement, apocalypse and the crumbling of civilization. Second, it becomes clear that, rather than merely a strategy for representing a universal form of humanity, these

games are in fact utterly fixated on whiteness, even while proclaiming themselves as nonparticular. How can both of these function simultaneously? How can whiteness possess the ordinariness of universalism, while also assuming a traumatic narrative of alterity and disenfranchisement? This double-signification is connected to the effort to preserve whiteness from denaturing it to the point that it becomes specified (and therefore non-dominant) rather than universal. This is mobilized, at least in part, by a representational logic ordered around the normativity of whiteness, and a phobic response to difference. Presented again and again in games as cultural forms are expressions of whiteness as both normative and under duress, unremarkable and exalted, deserving of, and denied that which was deserved. That is to say, these games must be understood *as* the visual politics of dominant culture and therefore, at the time in which they were made, an expression of the totalizing logics of whiteness.

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5.

Free-to-Play or Pay-to-Win?

Casual, Hardcore, and Hearthstone

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ABSTRACT

"Casual" and "hardcore" are commonly used descriptive terms for games and gamers. While critics have discussed these terms with regards to game design and culture, "free-to-play" games like Blizzard's *Hearthstone* add a monetary dimension to such considerations. Players can play such games for free, but success at them often entails purchasing in-game content. These games are

sometimes instead derisively referred to as "pay-to-win:" players who spend money win more often. Free-to-play games suggest that casual and hardcore depend on how much money a player spends on the game, in addition to measures like time investment or play practices. I argue that free-to-play games encourage casual players to become more hardcore by spending more money on them in addition to improving their skills at the game, using *Hearthstone* as a case study to examine the implications of the free-to-play pricing structure on both game design and game players.

Keywords

casual games, hardcore games, free-to-play games, collectible card games, *Hearthstone*

INTRODUCTION

In *A Casual Revolution,* Jesper Juul defined the qualities of what he calls "casual games," contrasting them with "hardcore" video games: while he noted that casual is a word with many potential meanings in terms of gaming, he argued that "simple casual games are more popular than hardcore games" (2010, 8). Since then, casual games have redefined how games are structured and how players play them, challenging the image of gaming as a hobby for hardcore enthusiasts. The differences between casual and hardcore games and gamers are common distinctions made within gaming culture, and Juul's description of casual games as being "simple" and "popular" mirrors the way such games are often described, suggesting that they are not particularly complex, that they have a broad appeal, and that they are aimed at a wider audience beyond the "hardcore gamer." Likewise, Chess claimed that "we can understand casual video games as those which are simple to learn and play, addictive enough that one can play them in short periods of time or for as long as time allows, and are cheap or free" (2013, 84). These descriptions of casual games recall the way the terms

casual and hardcore are applied to players in gamer culture: they are status-based distinctions in which casual gamers are portrayed as less seriously dedicated to the hobby than hardcore players are. Casual games have changed since these texts were written, however, and free-to-play games like Blizzard Entertainment's *Hearthstone* (2014) have challenged the traits of casual games by adding hardcore elements to gameplay, raising questions about how such games, and those who play them, should be considered.

Critical approaches to the use of terms like casual and hardcore within gaming culture are often rhetorical, focusing on the implications of the terms. Many theorists have analyzed the rhetoric of games: for example, Paul argued that "if rhetorical analysis is a critical perspective, focusing beyond mere persuasion, all elements surrounding games are influential symbols worthy of study, as all games function persuasively" (2011). More specifically, theorists have looked at the players of games through the lens of terms like casual and hardcore: for example, Poels et al. claimed that "a clear categorization of the different types of game players is important for the academic world" (2011, 2). Culturally defined terms such as casual and hardcore are therefore worthy of analysis even if the rhetoric that underpins such terms is problematic.

Problems with the terms casual and hardcore usually arise in relationship to gender and gamer identity: for example, Soderman noted that the terms are frequently associated with gender, highlighting "the recent fears and anxieties expressed by the hardcore gamer community over the rise of casual games which can be linked to a distinctive gendering of the hardcore as masculine and the casual as feminine" (2009). Likewise, Eklund argued that "the casualization/feminization of gaming seems a pervasive ideology in digital games culture" (2016, 19), pointing out that discussions about casual games often focus on the way they challenge the idea that video games are for male players. In some cases, critics point out that casual games expand the idea of who video games are for in general: for example, Chiapello

claimed that "[casual games] eclipse the video game stereotype of shooting games and the male teen player, and reintroduce games as accessible for all audiences" (2014). Casual games therefore expand the notion of gamer identity because they are played by people other than the traditionally male hardcore gamer. In these respects, concerns about casual games in gamer culture come from the way they have extended gaming to people who are not seen as the target audience of video games.

Since casual games are so popular, game designers have tried to develop games that appeal to broader audiences. Chiapello noted that "the casual game phenomenon is widely acknowledged in the game design profession" (2014): the word "phenomenon" implies that casual games have redefined the ways that game designers create games. Such games are often designed to be played on mobile devices and for short periods of time, which leads to casual games being considered trivial in comparison to their hardcore counterparts. Players can get quite deeply involved in casual games, however, Hajinejad et al. argued that "casual games are not only games fitting into the gaps of everyday life" (2011), and many gamers play such games in a serious, hardcore way. Such elements blur the line between whether a game or player can be called casual or hardcore, and these authors all highlighted slippage between definitions of casual and hardcore with regards to video games, especially in terms of audience and design, suggesting that distinctions between casual and hardcore are complicated. The definitions deploy across a variety of other areas related to games as well, and Paavilainen et al. summarized the situation nicely: "casual is not a simple list of properties of a game. The phenomenon is an answer to a specific transformation of game cultures, forming a set of design values that correspond to these changes" (2009). Since the words are frequently used in discussions of game design and game players, the implications of the terms in those areas should be considered.

While factors such as rhetoric, audience and design are all useful elements to consider when discussing the terms casual and

hardcore with respect to games, I focus here on how these concepts relate to the pricing structure used in free-to-play games. Shaw claimed that "we should also look at the dominant meanings encoded in the texts [players] are playing" (2010, 11), which means that the implications of the economic models built into free-to-play games like *Hearthstone* should be analyzed. The free-to-play purchasing model specifically adds a monetary dimension to casual games that is important to consider. Therefore, I argue that free-to-play casual games are structured in a way that promotes hardcore gameplay – and by extension, hardcore spending – encouraging players to spend more on the game in addition to improving their skills. Given the implications of terms like casual and hardcore for both game design and gamer identity, this structure is problematic, suggesting that those with more money to spend on a game can more easily become a hardcore player, or even that a monetary investment is required to become one.

METHODOLOGY

In this paper, I use *Hearthstone* as a case study to demonstrate the effects of the free-to-play monetization model, illustrating the ways that money impacts casual and hardcore game design and gamer identity in free-to-play games. This impact can be seen in the pricing structure of the game, the ways that spending more on the game makes it more fun, the connection between money and time commitments required to play the game, and finally in the ways that players engage with gameplay elements based on both time and monetary constraints. To demonstrate this impact, I analyze the pricing, reward and ranking structures of *Hearthstone* as well as the player community surrounding the game.

To analyze the rhetoric surrounding the terms casual and hardcore among academics, I look at discussions about the terms in the critical game studies community. I have drawn on sources primarily from 2009 – 2018; as *Hearthstone* was released in 2014, this time frame offers a snapshot of critical discourse surrounding

the terms casual and hardcore during *Hearthstone's* development, release and rise in popularity. In many cases, the discourse around these terms suggests that they are problematic and potentially even meaningless; however, their continued usage in critical circles suggests that discussions around these terms are worth considering.

In addition to critical sources, I use player-created paratexts such as game guides, discussions about the game on fan forums, and gaming news coverage of the game to illustrate how these elements are portrayed in gaming culture. I draw on some critical discourse surrounding these concepts as well, especially in regards to players streaming content on sites like Twitch.TV, but my primary focus is on the way the terms casual and hardcore are used within the player community.

Finally, I look directly at the game itself, in addition to the ways in which the game's developers have reinforced a monetary connection between casual and hardcore in *Hearthstone's* design. For this analysis, I rely on quotes from the developers and my own experience as a player: I have played *Hearthstone* regularly since its open beta in January 2014, though whether I would be considered a casual or hardcore player is probably up for debate!

FREE-TO-PLAY COLLECTIBLE CARD GAMES

Many modern casual games use the "free-to-play" model: such games rely on "microtransactions" in which players purchase game-related content for a small fee. Blizzard Entertainment, one of the largest game developers in the industry, created a free-to-play game based on their popular *World of Warcraft* franchise called *Hearthstone*. The game has become one of the most popular games in the free-to-play genre: a press release by Blizzard in May 2017 noted that *Hearthstone* had more than 70 million registered accounts (Campbell, 2017). It is also one of the most profitable: publicly available data released by an analyst firm in 2017 suggest that the game earns more than 25 million dollars a month (Minotti,

2017). *Hearthstone* is a collectible card game: as in many others, *Hearthstone* players construct decks out of cards to battle one another. While *Hearthstone* offers some introductory cards to players completely for free, most of the game's cards are obtained through randomized card packs that must be purchased with real-life money or in-game currency. Cards are sorted into rarity levels – "common," "rare," "epic," and "legendary" (Blizzard, 2014) – that roughly correspond to increasing levels of power, though power levels between cards and rarities can vary wildly. Players have a general idea of what cards could potentially be in a pack, as well as their chances of obtaining higher rarity cards, but do not find out what cards are inside until the pack is virtually opened. These card packs are sorted into expansions that are periodically released over time.

The digital card pack format described above is similar to purchasing a physical pack of cards for a collectible card game like *Magic*: *The Gathering* or *Pokémon*; however, it is worth noting some key differences. Players cannot trade cards with one another in *Hearthstone* as they can in real life, which was a deliberate design choice made to avoid high prices for desirable cards: in an interview at Gamescom in 2013 before the release of the game, executive producer Hamilton Chu commented, "We decided to go away from that" with regards to card trading (Goldfarb, 2013). Instead, *Hearthstone* players can use their old or duplicate cards to create a certain amount of "arcane dust" (Blizzard, 2014) that can be used to craft any card the player chooses of a lesser rarity. It is also worth noting that *Hearthstone* cards are not static, as real-life cards are: Blizzard occasionally updates problem cards to reduce their power level and has created a special "Standard" (Blizzard, 2014) format that only allows players to use newer cards to alleviate concerns about how difficult it is for newer players to compete against longtime players with large card collections. While these updates are presented as ways to keep the game fresh, they can be problematic for players who take long breaks from the game, as their old cards could be changed or become unusable in many gameplay formats, requiring them to purchase new cards.

As with many other free-to-play games, *Hearthstone* players can obtain in-game currency that they can use to purchase card packs. Obtaining such currency can be time consuming, however, so most free-to-play games offer an alternative: purchasing content outright with real-life money. This pricing structure adds an economic element to considerations of casual and hardcore in free-to-play games, as the usual view within the player community is that "casual" and "free-to-play" are nearly synonymous (Marrilaife, 2016). On the other hand, the free-to-play model makes these games appealing to so-called casual players when compared to their physical equivalents like *Magic*, because those players never have to purchase content and can spend as little or as much as desired. In practice, however, players who want to succeed at free-to-play games like *Hearthstone* will probably need to purchase cards, as in-game currency is acquired faster through winning games or completing challenges in the game, and a larger collection of cards allows players to build more successful decks that win more frequently. Therefore, games such as these are sometimes derisively referred to as "pay to win" (Secant, 2017), a term that comes up often in discussion threads about *Hearthstone*. The pricing structure ensures that players who purchase content win more often because they have access to better options than players who have not spent money on content. Unlike a traditional game that players purchase and then play indefinitely, free-to-play games instead encourage players to periodically purchase new content, constantly pressuring them to spend more and suggesting that those who do are more hardcore players.

By relying on a free-to-play pricing structure, games like *Hearthstone* add an economic dimension to gameplay. As noted above, the ways people spend money in such games help to define casual and hardcore players in the eyes of the community: casual players spend less money on the game, while hardcore players spend more. From this perspective, the line between casual and hardcore games can be similarly drawn based on how much the game incentivizes purchasing content with real-life money: in other words, the more hardcore a game is, the more likely it is to

employ a "pay-to-win" philosophy by giving gameplay advantages to players that pay for content. Most digital collectible card games like *Hearthstone* have a variable position on this spectrum because players purchase randomized content. In theory, a lucky player might get the content he or she wants very quickly and will therefore not have to spend much money. In practice, there will almost always be some content that a player does not have unless he or she spends significant amounts of money or time on the game to acquire all of it, and the periodical release of new content adds more opportunities for spending on the game over time. Randomization helps to alleviate some of a game's pay-to-win problems. However, in *Hearthstone*, for example, a player who spends more on the game might have more cards, but is not necessarily guaranteed to have better cards, and cannot simply purchase or trade for specific powerful cards outright. That being said, many critics have pointed out that the game has become more expensive over time: Friedman wrote an article titled "*Hearthstone* Has Become a $400 a Year Game" and analyzed how the game's pricing structure has changed since it was released, estimating that current *Hearthstone* players would now likely need to spend much more in order to get most of the cards released during a given year (2017). His analysis was based on assuming that such players would want to have access to most of the game's cards in order to build competitive decks, and he pointed out that "you don't have to chase *every* card, but the game is still aimed at making sure you spend more money than you have in the past" (Friedman, 2017). While his assumption may only be true for players who want access to most of the game's cards, the game is structured in a way that always encourages players to spend more. Spending money on a free-to-play game therefore allows a player to be more competitive against others, pushing them to become a more hardcore player in the eyes of the community. In addition, spending money on the game gives the player access to more cards, which makes it more fun to play.

FREE-TO-PLAY GAMES AND FUN

As noted above, access to all of *Hearthstone's* content is not required to play the game, offering players a way to play the game without a significant monetary investment. Access to more content makes a player's game experience better because it offers more variety, however, such that fundamental concepts such as fun are impacted by the pricing structure of free-to-play games. Koster argued that "when you're playing a game, you'll only play it until you master the pattern; once you've mastered it, the game becomes boring" (2004, 14-18). As noted earlier, randomness is also a key part of the free-to-play monetization model, a trait that also contributes to fun in casual games. Juul pointed out that most casual games are simple and do not take hundreds of hours to complete as hardcore games do, so they often have various methods to reduce player boredom. One such mechanism Juul described was replayability, a way that casual games stay entertaining despite their simplicity: he provided Solitaire as an example of such a game (2010, 78). *Hearthstone* shares this trait, but differs from Solitaire because players construct multiple different decks to play with, using cards available from their library. Therefore, deckbuilding is an important aspect of the game's fun: access to new and different cards keeps players from getting bored, which incentivizes spending more on the game to get access to more cards.

Hearthstone also differs from Solitaire because it is a multiplayer game, so a player's deckbuilding choices are not made in a vacuum: the player builds his or her deck knowing that it will be tested against opposing decks, and a player's fun is often linked to how successful that deck is. These decks, and the decks a player's opponent uses, make up the patterns of *Hearthstone*, and are referred to as the game's "metagame," a term coined by Richard Garfield in reference to a similar situation in *Magic*: The Gathering (Carter et al., 2012). While players are free to make a deck out of any cards in their collection, the cards in *Hearthstone* are not all equal in terms of power or usefulness. The *Hearthstone*

player community analyzes the game's expansions for cards that are more powerful than others and constructs "decklists" out of them, which are usually shared online: for example, one site claims to list "all of the currently viable decks" for a particular class (L0rinda, 2018). If one requirement of being a hardcore player within the player community is having access to the cards necessary to make a viable deck, a casual player is someone with few cards who can only build a few of these decks. Such players will master the pattern of those decks quickly and will likely get bored of them, especially if the decks are hard to win with. On the other hand, so-called hardcore players with lots of cards instead tend to gravitate toward established deck types, creating a metagame that often has specific, recognizable decklists. There are players who have fun by creating their own decks, but if those decks win frequently, they are quickly adopted by hardcore players, so even off-beat decks end up becoming part of the metagame. The metagame therefore structures the fun of playing *Hearthstone*: it determines many of the player's deckbuilding and gameplay choices, especially if they want to be competitive in the game.

The factors described above mean that access to more cards makes *Hearthstone* more fun, since a player with more cards can build a larger variety of decks. As such, *Hearthstone's* pricing structure incentivizes purchasing more content in multiple ways: having more cards allows a player to have more fun playing, encourages the player to be competitive and makes the player more of a hardcore player. As mentioned earlier, *Hearthstone* is also periodically updated with new cards: these updates keep the game from getting boring by introducing new cards and therefore new patterns into the metagame. The updates also mean that a player must continuously purchase new content to have fun and be competitive against other players. These elements add an economic factor to *Hearthstone*'s fun because the game becomes less boring when the player spends more money on it: over time, players might find themselves spending many times the amount they would normally spend on a video game. For the game's

casual players, those factors also contribute to the player's time investment into the game, since acquiring in-game currency allows a player to purchase more cards, have more fun and be more competitive.

CASUAL GAMES AND TIME INVESTMENT

The free-to-play pricing model also impacts the amount of time that players spend on these games. Juul argued that another key component of casual games is their flexibility: "a casual game is sufficiently flexible to be played with a hardcore time commitment, but a hardcore game is too inflexible to be played with a casual time commitment" (Juul, 2010, 12). Therefore, one way of defining the differences between casual and hardcore games is through the game's time requirements: a casual game is structured so that it does not require much time to play, and allows a player flexibility with how he or she spends that time. Likewise, Shaw argued that "video game culture is also defined in terms of the amount of time people spend doing it" (2010, 9), pointing out that the image of the hardcore player is typically one who spends a great deal of time playing the game. These viewpoints suggest that a casual or hardcore game is often defined in terms of how little time it requires of its players, and that a casual or hardcore player can be defined by how much time he or she spends playing a game.

Free-to-play games like *Hearthstone*, however, challenge the notion of the distinction between the quick casual game and the time-consuming hardcore game, as well as the notions about the time investment required from players in such games. In *Hearthstone*, the game's "quest" (Blizzard, 2014) system offers objectives for the player to complete for an in-game currency reward: a quest might require a player to use a certain type of card or a certain class. This design might sound flexible because players can simply not complete these quests if they would rather not invest the time required to do so. However, since the pricing structure of free-to-play games implies that distinctions between

casual and hardcore are partly based on how much money a player has spent on the game, *Hearthstone* encourages a significant time commitment from its casual players. Players are given one quest every 24 hours, and they have a "quest log" (Blizzard, 2014) that can store up to three quests at a time, but once this quest log is full, any new quests are lost. Quests can also be "rerolled" (Blizzard, 2014) once a day, which gives the chance of granting a different quest instead. Since the quests award varying amounts of in-game currency, a player usually wants to maximize the value of his or her quest rewards, and will typically try to reroll less-valuable quests in the hope of getting more rewarding ones. The structure of *Hearthstone's* quest system therefore means that players who would rather spend in-game currency than real life money on the game must invest significant amounts of time optimizing their management of the system. Since there are a maximum number of quests that can be stored, players are encouraged to complete at least one quest every day, and since some quests have better rewards than others, players are also encouraged to reroll a quest every day to maximize their rewards. The result is that *Hearthstone* pressures casual players to play the game and complete quests every day to get as much in-game currency as possible, while hardcore players simply spend real-life money on the game instead, avoiding the time commitment necessary to complete the game's daily quests. Therefore, in free-to-play games, a casual player's time is more committed than a hardcore player's, unless he or she spends money to avoid those time investments, making the player more hardcore in the process.

These daily quest models are popular in many free-to-play games, and optimizing in-game currency rewards is so important to players that there are numerous online guides that offer advice on how to maximize those rewards. One *Hearthstone* guide claims that "you will end up spending far less money in the long run if you understand how to properly manage your in-game resources" (Aleco, 2017), suggesting that a great deal of a casual *Hearthstone* player's time is spent trying to complete these quests to save themselves money. Because casual free-to-play games use a

reward structure that provides players with currency, time investment is directly tied to the game's pricing structure. Since hardcore players have spent a great deal of money on the game, such players have little incentive to complete these quests compared to casual players, as they have no need for in-game currency. In the case of *Hearthstone*, hardcore players are more likely to have spent money on the game to get the cards they want, and therefore are less likely to need the in-game currency offered by the game's daily quests. *Hearthstone*'s hardcore players often ignore the game's quest system entirely, as they have no reason to spend their time completing those quests. The game's casual players, on the other hand, have a strong incentive to try to maximize the currency they gain from quests: since they spend less real-life money on the game, quests provide the in-game currency needed to get access to more cards.

While hardcore players likely play more than casual players because they are more invested in gaming as a hobby, free-to-play games like *Hearthstone* challenge Juul's notion of flexibility in casual games because the time hardcore players spend in the game is less committed. In *Hearthstone*, casual players must play daily to keep up with their quests, while hardcore players do not have such concerns. Both types of players might invest a great deal of time in the game, but hardcore players have more freedom with how they spend their in-game time and focus more on the game's ranked play system, where winning offers minimal in-game currency rewards, but confers hardcore status in *Hearthstone's* gaming community. Since the game's ranked play mode is skill-intensive, many players often avoid that game mode; in fact, the game reinforces the distinction between casual and hardcore by offering an unranked mode that is referred to as "casual play" (Blizzard, 2014). The name of the game modes suggests that the ranked play mode is considered the game's more hardcore play mode by the game's designers themselves, and influences the community's play practices. One of the game's main developers, Ben Brode, described the game mode this way: "casual mode, ideally, is just low stakes. I don't have to worry

about losing anything or having loss aversion… It isn't hardcore competition where I need to be 100 percent focused and available" (Wilson, 2017). That the game's developers themselves make this distinction is problematic because it reinforces a connection between perceived player status and how much they spend on the game: ranked players are usually seen as more skilled and therefore more hardcore, but they are also likely to have spent money to get the cards necessary to build a competitive deck, while casual players have not. These factors mean that the economic elements that impact casual and hardcore players in free-to-play games are not only influenced by how much time a player spends playing: it is also important to consider spending in relation to how players spend their time in the game. In free-to-play games, how much a player spends on the game determines how he or she plays it, which likewise determines the player's status as casual or hardcore. In *Hearthstone*, such differences can be observed through play practices in the game's ranked play mode and in its competitive tournament scene.

CASUAL AND HARDCORE PLAY PRACTICES

Differences in casual and hardcore play practices can be seen in the way players engage with *Hearthstone*'s daily quests and advancement systems when compared to other games, as well as in how those systems are structured. These differences imply that it is important to consider how players spend their time in free-to-play games in addition to considering how much time players spend playing them or how much time is required to play the game, since play practices themselves are influenced by the game's pricing structure. Shaw argued that "gaming can be, and has been, studied in terms of play practices" (2010, 9): how players play games is an important paradigm for studying them. In many games, how a player spends his or her time determines whether that player is casual or hardcore in the eyes of the community, and in free-to-play games, the pricing structure and game design both contribute to casual or hardcore play practices.

The ways a video game structures rewards and advancement are often the main factors in determining a player's play practices: for example, in games like *World of Warcraft*, daily quests are time-consuming endeavors that are usually undertaken by the game's most hardcore players. In hardcore games, daily quests offer a specialized set of objectives designed for players who already spend a great deal of time playing and are aimed at creating a continuous path of advancement that provides a reward structure for hardcore players. In free-to-play games like *Hearthstone*, however, daily quests are not part of the game's advancement system, since the only reward for completing them is in-game currency; these quests are instead aimed at the game's casual players in the hopes of getting them to play more often. In fact, since the amount of in-game currency that a player can obtain is capped and there is a limited amount of content to spend it on, *Hearthstone*'s most hardcore players ignore these daily quests entirely, since those players have spent enough money on the game to have all the content they want.

Rather than being tied to daily objectives and reward systems, a player's casual or hardcore status in *Hearthstone* is instead tied to the player's performance in spaces such as the game's ranked play mode. While the game's ranked play mode offers rewards for achieving certain ranks, these rewards are given out on a monthly basis and are quite minimal in comparison to the rewards given by the quest system. The game mode is instead intended for hardcore players who are interested in testing their skills against others, and a high ranking is seen as a status symbol in the *Hearthstone* community: Blizzard often releases news updates detailing the top-ranked players each month (Blizzard Entertainment, 2018). In competitive free-to-play games like *Hearthstone*, advancement is measured differently than in games like *World of Warcraft*: hardcore *Hearthstone* players focus on the game's rank-based advancement system, as well as specialized organized tournaments with specific rules that are held outside of the game's ranked play structure.

Hearthstone's ranked play mode consists of 50 in-game ranks that a player advances through as he or she plays each month: winning games increases a player's rank, while losing decreases it. A player's rank is reduced at the beginning of each month, meaning that consistently achieving a high ranking in the game's ranked play mode requires the kind of regular, hardcore time investment that Juul discussed. Once a player has reached rank 1, the player can advance to "legend" (Blizzard, 2014) rank, a specialized ranking system for the best players that provides a direct numerical ranking of the player's status against other legend players within their region. Consistently reaching legend rank is one of the main markers of a hardcore *Hearthstone* player within the community. While gameplay skill is usually seen as the most significant determining factor of a player's ability to reach legend rank, there is a monetary factor to reaching legend rank as well: a player must have access to enough cards to build an effective deck that can win consistently, something that is very difficult to do with a limited set of cards. There is also a time investment element required to achieve the legend rank: while Blizzard has updated the ranked mode over the years, fans typically estimate that players will need to win hundreds of games to reach legend rank each month (Berry, 2017). These factors suggest that gameplay skill is tied to money and time investment in these games: while a player might be good at the game to achieve the legend rank, he or she also needs to have the cards necessary to build decks that can reach that rank.

Consistently achieving legend status in the game's ranked play mode also often gets players invited to special invitation-only *Hearthstone* tournaments, the largest of which are sponsored by Blizzard themselves. These tournaments form the backbone of the game's "competitive scene," and each year, the best *Hearthstone* players compete at a worldwide tournament to crown a world champion. As in many other collectible card games, *Hearthstone* tournaments are typically seen as the pinnacle of competitive play: there are professional *Hearthstone* players who make a living by competing in these tournaments and winning prize money, and fan

websites that rank the players by earnings and tournament success (GosuGamers, 2018). Professional players often also stream their in-game playtime through services such as Twitch T.V., which authors such as Johnson and Woodcock have described as a rapidly growing career path for gamers (2017). These factors combine to create an interesting reversal of the game's economic structure: the most hardcore of *Hearthstone's* players can achieve a kind of celebrity status in the community, and are even able to make a living from their Twitch streams and tournament winnings. While this description only applies to a small percentage of *Hearthstone* players, it also represents perhaps the most extreme example of the economic implications of free-to-play game structures: the game's most hardcore and skilled players have invested so much time and money into the game that they can see a return on their money if they make an effort to monetize their playtime.

CONCLUSION

While there are many elements to consider about the rhetoric surrounding casual and hardcore with regards to players and games, the monetary factor is particularly problematic in free-to-play games, because it is so closely linked to status and identity: a player needs enough content to be competitive if he or she wants to be hardcore, and spending money is the fastest and easiest way to get that content, suggesting that players should do that first and improve their gameplay skills afterward. These factors therefore complicate notions of casual and hardcore in free-to-play games. Complicating the issue further is that time, economics and status are all linked in free-to-play games: spending money on the game allows players to spend their time on hardcore elements of the game, such as its ranking system or competitive tournaments, while not doing so means players will instead need to spend time gaining in-game currency in order to become more hardcore. This is problematic because gameplay and players are often separated by the terms, casual and hardcore, in the ways they are used by both the gaming community and game developers. In free-to-play

games, access to hardcore elements is restricted by the player's ability to pay for content, suggesting that those who do not have the money to spend are casual players and that they cannot become hardcore players until they do so. Considering that casual games and players are often portrayed negatively, this linkage between time, money and status in free-to-play games like *Hearthstone* is especially concerning.

The economic aspects of free-to-play casual games also open new avenues of analysis for the future. Specifically, analyses of the capitalistic elements of this monetization method would be particularly valuable, and, as noted earlier, some gaming journalists have already highlighted the exploitative nature of this pricing structure. The influence of the free-to-play pricing structure on non-digital games has also been noted (Maisenhölder, 2018), suggesting that it may impact all kinds of games as well. Since this method of pricing has become particularly popular with casual mobile games, which have greatly expanded the gaming audience in general, it is unlikely to go away any time soon, and further critical analysis of it could therefore be quite useful. While I have focused primarily here on structural analysis of one of the most popular free-to-play games in the industry, the implications of this pricing model, especially in games that are more aggressively "pay-to-win" than *Hearthstone*, might be analyzed from Marxist or cultural perspectives that could draw out many other problematic elements inherent in such an aggressively capitalistic monetization structure. One troubling aspect of such games is that players with more disposable income and time are more likely to succeed than players who do not. This element of free-to-play-games suggests that the constant pressure to spend money and become more hardcore, as highlighted here, reflects some of the larger problematic issues in capitalistic societies that link social status to money, and I believe that further work in this area could be particularly useful.

It is not surprising that free-to-play games like *Hearthstone* complicate terms like casual and hardcore, however, since the

game is part of a genre that has exploded in popularity and has generated a great deal of discussion about casual game designers and casual gamers. While that model has also been criticized – as noted earlier, a common negative descriptive term for these games is that they are pay-to-win instead of free-to-play – it has also come to dominate the mobile game industry. These factors suggest that one useful way to consider a free-to-play game is to examine the implications of its economic structure and reward systems, and that players can be evaluated based on how much money they spend on a game, as well as how they spend their time playing it.

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6.

Are Loot Boxes Gambling?

Random Reward Mechanisms in Video Games

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ABSTRACT

In this paper we investigate the phenomenon colloquially known as “loot boxes”. Loot boxes became a hot topic towards the end of 2017 when several legislative bodies proposed that they were essentially gambling mechanisms and should therefore be legislated as such. We argue that the term “loot box” and the phenomena it covers are not sufficiently precise for academic use,

and instead introduce the notion of “random reward mechanisms” (RRMs). We offer a categorization of RRMs, which distinguishes between RRMs that are either “isolated” from real-world economies or “embedded” in them. This distinction will be useful in discussions about loot boxes in general, but specifically when it comes to the question of whether or not they represent instances of gambling. We argue that all classes of RRMs have gambling-like features, and may be problematic in different ways, but that only one class can be considered to be genuine gambling.

Keywords

gambling, gaming, addiction, gaming disorder, internet gaming disorder, classification, taxonomy, loot boxes, loot crates, micro-transactions, in-game purchases, random reward mechanisms

INTRODUCTION

There is no doubt that the phenomenon of so-called “loot boxes” was one of the dominant controversies discussed in the specialized gaming press towards the end of 2017. In a nutshell, the term “loot-box” refers to specific visual representation of intermediary mechanisms that reward the player with random objects, provided a certain objective has been met. They are typically presented as containers of different sorts – boxes, chests or packs. What is important, even though the term “loot boxes” belongs to the gaming jargon and is often discussed in a very technical way, is that it managed to break into the mainstream discourse. Doing so, it inspired the resurgence of the debate about the relation between gaming and gambling and provoked questions as to whether some of the game mechanics could be considered to be psychologically exploitative. For this reason, loot boxes became the subject of public political debates, and resulted in legal action in some European countries. As is often the case with new phenomena (or at least new notions), the way the term “loot box” is used is rather haphazard. It is not obvious if the discutants refer to

the same mechanism and how many types of similar existing and hypothetical future implementations of such mechanisms should be considered under the same moniker. Discussing and especially regulating games using ill-defined or understudied concepts may lead to two possible risks. Firstly, future regulations may end up using a notion that is too general (and thus throw the baby out with the bathwater). Secondly, they may end up using a notion that is too narrow (and focus on a particular implementation which can then be easily circumvented by future developers). For this reason, we believe that creating a better conceptual apparatus and a typology of "loot boxes" is needed. A better description of the phenomenon of "loot boxes" and a classification of its different implementations is the main aim of this paper. The main intent of this classification is to facilitate public and academic discussion of this new trend in gaming, and to help establish its relations to gambling. It is especially important because, even though taxonomies of gambling games exist, they are not very well suited for the "loot box" discussion. For example, a taxonomy proposed by Gainsbury et al. (2015) proposes four categories of gambling games: "social casino game", "social game or virtual world with casino features", "practice game", "stand-alone console, online or mobile game". Even a cursory glance at the names of the categories shows that it cannot be used to discern categories of "loot boxes" as they could just as well appear in all four types of games.

We provide a general definition of the "loot box" mechanism in the following section and their typology later. We are going to argue, that this classification reveals, that some of the implementations of "loot boxes" are so different from each other that they should be studied and discussed separately.

The notion of a Random Reward Mechanism

Even though invoking the term "loot box" is important in a preliminary discussion, as it helps to put our paper in the

contemporary context, we will refrain from using this term from now on. We believe that using this particular term may be misleading, as its etymology suggests a particular implementation of a more general phenomenon, that is, the implementation of random procedures used for selection and delivery of rewards in video games. This may obfuscate the fact that there are many other functionally similar implementations that use different visual representations and metaphors (for example card packs), but do not differ from "loot boxes" in significant respects. Since the relation between the random mechanism in games and other, better studied, phenomena (for example gambling) is yet to be established, we believe, that at this point it is best to use a neutral, technical notion of "Random Reward Mechanism" (RRM for short). In order to cover many different implementations of RRMs, we can describe their structure in a very general form; any RRM consists of three components:

Eligibility condition —> Random procedure —> Reward

The "eligibility condition" is the requirement the player must meet in order to trigger the random procedure. What exactly this requirement boils down to depends on the particular implementation. It can be the death of a given monster, achieving a certain number of experience points, spending a given number of minutes in a game, or a micropayment made with real money (or in more technical terms *fiat currency* or *legal tender*).[1] The random (or pseudo-random) procedure can be achieved by any of the popular methods used in programming.[2] The technical details of this procedure are irrelevant to our discussion – the procedure could be just as well replaced by any physical method of achieving randomness, such as shuffling.

1. For a discussion for virtual economies and virtual currencies see e.g. Lehdonvirta & Castronova (2014).
2. The status of randomness used in programming is not without merit for the discussion on digital forms of gambling, but it is not specific to the problems related to RRMs. A good rundown on struggles to generate true randomness can be found at https://www.random.org/history/.

In a similar fashion, we do not specify the nature of the reward in question. It can be any element of the game that can be awarded to the player (a digital object, in-game currency, a new character, a new weapon, a character costume, new color scheme, or a new game mode or level).

History of RRMs

It is important to remember that RRMs are fairly common in games, and that they are also not exclusive to gaming. Before people started to use the notion of a "loot box", they referred to various forms of RRMs using the notion of "loot". A widely recognized example of this type of mechanism can be found in games such as Diablo (Blizzard North, 1996) or Borderlands (Gearbox Software, 2009) where killing a certain enemy [eligibility condition] triggers an event [random procedure] which awards the player with a new object [reward]. These forms of RRMs have been extensively used in digital games, almost from the beginning of the medium and have often been accompanied by other techniques of random content generation (Toy et al., 1980). One obvious reason for the popularity of RRMs in early games was that they gave the developer an inexpensive way of introducing variety, novelty and replayability to the game, because the player could be constantly surprised by the objects they found during their playthrough. For the same reason, RRMs are often used in contemporary independent games, which also experienced a demand for using cost-effective techniques (consider the resurgence in popularity of rogue games as an example of this (Garda, 2013)).[3] It is also worth pointing out that one of the popular marketing strategies used in the 1980s (especially in the case of the British ZX Spectrum market) was to use the completion of whole games as eligibility conditions in lotteries. Players who finished a given game and proved this feat to the publisher were then able to win a prize. RRMs are also quite common in analog

3. For a detailed description of the notion of an independent game, see (Garda & Grabarczyk, 2016).

games – Monopoly Chance cards are a good example of this. If the player lands on a specified field (eligibility condition), they draw one of the pre-shuffled cards (random mechanism) and receive a reward (or sometimes a penalty).

There are also well-known forms of entertainment that can be said to be built around RRMs – for example: collectible baseball and football cards, collectible card games such as *Magic the Gathering*, random capsule toy dispensers (so called gacha toys[4]) popular in Japan, and chocolate eggs containing random toys (so called *Kinder Eggs*, *Kinder Surprise* or *Kinder Joy*), just to give a few examples. The main idea behind these types of purchases can probably even be traced back as far as to 19th century collectible picture cards attached to cigarettes[5] because, contrary to the main item (the cigarettes), they were not chosen by the customer, but given semi-randomly (depending on what was left in stock and which pack the seller randomly happened to choose). One important reason why these mechanisms became popular is that they increased sales of products because the more cards or pictures the customer already had, the less probable it was that they would get what they wanted with a single purchase. The result of this statistical scarcity was that the customers had to purchase more items to increase the odds. Contemporary producers of collectible cards (and their digital equivalents) embraced this phenomenon by introducing artificial scarcity as the cards are classified as common, rare, very rare etc., depending on the probability of getting them (which results from the variability of the cards issued). The same techniques have been implemented in most games that classify the rarity of objects in a similar manner. The connection between these earlier forms of RRMs and the solutions found in contemporary video games is even stronger once we realize that some of the earlier implementations of the contemporary style RRMs in games originated as digitalization of collectibles or used the iconography and metaphors of collectible cards (e.g., Plants vs Zombies Garden Warfare (PopCap Games,

4. See Shibuya et al. (2015) for an analysis of a digitized version of gacha.
5. See examples of these at https://www.collectorsweekly.com/tobacciana/tobacco-cards.

2014)). It is worth noting here that the random elements in RRMs are not truly random, but rather constricted or designed. The rewards may seem random to the player, but they may not be depending on the algorithm that selects them.

It is also worth mentioning that RRMs are similar to some of the marketing strategies that have gained popularity in recent years – specifically, various "blind" purchases such as (aptly named) "Loot crate" or "Humble Bundle Monthly" – a subscription service that lets the customer buy an undisclosed set of games, which are revealed only after the sales of the particular set are closed. One important difference between "blind" purchases and RRMs is that, although both of them bank on uncertainty and the enjoyment that people feel when they are pleasantly surprised, "blind" purchases do not contain a random procedure (or the appearance of a random procedure). For this reason, we do not treat them as a form of implemented RRMs, but rather as a related phenomenon.

Still, even though RRM's are hardly new, they have recently been the subject of heated public debate. Players of older games (even those that used randomness extensively, such as Diablo or Borderlands) might have not even realized that the reward allocation was random. Even though the information on the randomness of the procedure wasn't in any way hidden from the player (for example, it was often present in marketing materials), the games themselves did not indicate this with their iconography. Contrary to this, many newer implementations of RRMs accentuate randomness by using easily recognizable tropes, such as spinning wheels, dice shaking sounds, shuffling, packs of collectible cards openings etc. It can be argued that this ostentatious glorification of randomness represents a genuinely new trend in video games. This shift can be seen in all of the early examples of modern RRMs that appeared around 2006-2007: Chinese action RPG game ZT Online (Giant, 2006), UEFA Champions League 2006–2007 (EA Sports, 2007) and Team

Fortress 2 Mann-Conomy Update (Valve, 2010).[6] The crucial difference between earlier implementations of RRMs and this new trend is that, even though the older games celebrated the reward the player received, the newer implementations celebrate the random procedure itself by objectifying it. Instead of a hidden procedure, it becomes a box, a pack, a wheel or something similar. The importance of this aspect of the modern implementation of RRMs can be seen in the fact that the sheer act of opening a box, a card pack, or spinning the wheel (in other words the sheer act of triggering the random procedure) is transformed into a form of entertainment, as players broadcast it to viewers on streams.[7]

One of the obvious reasons for the recent debates on RRMs is that the popularity of this solution erupted in recent years. Initially these systems were dominant only in the mobile market. Interestingly, the dominance of RRMs on this platform did not spark controversies similar to those described above. This can probably be attributed to the fact that most of the games containing these systems were distributed via the "free to play" model. This situation has begun to change in recent years because big game publishers (Activision and Electronic Arts are good examples of this) have introduced analogous systems to paid games developed for consoles and PCs, such as Overwatch and the Call of Duty series. The popularity of RRMs can be best seen in their reintroduction to re-releases and remakes of older games, which did not contain similar systems (the remake of Call of Duty 4 (Raven Software, 2016) is a good example of this) or sequels of single-player oriented games, such as Middle-earth: Shadow of War.

It is worth noting that even though this historical aspect of RRMs matters, as it can help explain the recent public interest in them, the problems discussed in this paper are independent of the sales

6. The original game was released in 2007, but it did not contain RRMs in the sense discussed in this paper.
7. Interestingly, the streams themselves can contain RRMs as the viewers are often randomly rewarded with items by the streamer or a developer.

model chosen by the publisher and apply to both free to play as well as paid games.

It is not surprising that all of this iconography, as well as the unusual focus on random procedures, has inspired comparisons of games containing RRMs to gambling, which opens a new chapter in the study of the relation of both of these ludic phenomena.

The relationship between video games and gambling

Similarities and differences between gambling and gaming have long been a topic of academic and public interest. In the 1980s and 1990s, researchers argued that the two were similar, based on rather superficial similarities such as audio-visual feed-back following wins:

> Sound effects have been used on fruit machines to give the impression that winning is more common than losing (e.g. sound of falling coins onto the machine's metal tray or machines which buzz loudly or play a musical tune after a win). Since there are usually several slot machines in one venue, this illusion is magnified. Sound effects are a vital component of video games and provide a sense of realism and drama. Apparently, playing a popular game like Tetris with the sound off, is a greatly diminished experience and players report the game as being less tense and/or exciting. (Griffiths and Fisher, 1995, 243).

However, less superficial similarities were also noted. Fisher (1993) points out how slot machine arcades and casinos, like coffee bars and pool halls, are commercially provided cultural spaces, monopolized by young people. In these spaces "teenagers can meet peers, relieve boredom, act on emerging sexual identities […]" (Panelas, 1983, 62 in Fisher, 1993, 401) and find shelter from the authorities and institutions that usually govern their lives. Arguably, coin-operated video game arcades can function in largely similar ways. In the U.K., arcades featured both types of

machines side by side (Fisher, 1995). Fisher (1995) describes their similarities as follows:

Competition is encouraged by electronic features such as digital bank displays and screening the initials of top video scores to enhance the egos of successful players. Both video and fruit machines incorporate stunning visual displays and electronic jingles, so that they are visually and aurally attractive to children and adolescents. (Fisher, 1995, 73)

Griffiths (1991) refer to both types of machines under the umbrella term "amusement machines" (53). He further argues that "a video game could be considered as a non-financial form of gambling, and taken to excess, both behaviors can be considered non-substance addictions" (54). The main differences, according to Griffiths, is that of *skill* versus *luck* and *points* versus *money*. However, he argues that the similarities outweigh the differences:

Amusement machines […] are typically played upon by older male adolescents, some of whom develop gaming machine addictions which can cause a number of negative behavioral consequences (Griffiths, 1991, 67)

We disagree with this assessment. We believe that games of chance played for money and games of skill played without financial stakes are indeed very different from each other. We believe that academics, legislators and the gaming community should make a clear distinction between the two.

ADDICTION TO GAMES OR ACHIEVEMENTS, PEOPLE AND SPACES?

As coin-operated video games were all but completely replaced by other platforms such as consoles, smartphones, computers etc., the focus of video game addiction research has shifted. Recently, massively multiplayer online role-playing games (MMORPGs) have been the focus of video game addiction research. This interest

in online games at the expense of offline or single player games is reflected in the terminology employed by the American Psychiatric Association (APA), which has proposed that video game addiction needs to be further researched under the term, "internet gaming disorder" (American Psychiatric Association, 2013). According to the APA, internet gaming disorder is also known as "internet use disorder", "internet addiction" and "gaming addiction" (p. 796). That such different terms are used interchangeably implies one of two things: 1) a reorientation away from viewing games as addictive objects, towards viewing them as addictive spaces, or 2) a confusing conflation of the internet and video games.[8] Yee (2006) provides perhaps the most robust view of player motivations for playing MMORPGs. He condenses the main motivations into three clusters, or components:

Achievement component

- Advancement—The desire to gain power, progress rapidly, and accumulate in-game symbols of wealth or status.
- Mechanics—Having an interest in analyzing the underlying rules and system in order to optimize character performance.
- Competition—The desire to challenge and compete with others.

Social component

- Socializing—Having an interest in helping and chatting with other players.
- Relationship—The desire to form long-term meaningful relationships with others.
- Teamwork—Deriving satisfaction from being part of a

8. For a discussion of how internet addiction and video game addiction came to be conflated in the DSM-5, see e.g. Nielsen (2018).

group effort.

Immersion component

- Discovery—Finding and knowing things that most other players don't know about.
- Role-Playing—Creating a persona with a background story and interacting with other players to create an improvised story.
- Customization—Having an interest in customizing the appearance of their character. (Yee, 2006, 773)

Based on his analysis of player motivations, Yee argues that the concept of 'addiction' is too simplistic to adequately describe people's complex interaction with digital games. Weinstein and colleagues (2017) conducted a longitudinal study of internet gaming disorder and concluded that unfulfilled needs were the underlying cause of people's 'addiction-like' gaming behavior. Interestingly, they also found that no one who exhibited 'addiction-like' behavior when they were first surveyed did so six months later. This is especially important because this is the first ever longitudinal survey study of internet gaming disorder.

There are multiple debates about video game addiction: does it even exist to begin with? Is it a symptom of underlying disorders or is it a disorder in its own right? These questions and many more are still debated in the academic community (e.g. Aarseth et al., 2016; Bean et al., 2017; van Rooij et al., 2018; Griffiths et al., 2017).

In our view, video games are only addictive in the sense that any human activity that is rewarding can be addictive, i.e. there does not appear to be anything uniquely addictive about video games (Nielsen, 2017). So, as long as other activities, such as sex, work and exercise are not officially considered to be addictive, it is incongruent to argue that games are. The introduction of

purchasable random reward mechanisms[9] into mainstream video games, however, may now force us to reconsider. As mentioned, the introduction of fiat money, random rewards and "pay-to-win" mechanics has caused a significant outcry in the gaming community. This outcry has moved legislative bodies around the world to consider if this trend in gaming is actually gambling. This spawned articles with titles such as "This game is a Star Wars-themed online casino designed to lure kids into spending money" (Phillips, 2017) and "Why EA is Wrong to Say That 'Star Wars Battlefront II' Loot Crates Aren't Gambling" (Kain, 2017).

Gambling is currently the only human behavior that is officially recognized as addictive by the American Psychiatric Association. The World Health Organization, on the other hand, decided to include 'gaming disorder' as a 'disorder due to addictive behavior' in the draft version of the ICD-11 (Bean et al., 2017).[10]

Are gambling mechanisms at play in video games with RRMs?

This section will discuss some of the characteristics of gambling that are believed to explain why people gamble. These characteristics go by different names such as: psycho-structural elements (Karlsen, 2010), biases and irrational thinking (Rogers, 1998), heuristics and biases (Wagenaar, 1988), or cognitive distortions (Toneatto et al., 1997).

The Gambler's Fallacy

According to Wagenaar (1988), this bias occurs when: "the expectation that the probability of winning increases with the length of an ongoing run of losses" (chapter 1, n.p.). In the context

9. Purchasable random reward mechanisms (PRRMs) are simply those with an eligibility condition that requires payment of a currency.
10. It is worth noting that the notion that behaviors can cause addictions is still controversial and was not a part of the DSM until the release of DSM-5 in 2013 and the forthcoming ICD-11. In the ICD-10 (World Health Organization, 1992) and DSM-IV (American Psychiatric Association, 1994) 'pathological gambling' is considered an impulse control disorder.

of RRMs, the similarity is straightforward: a player easily starts to overestimate the chances of receiving the loot that they desire during "a run of bad luck".[11]

Near misses

Schüll (2012) describes how slot machines are designed to artificially produce situations where the player experiences nearly winning by, for example, showing the winning symbols just above or below the losing ones that the player actually got. This is supposed to encourage the player to try again. This same mechanism is arguably also at play in games like Star Wars Battlefront 2 where players first get to see how rare the rewards they are about to receive are, before it is revealed what the actual rewards are and if the players already own those rewards (and thus will not benefit as much from them).

Losses disguised as wins

According to Schüll (2012), "multi-line slot machines" introduced a subtle yet radical innovation. By allowing players to control the number of lines they are betting on, along with the amount they bet, players experience winning more, even though they may be steadily losing. The actual fact of losing is masked by a new kind of "quasi winning" or "losing disguised as winning" (p. 123). Losses disguised as winning is especially interesting in the context of video games and RRMs. When people purchase RRMs in digital games and get "common" rewards instead of "uncommon", "rare" or even "epic" rewards, are they then winning or are they in fact quasi-winning (and actually losing)?

11. An anecdotal story told to one of the authors of the present paper alleges that a Danish FIFA Ultimate team player spent 120,000 Danish Kroner (the equivalent of about $20,000) on RRMs. If such stories are true, they may be instances of the "sunk cost" bias. Unfortunately, we have not been able to verify the story.

Cognitive entrapment

This cognitive bias is also sometimes referred to as “sunk cost” bias; it describes a decision-making heuristic where an individual escalates their commitment to a previously chosen, but unsuccessful course of action in order to justify these prior investments (Rogers, 1998, p. 120). If a player spends $5 on RRMs and does not receive what they were hoping for, they face the choice of either stopping and accepting the loss or spending an additional $5, $10, $100, etc. to recuperate the initial loss. Once a player has started down this path it may be hard to stop.

Illusion of control

Research shows that even in games of pure chance, like lotteries, people are more likely to overestimate their chances of winning if, for example, they are allowed to pick their lottery number themselves (Rogers, 1998). This tendency is seen even more clearly in sports betting, horse betting and the like where people have been shown to falsely believe that they have a better than random chance at predicting winners and losers (Wagenaar, 1988). In video games, a similar effect might arguably be observed when the player is offered the choice between different loot boxes, crates, packs or even llamas.

Chasing

Karlsen (2010) shows that *chasing*, a gambling behavior where recuperating losses are sought by gambling even more, with devastating economic results, arguably also exists in MMOs. Griffiths and Hunt (1998) suggest the chasing behavior in gambling is similar to people trying to beat their own high score in video games. But is this a fair comparison? This will be the subject of the following discussion.

Investments of time versus investments of money

The above-mentioned behavioral heuristics or cognitive biases do not belong exclusively to the realm of gambling. The advice given to designers: "don't be afraid to kill your darlings" is not only good advice for designers, who might keep sinking more and more time into a project that is going nowhere. This would also be sound advice for gamblers who have already lost a lot and are about to further compound those loses with even more gambling. One might also argue that it is good advice for certain people playing certain digital games. Karlsen (2010) makes the argument that RRMs in World of Warcraft can also "entrap" players in similar ways (as an interesting side note, it is worth mentioning that Karlsen also shows how players devise social systems that effectively entrap them even more).

It seems to us, though, that an important difference exists between gambling and gaming when it comes to these cognitive traps. In gambling games, players can lose money that may have otherwise been used to cover important expenses such as food, rent and so forth. In relation to gambling games, one can also take out loans in order to win back money that has already been lost. For someone who has lost more than they can afford on roulette, it may be tempting to try and redeem those loses by taking out a large loan and betting everything on black. However, it is not reasonable to believe that you can win back lost time, if that is what you have invested. In some ways, the old adage that "time is money" is true, but when it comes to gambling, it is also decidedly untrue: one cannot regain lost time by spending more time (though one can try to justify time already spent by spending more).

Similar differences exist in relation to purchasable RRMs. Someone who has unsuccessfully spent a month's salary in an attempt to find a copy of a virtual Cristiano Ronaldo in FIFA Ultimate Team by purchasing RRMs may fall prey to the Gambler's Fallacy and falsely believe that the odds of finding him have magically increased as a result of previous failures to

do so. However, since it is not possible to sell virtual players for real currency, no one would ever think that the already-incurred financial losses could be recuperated with additional spending (even if the sunk cost fallacy might drive players to try to justify previous spending with further spending).

We have yet to find instances of RRMs where there is no reward. In games like FIFA Ultimate Team or Star Wars Battlefront 2, the player may not get what they want, but they always get something (which, in the long run, can be exchanged for the thing they really want, at least in the case of these two games). An interesting question, however, is whether the "something" that one always gets is actually best described as "winning something", or if it is better described as an instance of "losing disguised as winning"? In "multi line slot machines", as described by Schüll (2012), it is possible (though perhaps not straightforward) to identify "losing disguised as winning" because it is possible to compare winnings and losses in cents and dollars. However, in digital games that do not have a market for virtual items it is impossible to evaluate the monetary value of winnings, exactly because there is no market on which to sell them.

The differences in RRMs warrant classification, which will be the topic of the next section.

Classification of random reward mechanisms

To reiterate – even though the idea of RRMs is fairly old and has been used in gaming rather extensively, its current incarnation differs from earlier implementations in that it objectifies and celebrates randomness. Still, this easily recognizable difference is hardly everything there is to the "loot box" phenomenon. As mentioned in the beginning, we believe that in order to facilitate further discussions and regulations of current RRMs (with a specific focus on the relation between gaming and gambling) we have to discern between their different types.

Genuine vs simulated gambling

One key distinction we should start our classification considerations with is the distinction between simulated and real gambling. This is important because some of the games (or sections of games) directly simulate gambling (particular games like poker or roulette, or sometimes even whole casinos) and because of this, use RRMs presented via gambling iconography. This distinction is hardly new, as it was proposed by King et al. (2012) and incorporated in practical categorizations such as ERSB.[12] Using this distinction is also good for practical reasons, because recognizing games containing such sections isn't difficult, although some of the sections of this type may be accessible only after many hours of play.[13] What is especially interesting from our point of view is that the number of games that directly simulate gambling has declined over the years. In particular, none of the games that spawned the current "loot boxes" discussion contain such sections. A natural way of expanding this category would be to look past the representational aspect of games, because focusing only on audiovisual elements seems to be rather naïve and too strongly tied to the particular types of gambling games and machines that are known today (and these can change at any time).

Scholars recognized this problem and proposed the notion of non-standard simulated gaming (King et al., 2012), which boils down to the idea that some activities, even if they do not use gambling iconography, are structurally similar, or in other words, are modelled on gambling (and thus should be classified as gambling simulations).

The need for this category is hardly surprising, as games excel in modelling different domains of human activity, and procuring

12. ERSB defines simulated gambling as follows: "Player can gamble without betting or wagering real cash or currency", https://www.esrb.org/ratings/ratings_guide.aspx
13. Final Fantasy 7 (Square Software 1998) is a good example of this. The game contains a whole casino where players can win in-game money, but it is only accessible after many hours of gameplay.

structurally similar experiences or playable models can often be the main aim of the developers (think of the usage of the word "simulator" in many games, as an indicator of this).

The big problem with this seemingly intuitive notion is that it is far from obvious which properties are to be treated as constitutive for this structural similarity. A good exemplification of a controversial choice of constitutive properties can be found in the literature that compares coin operated games with fruit machines (i.e. Fisher & Griffiths, 1995). Should we treat them as structurally similar just because they happen to be operated in a similar manner (they require the user to insert a coin and push buttons to initiate the game)?

The most radical solution to the problem of the status of RRMs would be to declare all games containing these procedures as simulated gambling (standard or non-standard). It could be argued that, even though RRMs were present in many earlier games, they were simply overlooked or underappreciated by scholars. For example, they were not listed amongst similarities between games and gambling presented by Fisher & Griffiths (1995), and the only paper which specifically addresses the modern RRM implementation was by Griffiths & King (2015) (although it is not treated as a separate category of games). Maybe the only thing that the current prominence of RRMs introduced to the discussion is that they made us more aware of the characteristics that were present in games almost from the beginning. An obvious upside of this radical solution is that it provides a clear-cut distinction and gives the policymakers a convenient classification tool, because it is easy to differentiate between games containing RRMs and those that do not contain them. The downside of this line of argumentation is that mechanisms of this type are very common in culture, and there is no non-arbitrary way of differentiating between their usage in games and other activities based on surprise and randomness. For example, in an ironic twist, one of the newest studies on the relation between gambling and gaming used RRM

as an incentive for the participants in the experiment (the participants could win a $50 gift card) (Macey & Hamari, 2018).

What is even more important is that, even if we treated all games containing RRMs as simulated gambling, we would still have to answer the question as to how simulated gambling relates to real gambling (and how games containing simulated gambling should be treated). The reason is that there is no obvious general relation between simulated activities and real activities that can be discovered without empirical studies. Players simulate a plethora of things, from killings through to Formula 1 racing to farming. It is possible that some of these activities influence changes in their behavior in real life, but it is impossible to speculate on the specifics of these changes.

The problem of the relation between simulated gambling (no matter if representational or structural) and real gambling can be analyzed from two different angles. The first angle is empirical – as we said, we still need to study the effects of simulated gambling on future players' behavior. But there is also a second, conceptual angle, as we can wonder if it is possible that some games transcend the boundary between simulation and the reality they depict and simply become a form of gambling. It is easy to see that this particular question continues to be at the heart of the current discussion on the effects of RRMs.[14]

One attractive way of singling out suspicious cases would be to say that RRMs slide into gambling whenever a game containing it involves real currency. This constraint seems natural because it is compliant with some of the existing social practices (a poker game played by a family with Monopoly money is not typically considered gambling) and existing regulations.

This perspective enables us to reframe the question about the relation of games to gambling in a more precise way: are games that combine RRMs with real currency a form of gambling? It

14. See (Hood, 2017, Wiltshire, 2017, BBC News, 2017).

is worth pointing out that this line of argumentation has led to institutional investigations[15] and remains the most controversial aspect of RRMs amongst users and journalists (Cross, 2017a). Unfortunately, talking about the involvement of "real currency" or "real value" without additional restrictions is hardly helpful, as it only introduces confusion to the discussion.

However, it is not only fruitful to distinguish between games that allow the player to spend money and games that do not; but also, to distinguish between games that allow players to 'withdraw' money or virtual items that can be translated into other currencies. The Danish Gambling Authority does not consider loot-boxes in Star Wars Battlefront 2 to be gambling because the content of the loot-boxes cannot easily be exchanged for money, whereas skin-betting[16] in Counter-Strike: Global Offensive (CS:GO) (Valve, 2012) is considered gambling because the skins can be changed into currency relatively easily. According to the Danish Gambling Authority, skin-betting is covered by the Danish Gambling Act, which regulates gambling games (2017, n.p.), but it is unclear from its statement whether the agency views the purchase of access to RRMs in CS:GO to be gambling, or if it only becomes gambling when the skins are used as currency in gambling games. In the words of the agency:

> The winnings obtained in a loot box in Star Wars Battlefront 2 cannot be converted into financial means, as the fictional items in the loot box cannot be sold or otherwise converted into money. Therefore, loot boxes in their present form in Star Wars Battlefront 2 are not covered by the gaming act. This is also the reason why skinbetting [sic.] in connection with computer games such as Counter Strike Global Offensive etc. are covered by the Danish Act on Gambling. They are covered by the Act on Gambling

15. A good example of this is the intent expressed by a representative of the Belgian Gaming Commission who pointed out the danger of mixing real money and gaming (VTM Nieuws, 2017). Links to two other similar cases can be found in Good (2017).
16. "Skins" are purely cosmetic items in video games that change the appearance of items, characters, etc. Skin-betting is the wagering of skins; usually on third party sites.

because skins from these games can be sold on different websites, and thus converted into money. (Danish Gambling Authority, 2017, n.p.)

The legal legitimacy of this position by the Gambling Authority was recently cemented when the agency won a case in court to have 24 illegal gambling sites closed, six of which were skin-betting sites for games such as Dota 2 and CS:GO (Danish Gambling Authority, 2018). This case demonstrates the importance of discussing what "real value" is in terms of virtual items and currencies. This will be the focus of the next section.

"Real" money and "real" value

First of all, we have to explain precisely how "real value" or "real currency" is to be understood in this discussion. The easiest way to approach this problem is to start with a simple question: what is the opposite of "real" value in this particular context? It is rather obvious that it should not be presented as the opposite of digital currency. The fact that all of the games that are involved in the current public discussion do not allow the player to put physical money in the slot (which makes them dissimilar to fruit machines) is hardly relevant to the issue at hand, as contemporary gambling is also often fully digitized (King et al., 2012).

Another option would be to juxtapose "real" money with so called "in-game" money, or virtual money that players use while playing. On the face of it, this contrast seems quite straightforward, but it is important to be cautious with this classification, as there are important differences between the virtual currencies used by developers, which we believe to be crucial for our discussion. If you look at many contemporary games (especially in the mobile market) you might be surprised by the number of different in-game currencies they contain. What is important from our point of view is that they typically contain at least two different currencies, and even though both can be spent in the game, one of them can also be earned outside of the game (for example with a purchase from

the platform creator's store).[17] In practice, this second, purchasable currency functions as a proprietary currency, usable only in one place (but still related to other currencies, since its value can be easily calculated in terms of fiat currency). Note that the practice of using additional proprietary currencies is something that is typical for gambling (casino tokens is the classic example of this), so it seems to be highly relevant to the discussion. In order to avoid confusion from the usage of many related, overlapping concepts, such as "virtual", "digital", "proprietary" "in-game" etc., we propose to differentiate between currencies (or any tokens of value) that are either "isolated" from, or "embedded" in, the everyday economy. The difference should be relatively easy to grasp: a token that is embedded in the everyday economy has a relation to other objects embedded in this economy, which makes it possible to establish its value in different currencies. For example – if the currency the player uses in-game can be bought or sold with one of the existing accepted currencies, it can be said to be embedded in the economy. Contrary to this, tokens that are isolated from the economy have no established relation to any other objects of value outside of the game. This difference can be easily illustrated by systems implemented in mobile games. As we already pointed out, it is fairly typical for games of this type to contain different types of currency. It is very common for one of these currencies to be embedded in the economy, and for the others to be isolated from it. What this means in practice is that only one of the currencies can be purchased with an existing accepted currency and that the currencies are not related to each other or that the relation between them is restricted.[18]

It should also be pointed out that in some cases players can exploit the game by changing the reward type – from isolated to embedded or from embedded to isolated. The first case can be illustrated

17. Sometimes it cannot be earned in-game at all, or it is dispensed randomly.
18. For example, the popular mobile game Clash Royale (Supercell, 2016) contains two currencies: gold and gems. It is both possible to buy gems with real currency and gold with gems (therefore buying gold indirectly with real currency), but it is not possible to buy gems with gold.

by the phenomenon of "gold farming" or selling virtual items obtained via RRMs on online auctions. The second case can be illustrated by a practice of hacking or exploiting a game containing purchasable RRMs, so they can be triggered without paying.

Buying, selling or both?

It is not enough to talk about the involvement of real currencies, as it also should be specified if the involvement concerns only the eligibility condition, only the reward or maybe both. In other words, we have to decide which side of the diagram has to include real currency for a given game to be classified as similar to gambling. On the face of it, this may seem like nitpicking, but even a cursory glance at the state of discussions on the subject shows that the intuitions and preconceptions of the disputants can be very different. Some of the existing popular and academic discussions focus mostly on eligibility conditions.[19] Others focus mostly on the reward side of the diagram and argue that a given activity should be considered gambling only if the reward the player is getting has real economic value.[20] Contrary to this, for some of the disputants, the sheer fact that the players are guaranteed a reward (as RRMs by definition give something to the player) excludes games containing RRMs from the class of gambling games.[21]

Paying attention to the difference between the value of the eligibility condition and the value of the reward becomes even more important in our context once we realize that RRMs disrupt

19. For example, in Gainsbury et al.'s (2015) taxonomy the ability to trigger RRM with a real currency is the top classification condition. Similarly, Griffith & King (2015) argue that RRMs fulfill the conditions for gambling if "[...] purchases to participate are made rather than being given free spins or keys, or earning them through skillful gameplay."
20. This is the reason provided by the Gambling Compliance office of New Zealand's Department of Internal Affairs for not treating loot boxes as gambling (Cross, 2017b). The same reason was used by Kuchera, (2017b) to declare the RRMs used in PlayerUnknown's Battlegrounds as gambling.
21. This reason was presented by the Entertainment Software Rating Board in an e-mail to the popular gaming site, Kotaku (Schreier, 2017).

the connection between the payment and the value of the reward. In any normal transaction (for example in any regular in-game purchase of some additional game content) the distinction between the payment and the value of the object is not necessary, because the payment itself can be used as a measure of this value. To simplify – we could assume that the value of the game content is whatever the company charges for it. But the moment we introduce an RRM procedure as an intermediary between the payment and the reward, the evaluation of value based on the price of the eligibility condition becomes impossible[22] because it varies from user to user. We could try to minimize this by disclosing the probability ratio of a given reward (a regulation which has been implemented for RRMs in several Asian countries and by Apple in the app-store), but even this solution does not eliminate uncertainty completely. What it means in practice is that in case of an RRM we have to evaluate the value of the eligibility condition and the real value of the reward separately.

Taking both distinctions into account (the distinction between embedded and isolated economic value, and the distinction between the value of the eligibility condition and the value of the reward) we can classify games containing RRMs as belonging to four distinct categories (see Table 1 below).

As can be seen in Table 1, one distinction we consciously avoided (even though it is often raised in popular discussions of the subject) is the difference between so called “pay-to-win” rewards and “cosmetic” rewards. In a nutshell, the difference between these implementations hinges on whether the objects awarded to the player affect the mechanics on the game or only its aesthetics. A typical example of the former is the ability to win a new weapon for a competitive shooter game.[23] A typical example of the latter is

22. Or very complicated. A good example of consumers’ attempts at establishing the price of a game using RRMs can be found in Kamper, (2017).

23. Hence the term “pay-to-win”. It implies that, in order to win in a given game, a player simply has to purchase more than their competitors. Note that similar problems arise

the ability to get a new costume for a game character. The reason we do not address this difference in our classification is that it concerns all additional content that can be purchased in games (independently of whether they are acquired via RRMs or not), so it does not seem crucial for our discussion.[24]

Type	Resources (required for achieving the eligibility condition)	Reward	Example
I-I	Isolated (non-purchasable)	Isolated (non-sellable)	Horizon Zero Dawn, Diablo 1, Diablo 2,[26]
I-E	Isolated (non-purchasable)	Embedded (virtual sellable object)	Diablo 3 (with auction house)
E-I	Embedded (real money purchase)	Isolated (virtual unsellable object)	Overwatch, Star Wars Battlefront 2, FIFA 17 Ultimate Team
E-E	Embedded (real money purchase)	Embedded (virtual sellable object)	PUBG, Team Fortress 2, CS:GO

Table 1: Different kinds of implementations of random reward mechanisms (RRMs).

An important advantage of our typology is that it helps us to avoid some of the conceptual pitfalls typical for the discussion of loot boxes.

in the context of card games (as the player who is able to buy any card increases their odds of winning).

24. A less important reason we ignore this difference is that the difference between mechanics and aesthetics cannot be presented as clearly as the distinction implies. For example – the clothing one can buy in the popular game, PlayerUnknown's Battlegrounds, seem to be purely aesthetic. And yet it is hard to argue that any modification that changes the visibility of the player affects their odds of winning. After all, this is how camouflage works.

First of all, it enables us to single out the implementation of RRMs typical of earlier games (I-I). How exactly games containing this implementation relate to gambling remains to be seen, but every study that intends to focus on the newer implementations of RRMs should take this difference into account.

Secondly, it shows that there is actually only one implementation of RRMs that is functionally similar to gambling (E-E) and that, surprisingly, games that spawned the current controversy do not contain this particular implementation (because the rewards they give to the player are not embedded in the economy). It is also important to observe that (at least in some cases) the structural similarity between the E-E form of implementation of RRMs extends to the amounts of money involved in the process. For example – the cost of a crate in PUBG can be as low as one euro, but the player could hope to win an object they can sell for as much as 1000 euros, which is functionally very similar to a lottery.

Thirdly, it shows that the analogy between modern RRMs and collectible cards is somewhat faulty, as most of the implementations of RRMs (I-I, I-E, E-I) reward players with economically isolated objects. Interestingly, this aspect of RRMs cannot be treated simply as a side effect of digitization, because some of the existing implementations give the player the ability to sell their rewards on the market.

Needless to say, having a classification is only the first step to answering the question as to how similar games that contain RRMs are to gambling. A full answer to this question demands further empirical studies. Still, we believe that one important preliminary condition, which any further serious study of this phenomenon should meet, is that it does not talk about RRMs *tout court*, but that it studies different implementations of it separately. It is thus crucial that we do not conflate the four types of RRMs we listed above as this may severely affect the results.

Conclusion

This paper has introduced four distinct conceptualizations of random reward mechanisms (RRMs) in digital games that relate to fiat currency or real money in the following ways:

1. randomized rewards not for sale or purchase;
2. randomized rewards that can only be sold, not purchased;
3. randomized rewards that can only be purchased, not sold (i.e. pseudo-gambling);
4. randomized rewards that can both be sold and purchased (i.e. a functional equivalent of gambling).

The central point of our paper is that the debates over RRMs should not conflate them, as the differences between the four types we distinguish are important in the context of gambling. Furthermore, we argue that only RRMs that are embedded in the broader economy, in terms of both the eligibility condition as well as the reward, can be said to be structurally similar to gambling. In other words, only games where the player can turn fiat money into randomized rewards and then turn those rewards back into fiat currency can be considered gambling.

Thus, not all games that feature RRMs are instances of gambling. However, as we have argued, the cognitive distortions that are said to underpin gambling behavior can also be found in RRMs in digital games.

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7.

Exploring Cultural Differences in Game Reception

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ABSTRACT

In this paper we present the first results of an ongoing research project focused on examining the European reception of Japanese video games, and we compare it with the reception in Japan. We hope to contribute towards a better understanding of how player perception and evaluation of a game is influenced by cultural

background. Applying a grounded theory approach, we conducted a qualitative content analysis of articles from German video game websites, user comments responding to articles, as well as Japanese and German user reviews from the respective Amazon online stores and Steam. Focusing on the reception of three Japanese RPGs, our findings show that considerable differences exist in how various elements of the games are perceived between cultures. We also briefly discuss certain lexical differences in the way players write about games, indicating fundamental differences in how Japanese and German players talk (and think) about games.

Keywords

Japanese games, reception, Germany, user reviews, QDA, grounded theory

INTRODUCTION

In recent years, there has been a rise in attempts to utilize the vast amounts of text on digital games available online, by using natural language processing (NLP) methods. Such bottom-up approaches have the potential to contribute towards a better understanding of "what we talk about when we talk about games" (Ryan et al., 2015). However, as with other media, the way players experience, interpret and evaluate video games is inextricably linked to their cultural backgrounds (Consalvo, 2006, 127, cf. Rohn 2009, 84-87), creating a need to examine exactly how the way players "talk about", perceive, and evaluate games differ, based on a player's culture.

This paper reports the first results of an ongoing research project, launched in November 2016. The main goal of the project is to examine the European reception of Japanese video games, broadly defined as games developed by Japanese developers, and to compare it with their reception in Japan. We hope to contribute

to a better understanding of how culture influences the way we experience, evaluate, think and talk about games.

In the scope of this study, we focus on a comparison of the German and Japanese reception of three Japanese role-playing games (JRPG), *Persona 5* (Atlus 2016), *Legend of Heroes: Trails of Cold Steel* (Nihon Falcom 2013) and *Legend of Heroes: Trails of Cold Steel II* (Nihon Falcom 2014). To examine the "German reception", we first analyze and contrast the way these three games are depicted in the professional German gaming media with how they are reflected upon in German user reviews. In a second step, we compare the German reception with reviews written by Japanese players. In contrast to Zagal and Tomuro (2013), we conduct a qualitative analysis of the content, combining a grounded theory approach with a qualitative content analysis, aided by QDA software. This allows us to employ a high level of granularity to account for subtle differences (Corbin and Strauss, 1990; Schreier, 2014; Strübing, 2014).

Our choice of focusing on Japanese games occurs with a background of the perceived dichotomy of Japanese and "Western" (i.e. North American and European) games, that has taken deep roots in broader video game discourses, promoting a "binary perspective" (Pelletier-Gagnon, 2011, 84) on games, as well as on players. This dichotomy is based on notions of the uniqueness of Japanese games, (i.e. their "Japaneseness"). While the idea of "Japaneseness" has repeatedly been subjected to scholarly scrutiny (e.g. Consalvo, 2006; Navarro-Remesal and Loriguillo-López, 2015; Consalvo, 2016), the concept appears deeply ingrained in Japanese and Western players alike, affecting their reception of Japanese games. Research to understand the relationship between culture and game reception has mostly been directed towards the US and Japan (e.g. Ngai, 2005; Cook, 2009; James, 2010). Shifting our attention to Europe, we begin with an analysis of the German reception of Japanese games, with Germany being the biggest market for games in Europe (Newzoo, 2016). Iwabuchi (2002, 94) argues that the majority of exported

Japanese products are "culturally odorless", to appeal to a wider audience (cf. Grau de Pablos, 2016, 12-18). Our decision to begin with a study of the JRPG genre is based on the perception of it being "uniquely Japanese" (Schules, 2015), possibly contributing to the difference in the Japanese and German reception.

We chose *Persona 5* due to its universal acclaim, and its contribution in reversing discursive trends of a declining Japanese games industry, unable to cope with Western players' demands (e.g. Richey, 2014; Stuart, 2014; US Gamer Team, 2013; Byford, 2014). *Persona 5* was nominated in several categories in *The Game Awards 2017*, winning the title of Best RPG (The Game Awards, 2017). The recent success of *Persona 5* and other Japanese titles such as Nintendo's *The Legend of Zelda: Breath of the Wild* (2017a) and *Super Mario Odyssey* (Nintendo 2017b), Platinum Games' *Nier: Automata* (2017) and Koei Tecmo's *Nioh* (2017), have led commentators to describe 2017 as the year marking the "renaissance" (Lennon, 2017) or "comeback" (Webster, 2017) of Japanese video games in the West, and the "year Japanese RPGs caught up to Western RPGs" (Leack, 2017). The critical and commercial success of *Persona 5*, having sold more than two million copies worldwide as of December 2017 (O'Connor, 2017), indicates a player base well beyond its predecessors and most other Japanese RPGs, allowing us to include the opinions of a diverse audience. Because of its release date in the West (April 4th, 2017) the game is also more strongly represented in our dataset than other JRPGs.

Our focus on the first two entries in the *Trails of Cold Steel* (ToCS) series is because of both their similarities and differences to *Persona 5*. All three games are marketed as JRPGs in Germany, and were released without a German localization. They share certain gameplay characteristics, such as a turn-based combat system and social simulation elements (i.e. continuous interaction with certain NPCs provides in-game bonuses and unlocks story events), as well as an art style reminding German players of Japanese manga and anime. As is common in wider Japanese pop

culture, *Persona 5* and *ToCS I* are set in a high school setting, the main characters being students. These similarities are also noted by German users, who often compare the games to each other. *Persona 5* was published for PlayStation 3 and 4 (2016 in Japan and 2017 in Germany). *ToCS I* and *II* were released for PlayStation 3 and PlayStation Vita (Japan, 2013/2014; Germany, 2016/2016). *ToCS I* was also published on Steam (2017). All three games were localized for Western markets after their release in Japan ("post-gold localization"), hinting at the developers' primary focus on the Japanese market. However, while *ToCS I* and *II* are set in a fantasy world, *Persona 5* depicts a fictional rendering of real-world Tokyo. While *Persona 5* has received widespread commercial success in the West, *ToCS I* and *II* remain niche titles and consequently have far fewer user reviews written for them.

Game	Amazon_DE	Amazon_JP	Steam	Metacritic (Metascore)	Famitsu Score
Persona 5 (PS4)	4.3/5.00 (60 reviews)	4.3/5.00 (1,295 reviews)	-	93	39/40
ToCS (PS3)	4.8/5.00 (14 reviews)	3.4/5.00 (165 reviews)	95% positive reviews (of 1,330)	80	34/40
ToCS II (PS3)	5.0/5.00 (4 reviews)	3.3/5.00 (118 reviews)	-	90	31/40

Table 1: Overview of the critical reception of the considered games (as of February 1st, 2018).

Comparing *Persona 5* and *ToCS* also serves as an interesting case because of their respective critical evaluation (see Table 1). *Persona 5* was universally praised by the gaming media and holds a rating of 4.3/5.00 in the Japanese Amazon store. *ToCS*, while also being positively received by critics, received a worse score from Japanese users. However, in Western scores of aggregated user reviews (e.g. Steam), *ToCS* is perceived in a largely positive

way, with both games also holding higher aggregate scores on the German Amazon store than *Persona 5*. Including *Persona 5*, *ToCS I* and *ToCS II* in our analysis, provides us with a set of games with great similarities in respect to mechanics and (to a lesser degree) visual design and narrative elements. All of these have been praised by critics but are very different in their level of (international) recognition and commercial success. As such, our selection of games is close to a most similar case design, which makes it possible to more clearly identify and contrast the differences in their reception.

In the following sections, we will first briefly discuss the methodological framework of our study. Following this, we introduce our results by (1) comparing the German media with the German user reception, (2) contrasting the German and Japanese reception, and (3) discussing some lexical differences we encountered in our analysis. After discussing some selected findings, we present our conclusion.

METHOD

Data Gathering

Our dataset is drawn from nine German video game websites (see Table 2), chosen based on their popularity, i.e. viewer ratings (Statista, 2017; Alexa Internet, 2018). Maniac.de is included because of its strong focus on Japanese games and its function as a hub for player communities with preferences for Japanese games. All the included websites function as portals for game-related news and reviews. Four of them are related to printed gaming magazines, while Spieletipps also serves as a community to provide tips and cheats for games.

Source	URL	Print Media
4Players	www.4players.de/	No
Computer Bild	http://www.computerbild.de/	Yes (Computer Bild Spiele)
GamePro	http://www.gamepro.de/	Yes
GameStar	http://www.gamestar.de/	Yes
Gamona	http://www.gamona.de/	No
Giga Games	http://www.giga.de/games/	No
IGN	de.ign.com/	No
Maniac.de	https://www.maniac.de/	Yes (M! Games)
Spieletipps	https://www.spieletipps.de/	No

Table 2: Overview of the sources for the German media articles.

The data used in this study is part of a larger, continuously growing corpus of German games-related media items, and also includes analyses of non-textual media, like YouTube videos or Twitch.tv streams, traditional (printed) gaming magazines, and player communities. For this analysis, we draw on the full text of 166 German media articles (16 reviews), 1,060 user comments, written in response to these articles as well as 89 user reviews from Amazon.de and Steam (see Table 3) gathered between November 2016 and January 2018. In total, the dataset consists of 393,124 words. The analyzed user reviews constitute the totality of German language user reviews written on *Persona* 5 and *ToCS* on the German Amazon website and Steam, as of February 1st, 2018. Our corpus of media articles includes all preview and review articles published on the indicated websites that include either the terms “Persona 5” or “Trails of Cold Steel”, as well as all news articles published between January 2017 and January 2018.

To contrast our findings with the German reception, we also analyzed 80 Japanese user reviews, taken from Amazon.co.jp, 40 for *Persona 5* and 20 each for *ToCS I* and *II*. As of February 1st, 2018, there were 2,996 Japanese user reviews for *Persona 5* and 283 for both *ToCS* games combined in the Japanese Amazon store, indicating their different levels of commercial success. We included the Japanese user reviews that appeared to be "most helpful" by other users, as they are more likely to represent the dominant Japanese discourse on the games.

	Persona 5			**Trails of Cold Steel (I+II)**		
	Amazon	Media	Comments	Amazon/Steam	Media	Comments
Germany	60	102	816	29	64	244
Japan	40	-	-	40	-	-

Table 3: Overview of the dataset used for this study.

Data Analysis

Methodologically, we conducted a qualitative content analysis (see Schreier, 2014) aided by MAXQDA, a software program for qualitative data analysis. We divided our text corpus into six different document groups based on the game, the origin of the content (professional media or user generated), and the country (Japan or Germany). As the inclusion of both *ToCS* games is primarily a means to have more data available to contrast with the vast amount gathered for *Persona 5*, and our prior analysis indicated that both games are commented upon in very similar ways, we have compiled them into one document group for easier visibility. The structure of our corpus makes it possible to compare German user reviews with German (professional) media articles and the German (user) reception with the Japanese one.

Employing a grounded theory approach (Strübing, 2014), we first proceeded with the manual open coding of the corpus using the "code in-vivo" function of MAXQDA. The resulting codes taken

directly from the text were continuously compared, subsumed into more abstract codes, and grouped into categories according to thematic proximity (axial coding). To allow for an easy comparison of the Japanese and German data, we decided on a system of low-level granularity codes below the categories, and sub-codes for higher granularity. Coding itself was carried out by two researchers independent of each other, who later compared and discussed the results and adapted the coding scheme based on mutual consent. In our analysis, we first compare the German user reception of *ToCS* and *Persona 5* with the discourse in the professional media articles. After that, we compare the German with the Japanese (user) reception.

Our dataset does not include a statistically representative sample of Japanese user reviews, nor does the qualitative approach taken in this study lend itself to a quantitative interpretation. The results presented below, such as the frequency of codes, should therefore not be understood as statistically significant or representative. Instead they are used to structure and visualize our qualitative findings.

RESULTS

Codes and Categories

The first result of the analysis is the various codes. On a broad level, it was possible to categorize all statements in the corpus, that relate to one of the games, into the following nine categories:

Audio-Visual includes all comments that were made concerning the visual look of the game or its sound design, especially its soundtrack. Not included are observations concerning voice acting, which were, depending on their context, sorted into *localization* or the *characters* sub-code in the *Story/Scenario* category.

Rules/Mechanics includes all comments, made regarding the game mechanics or rules. This includes what most German users refer to as "gameplay" and Japanese users as "systems" (*shistemu*).

Story/Scenario delineates all comments made about the game setting or story. This includes comments made about the characters in the game.

External relates to all comments that refer to the larger contextual frame or ecosystem in which the game exists. Comments that are not targeted at a game's content or rules, but instead focus on its broader reception or surrounding commercial structure are sorted into this category.

Comparison refers to statements in which the games are compared with other games, either direct predecessor(s) or completely different titles.

Japaneseness includes all statements that are made in relation to the Japanese nature of a game.

Detailedness/Craftsmanship refers to comments made about the "attention to detail" put into a game or the idea of games as the product of "craftsmanship". This refers to what Zagal and Tomuro (2013, 5) refer to as "polish".

Preview delineates comments in which expectations towards the games are voiced prior to release.

Positive and *Negative* are used as markers to signify the context in which other categories are used. Thus, they were devised to overlap with other codes, creating an easy way to identify in which context passages coded with other codes were used.

As we employed a bottom-up approach to coding, the categories we arrived at were directly derived from the textual expressions evident in our corpus. Higher granularity codes (themselves the result of subsuming codes closer to the text) are generally more

suitable units of analysis. The superordinate categories mentioned above are constructs to more easily visualize and structure our findings. The *Rules/Mechanics* category, for example, consists of codes such as *Gameplay/System (General)*, *Social Simulation*, *Difficulty*, *Time/Pacing*, *Minigames*, *Dungeons/Level Design*, *Combat System* or *Controls*. Sub-codes for *Minigames* would be statements like "Fishing was fun" or "the batting game was too hard".

German Gaming Media and User Reviews

MAXQDA offers the ability to visualize how often codes overlap. By using the codes *Positive* and *Negative* as markers for the context in which other codes were used, it is possible to create an intuitive visualization of how the evaluation of the games differs across the groups under investigation (see Figure 1 and 2). The biggest difference between the content of the professional media articles and the user-generated content lies in the greater frequency of text coded as *Negative*. User reviews and comments tend to display a greater variety in their evaluation of both *Persona 5* and *ToCS*.

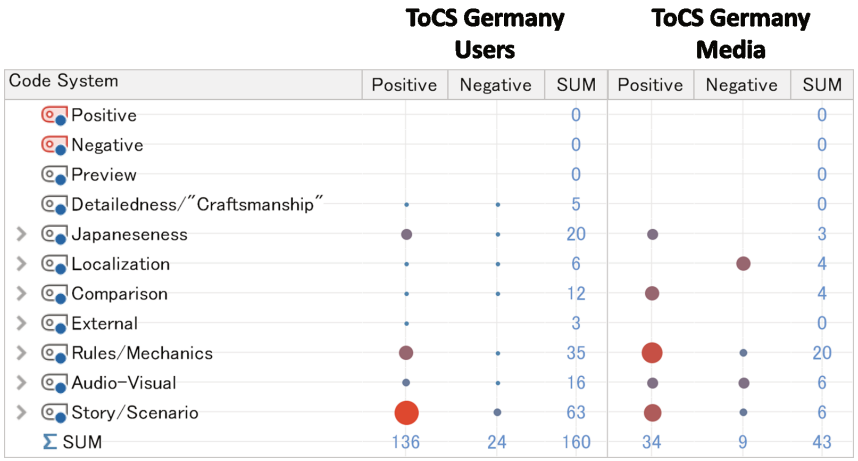
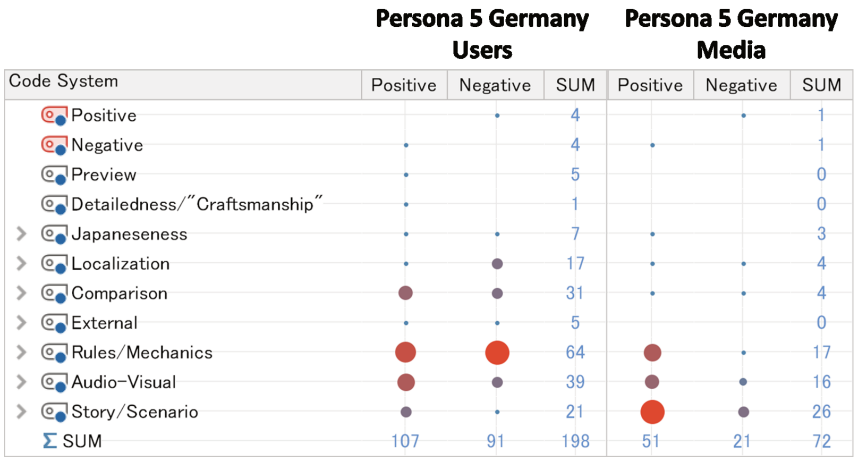


Figure 1: Comparison between the MAXQDA code-relation matrixes of German media and user reception of ToCS using the Positive/Negative codes as demarcations for context. The size of the dots is calculated based on the relative frequency of code pairings inside a column.

Examining the differences for *ToCS*, it first becomes apparent that the localization of the games is perceived as predominantly negative in the user reviews and comments. While the professional reviews criticize the lack of a German localization, they still emphasize the "outstanding" localization by the games' American publisher, XSEED Games. In contrast, such praise was not evident in the analyzed texts generated by users. Instead, they focused solely on the lack of a German localization, with many comments, written in relation to professional articles, arguing that the lack of a German translation for text-heavy games like *ToCS* is one of the main reasons preventing them from buying the games. Aside from the localization, negative statements against *ToCS* were also seen in relation to its visual presentation, with some users criticizing the "anime look" and its perceived technological inadequacies in comparison to newer titles.



Code System	Persona 5 Germany Users			Persona 5 Germany Media		
	Positive	Negative	SUM	Positive	Negative	SUM
Positive			4			1
Negative			4			1
Preview			5			0
Detailedness/"Craftsmanship"			1			0
Japaneseness			7			3
Localization			17			4
Comparison			31			4
External			5			0
Rules/Mechanics			64			17
Audio-Visual			39			16
Story/Scenario			21			26
Σ SUM	107	91	198	51	21	72

Figure 2: Comparison between the German media and user reception of Persona 5.

A more pronounced difference between professional and user reception can be seen for *Persona 5*. German user statements appear to be more often critical of the game than the German gaming media. The biggest point of contention in the professionally written articles and reviews related to the game's characters and their interactions, which were perceived as not leaving enough room to depict "normal" adolescent conversations, being instead predominantly focused on their role as "phantom thieves". In contrast, belonging to the *Rules/Mechanics* category, German players' criticism first and foremost deals with the game's long duration (more than 100 hours for a playthrough) and subsequent perceived lulls in the story midway. The long duration was seen to be hard to integrate into the limited amount of free time available to the users. In relation to this, much criticism was aimed at the restrictive design for saving the game state. *Persona 5* employs a system of "safe rooms" in its dungeons, similar to save points in other games. Many players expressed dissatisfaction with the distance between these safe rooms, and their inability to save between them, which was seen as incompatible with players' lifestyles. With *ToCS*, some users also expressed disapproval of

the game's "anime style", a complaint that cannot be found in the professional media articles.

In both cases, for *ToCS* as well as for *Persona 5*, the discussion of the games in the professional media and in user reviews and comments focused on the same topics and evaluated the game largely in the same way. While user statements tended to cover a wider variety of opinions than were present in the professional gaming media, especially in regard to negative views of the game, the similarities are nevertheless more pronounced than the differences. In particular, user reviews on Amazon were shown to be thematically close to professional gaming media reviews, with similar standards of evaluation. While stylistic differences exist, user reviews cover most of what is written in professional reviews, while providing a platform for opinions deviating from the mainstream. In the sections below, when examining the differences between the German and Japanese reception, we therefore refer simply to the "German reception", and only differentiate between user and professional content when it is necessary for the analysis.

Japan and Germany

Comparing the frequency of codes in the different document groups provides a first impression of the differences evident in the reception of the games in different cultural contexts. One of the most obvious differences can be found in the general evaluation of the games. While the respective frequency of the *Negative* and *Positive* codes is not necessarily an indicator of a game's overall evaluation, the codes still provide a rough estimate of how much space in (user) reviews or comments is allocated to the discussion of perceived negative or positive points of a game.

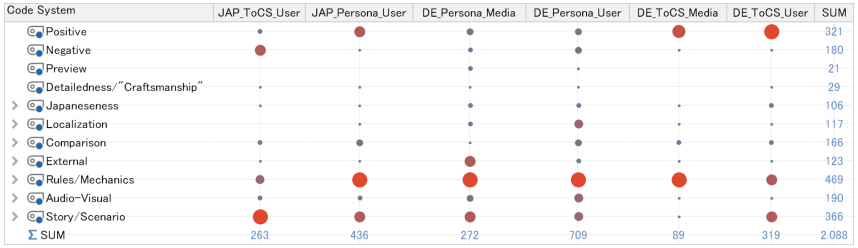


Figure 3: MAXQDA code matrix showing the frequency of codes for all document groups. The size of a dot signifies the relative frequency within a document group.

As Figure 3 shows, the only document group in which more text segments were coded *Negative* than *Positive* is the group consisting of Japanese Amazon user reviews of *ToCS I* and *II*. Generally, this is consistent with the overall rating for the games (see Table 1), as aggregated Japanese user reviews show a worse score than the German ones. It can also be noted that German user reviews and professional media articles on *Persona 5* include more text parts coded as *Negative* than the Japanese counterpart. Another fundamental difference between the Japanese and German reception can be seen in the high frequency of the *localization* code in the German sources, especially in the user-generated texts about *Persona 5*. 84 out of 709 coded text segments in this document group were written in relation to the game's localization.

Aside from the *Positive/Negative* demarcation, the category with the greatest frequency in all document groups, except for the Japanese user reviews on *ToCS*, is the *Rules/Mechanics* category, indicating the large amount of space allocated to the discussion of gameplay and mechanics. The *Audio–Visual* category appears with greater frequency in the German sources for *Persona 5*. In contrast, the *Story/Scenario* category appears very prominently in the Japanese user reviews on *ToCS*, but comparatively less frequently in the other document groups, especially the German media articles on *ToCS*.

Figure 4: MAXQDA code matrix with frequent categories shown.

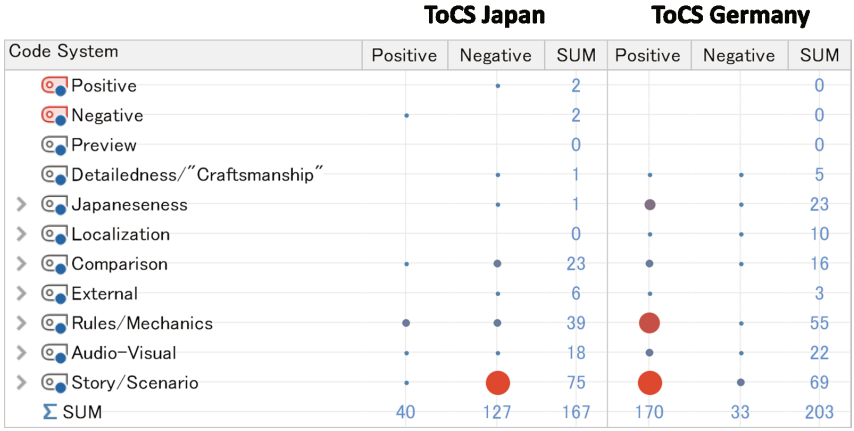
Taking a closer look with a higher level of granularity (see Figure 4) allows for a more differentiated analysis. The relative prominence of the *External* category in the German media reception of *Persona 5* is largely due to the many references made to the critical acclaim of the title by the gaming press, including articles about The Game Awards 2017. The *Rules/Mechanics*

category, when regarded in detail, shows interesting results as to the thematic range of topics discussed in user reviews and media articles. In general, Japanese user reviews tend to be more detailed in their evaluation of a game's mechanics, discussing topics such as balancing the effect of different difficulty levels on a player's experience, minigames included in a game, and its controls. For example, eleven Japanese user reviews commented positively on the button mapping employed in *Persona 5* during combat, praising it as intuitive and elegant, something that is completely absent in the German reception of the game.

Looking at the *Story/Scenario* category, further differences between the Japanese and German reception become apparent. First, conforming to the code of *Gender*, the lack of an option to choose a female protagonist was discussed by German users and the media. This discussion was absent in the Japanese user reviews. The code *Setting/Topics* code refers to statements pertaining to either the setting in which a game's narrative is placed, or the broader topics discussed in it. Especially among German users of *Persona 5*, a great overlap was seen between these two nominally different categories, as they discussed the setting of the game (Tokyo), and tied it together with a discussion of how serious topics presented in the game, such as sexual harassment, are related to the Japanese setting; thereby providing a look at how Japanese society is perceived by German players and gaming media.

A last point of difference that can be gleaned from this matrix is the great frequency with which the coding *Time/Pacing* appears in the German (user) reception of *Persona 5*. Again, these two nominally different categories (duration of playthrough and pacing of content and story) are de-facto used conjointly by many players. As stated above, the great length of the game was mentioned very frequently, often together with a discussion of which parts of the game feel too protracted. Several German users have referred to problems with the pacing in the mid-to-late game. While they do not elaborate on their understanding of pacing, it seems to

generally describe a feeling of repetitiveness in gameplay and lulls in the story. While *Persona 5*'s long duration was also noted in Japan, criticism was exceedingly rare.



	ToCS Japan			ToCS Germany		
Code System	Positive	Negative	SUM	Positive	Negative	SUM
Positive			2			0
Negative			2			0
Preview			0			0
Detailedness/"Craftsmanship"			1			5
Japaneseness			1			23
Localization			0			10
Comparison			23			16
External			6			3
Rules/Mechanics			39			55
Audio-Visual			18			22
Story/Scenario			75			69
Σ SUM	40	127	167	170	33	203

Figure 5: Comparison between the MAXQDA code-relation matrixes of the Japanese and German ToCS reception using the Positive/Negative codes as demarcations for context.

There are also pronounced differences in how Japanese and German users evaluate the games (see Figure 5). In the German reception of *ToCS*, the *Story/Scenario* category is predominantly used in a positive context, while it is decidedly negative in the Japanese user reviews. Another difference that becomes apparent is the mostly positive context of the *Rules/Mechanics* category.

Japanese users frequently criticize the story of *ToCS* as being repetitive and stereotypical, with characters that lack depth and appear to be unnecessary to the story. The game was often compared unfavorably to its predecessors in the *Legend of Heroes* series, especially in regard to the perceived drop in quality of character dialogue. Furthermore, great criticism was levelled at the dissonance perceived between the settings of both games (military academy and civil war) and the plot, which, according to the Japanese users, fails to convey the severity and hardships of war, being too naïve in its presentation. Lastly, the ending of both games was seen to be unsatisfactory and an unnecessary

cliffhanger. In stark contrast, the game's story was almost universally praised by the German gaming media and users alike. The plot was seen as interesting, the characters as well developed, and the setting intriguing. One user compared the game's story to the popular drama, *Game of Thrones*, in its complexity; a polar opposite to the reception by Japanese users.

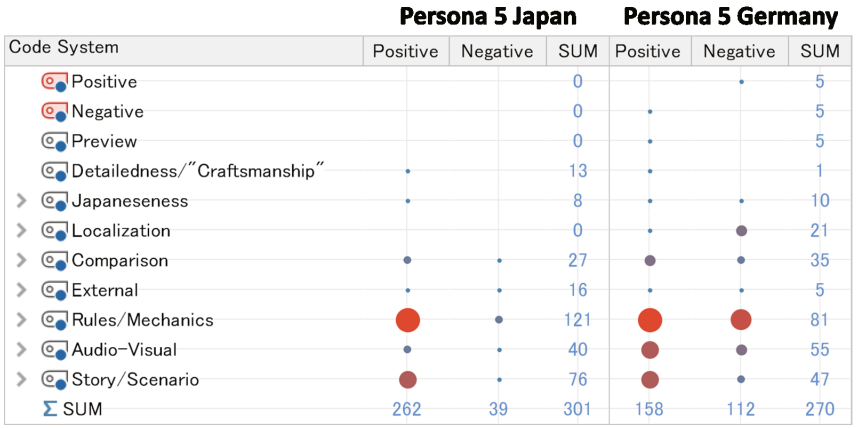
In the *Rules/Mechanics* category, several other differences can be recognized. First, the code that appears most frequently in both the German and Japanese reception is *Combat System*. Japanese user reviews paint an ambiguous picture of it. While it is generally seen as possessing tactical depth and being one of the stronger points of the game, there were also diverging voices regarding its difficulty, balancing, tempo and the ability to customize the characters' abilities. The sequences of "mech-combat", in which the player controls a giant robot-like being instead of the usual characters, were mostly criticized, with users voicing their dissatisfaction at the similarities to the normal combat-system and criticizing its place in the story. In the German sources, the turn-based combat system of *ToCS* is universally praised. It is perceived to provide tactical depth while maintaining its dynamic. The sequences of mech-combat were seen as a "nice change of pace", while the social-link system in the game is attributed with providing "an easier linkage between social elements and the combat system than Persona".

The games' elements of social simulation are also viewed differently, being positively perceived in Germany and more critically perceived in Japan. Japanese users criticized the restrictiveness of having to spend "bonding points" to view social events with non-player characters, making it impossible to view all character events in a single playthrough. The character events were also seen as not having any influence on the greater story, just being a "bonus" without any real relevance, especially as decisions made in *ToCS I* were seen to be insufficiently reflected in *ToCS II.* Again, the German reception here was more benign, with the social elements of the game being favorably compared to the

Persona series. Several users also praised the "interesting" stories that can be glimpsed by spending "bonding points", indicating a desire to become more familiar with the games' characters

While Japanese users generally perceived *ToCS I and II* as inferior to their predecessors in the *Trails of* series, especially in regard to story and characters, German users and media alike painted them in a more positive light, acknowledging the "grand scope" of the narrative and the advances in technology, design and combat mechanics when compared to prior titles. German users also attested to the game having an "attention to details, lacking in most modern RPGs", referring to it as being a successor to the "good old age of great Japanese RPGs".

The differences in the German and Japanese reception of *Persona 5* are far less pronounced (see Figure 6). One observation lies in the comparatively higher frequency of text passages coded as *Negative* in the German source material. This is most clearly recognizable in the *Rules/Mechanics* category, which coincided 44 times with a *Negative* code, and 37 times with *Positive*. A closer look shows that a substantial amount (19) of the intersections between *Rules/Mechanics* and *Negative* are concentrated on a single topic, *Time/Pacing*, which was discussed above.



	Persona 5 Japan			Persona 5 Germany		
Code System	Positive	Negative	SUM	Positive	Negative	SUM
Positive			0			5
Negative			0			5
Preview			0			5
Detailedness/"Craftsmanship"			13			1
Japaneseness			8			10
Localization			0			21
Comparison			27			35
External			16			5
Rules/Mechanics			121			81
Audio–Visual			40			55
Story/Scenario			76			47
Σ SUM	262	39	301	158	112	270

Figure 6: Comparison between the MAXQDA code-relation matrixes of the Japanese and German Persona 5 reception by using the Positive/Negative codes as demarcations for context.

Aside from the *Rules/Mechanics* category, there are more similarities than differences in the evaluation of *Persona 5*. Comparatively, the *Audio-Visual* category appears to be discussed more prominently in Germany. While the visual depiction in Figure 4 somewhat misleadingly depicts the *Audio-Visual* category as only slightly larger than *Comparison*, this is because of the strong influence of the *Rules/Mechanics* category in the column. Still, more passages in the dataset can be attributed to the *Story/Scenario* category than to *Audio–Visual*, while the German reception shows the opposite trend. Generally, *Audio–Visual*, in a positive context, denotes the unique visual design of *Persona 5*, perceived as ground-breaking in Japan and Germany alike, the quality of its graphical user interface, especially during combat, as well as its universally praised soundtrack. Generally, while the visual design of *Persona 5* was praised in both countries, it was more broadly discussed in the German sources, and praised in a more outspoken way, as the "best visual design ever". Criticism touches on the technological presentation of the game, with its textures being perceived as "last-gen" and not "up-to-date" by several German and Japanese users. In addition, some German

players were uncomfortable with the "anime-style" graphics, preferring a more photo-realistic style.

The lack of a German *localization* was another point of frequent criticism by German users, especially in light of the commercial success of *Persona 5*, which, in the eyes of the users, delegitimized ATLUS' decision to not include support for other languages. While dissatisfaction with the English-only localization was voiced in German Amazon user reviews and media articles alike, it was especially common in the comment section of the media articles, with several users stating that they would not buy the game without at least a German translation of the text. The quality of the English localization was also questioned.

Lexical Differences

The analysis of the Japanese and German sources also brought up the question of lexical-semantic differences between German and Japanese users. German and Japanese are vastly different languages. However, when talking about their play experience, Japanese and German users alike often use English terms. For example, some of the most frequent words used in the German texts are "story" and "gameplay" (see Table 4). While "story" (*sutōrī*) also appears in Japanese user reviews, the word "scenario" (*shinario*) is often used instead. The word gameplay, while existing in Japanese as *gēmupurei*, is only used once in Japanese. In contexts where German users refer to "gameplay", Japanese players use the term "system" (*shisutemu*) instead. In contrast, "System" is used in German exclusively in the combination "combat system". In the Japanese user reviews of *ToCS*, the word "story" is more often used than "scenario", while the opposite is true for Japanese user reviews of *Persona 5*.

Word	Frequency	ToCS_GER	Persona_GER	ToCS_JAP	Persona_JAP
Story	483	393	81	4	5
System	411	370	41	0	0
Geschichte	212	155	57	0	0
Gameplay	81	61	20	0	0
sutōrī	64	0	0	36	28
shistemu	52	0	0	17	35
Handlung	49	35	14	0	0
shinario	45	0	0	10	35
monogatari	43	0	0	17	26
plot	10	8	2	0	0
Szenario	2	2	0	0	0
gēmupurei	1	0	0	1	0

Table 4: Frequency of selected central terms to describe user impression of the games. Japanese terms are written in cursive.

Do such semantic differences matter? Are there reasons why Japanese users seem to prefer using either the word “scenario” or “story”, depending on the game they are discussing? Why is the concept of “gameplay” so prevalent in German (and English) user reviews, but largely absent in the Japanese ones? While it is outside the scope of this paper to provide a comprehensive answer as to how language can be an indicator of differences in the way we think about games, this might provide a fruitful avenue for further academic attention. Answering these questions satisfactorily would require a greater (random sample) dataset to rule out the possibility of selection bias and establish whether subtle differences such as the use of “story” or “scenario” are statistically significant.

The comparatively higher frequency of the word “story” in the *ToCS* reviews can possibly be attributed to Nihon Falcom’s practice of framing the titles as “story RPGs” in Japanese

marketing campaigns. The more frequent use of "scenario" for *Persona 5*, might also be linked to the broader discourse in the game. *Persona 5* was frequently praised for its "polished" state, emphasizing the skill of its developers. The use of "scenario" with its stronger connotation of artificialness, i.e. of it being created by a writer (a "scenario writer", or *shinario raita*, is a common job description in the Japanese games industry), further emphasizes this link to the game's developers.

Based on our dataset, the differences between the German "gameplay" and the Japanese "system" are hard to pin down. The more common use of "system" is possibly related to the, on average, greater analytical depth of Japanese reviews. For example, German players tend to praise the "great gameplay" of a game, without going into any more detail on which ludic aspect they are commenting on. Such comments are rare in the Japanese reviews, where "system" is mostly used in connection with a specific ludic element of the game, e.g. dungeon crawling or the combat system. By using the word gameplay, German players explicitly refer to the interaction between player and game (i.e. play), while the use of "system" does not necessarily carry such connotations.

DISCUSSION

How can we summarize the differences between the Japanese and German perception of *ToCS* and *Persona 5*? First, the comparatively huge gap between the Japanese and German reception of *ToCS* can, at least partially, be explained by structural factors among reviewers. *ToCS* still remains a niche series in Germany, indicated by lower media attention and less user reviews in total. Reviews on Amazon are thus more likely to be written by fans of the series, something that can also be seen in the many comparisons to the games' predecessors. Players of *ToCS* also frequently refer to other (often considerably older) JRPGs, indicating their identity as fans of the genre. However, looking at

the Japanese user reviews, this also seems to be the case in Japan. Based on their findings, and referencing Nagai's (2005) assertion of the high value that Japanese players place on a game's story and character development, Zagal and Tomuro (2013, 5) argue that, "[since] Japanese players place more emphasis on story, their overall appreciation of a game is strongly dependent on the quality of its narrative." While this coincides with our findings for *ToCS*, and might be a possible contributor to the comparatively negative reception of its gameplay elements, it does not explain why the evaluations of *ToCS's* story by German and Japanese users are completely opposite to each other (see table 5).

Code	Japan	Germany
Story	Repetitive, stereotypical, naively presented	Interesting, intriguing, of grand scope
Characters	Lacking depth, unnecessary to the story	Well developed
Combat system	Difficulty, problems with balancing and tempo	Tactically deep and dynamic
Compared to predecessors	Inferior story and characters	Improved technology, design and combat

Table 5: Summary of some selected codes and the context in which they are used in the German and Japanese user reviews on ToCS.

The overwhelmingly positive reviews *ToCS I* received on Steam, are indicative of a broad consensus among "Western" players on how to evaluate the game. Some of the negative points discussed in Japanese user reviews could have been mitigated by the often-praised localization of the games. For example, repetitive and unnatural dialogue, criticized by Japanese players, could have been improved by localization efforts. Also, the Steam version of the game boasts several gameplay improvements, such as the inclusion of an option to speed up the combat system. Still, this cannot fully account for the differences in perception of, for example, the setting or the character cast of the games.

Looking at the broader ecosphere of JRPGs in Germany and Japan leads to another possible explanation for the excellent reviews

ToCS received in Germany. While Japanese users enjoy access to a more varied selection of JRPGs, the genre, apart from some successful intellectual properties, often occupies a niche in Western markets. Comparatively few JRPGs are localized for a release in Germany, with most of them only receiving an English translation. By giving *ToCS* good reviews, German players possibly want to contribute towards raising the chances of other JRPGs being localized. This is consistent with several user comments, expressing fear that future parts of the *ToCS* series would not be published in the West if sales were bad.

On the other hand, Japanese players are able to choose between a greater variety of (competing) games in the genre. As such, their frame of reference is vastly different from that of the average German player. Elements that might be criticized as being stereotypical or lacking novelty by Japanese players could therefore still feel fresh to German players. A greater availability of JRPGs in Japan is, however, only one part of a vastly different media environment in both countries. JRPGs and other Japanese games are deeply integrated into the Japanese media mix (Steinberg, 2012). Characters are a central element of this media mix and often intentionally created to fit into existing molds and adhere to certain stereotypes, in order to satisfy the expectations of Japanese hard-core fans (cf. Azuma, 2009). *ToCS*, being primarily produced with the domestic Japanese market in mind, as evident in the long delay between the Japanese and Western release of the games, freely borrows from common tropes in Japanese pop culture, such as the main character being a “siscon” (i.e. unusually strongly attached to his sister) or the inclusion of giant humanoid shaped robots (“mecha”). While such tropes possibly appeal to Japanese hard-core fans, the prime target of related merchandise in the media mix surrounding *ToCS*, and therefore an important economic factor, are also more likely to be criticized by the broader Japanese player base, and could possibly contribute to the role of the games as niche titles in Germany.

In contrast to *ToCS*, *Persona 5* has been received mostly positively in both countries. According to several user reviews, the game has been a (re)entry point into JRPGs, or video games as such, for German and Japanese players. The broad range of opinions evident among German user reviews can be seen as an indication of the Persona series leaving the "JRPG niche" and attracting a broader range of players. Differences in the (user) reception of *Persona 5* were mostly apparent in regard to the game's length. Interestingly, in the case of *Persona 5*, German user reviews tended to be more negative than Japanese ones. This could in turn be another indication of cultural differences in the evaluation of games, as the attraction of a more "mainstream" audience for *Persona 5* has brought with it players more critical of JRPGs, and who tend to give the game a lower score. In contrast, the games' characteristics, like its anime inspired visual design, are more easily appreciated by the Japanese "mainstream".

Persona 5 and *ToCS* both display "Japaneseness", albeit in different ways. *Persona 5* does so in a very direct fashion. Players can explore different portions of Tokyo, closely modelled after their real-world counter-parts. They are also provided with (highly stylized) insights into Japanese society, such as school life. It is obvious that this can cause differences in how the game is interpreted by German and Japanese players. Some references might be hard or almost impossible to understand for German players, such as some of the questions the player is asked in-game during class, which are often closely related to Japanese culture. However, the societal problems the game focuses on, like bullying or sexual harassment in schools, are also relatable to a German audience. Furthermore, the "Japaneseness" in *Persona 5*, rather than being a hindrance, appears to be a contributing factor to its success. The Tokyo setting is often praised in the German reviews, with many players feeling that they have learned something about Japan via the game.

In *ToCS*, Japaneseness is not as overtly displayed as in *Persona 5*. The game is set in the fictional "Erebonian Empire", in a period

reminiscent of early modern Europe. The empire shows some parallels to pre-World War I Germany, being a military powerhouse under the control of the "blood and iron chancellor." While at first glance this appears to confirm Iwabuchi's (2002) notion of a culturally "odorless" product, a closer look reveals several layers of "Japaneseness" in the game. As mentioned above, the characters and story are closely related to common tropes in Japanese pop culture. German players strongly identify *ToCS* as "Japanese" based on these elements, as well as the aesthetics and gameplay elements, like the turn-based combat system. Still, while *Persona 5* in some respects poses potentially higher barriers for players unfamiliar with Japan than *ToCS* (e.g. the quizzes during class), it enjoys far greater commercial success and critical acclaim. This confirms Consalvo's (2016, 178) observation, that "Japaneseness" is mostly deployed as a rhetorical mechanism, enabling game developers to shift the blame for an unsuccessful release on unbridgeable cultural differences.

An unanswered question remains in regard to the differences between Japanese professional and user reviews of *ToCS*. While we did not include Japanese professional reviews in our analysis, the official review of the *Shūkan Famitsū*, the most widely read Japanese games magazine, has repeatedly been criticized by Japanese users as being far too lenient. This might indicate a rift between Japanese users and professional domestic games media, which does not seem to be as pronounced in Germany, where user opinions appear generally closely aligned to the professional discourse.

CONCLUSION

In this paper, we set out to analyze the German reception of three JRPGs, chosen because of their differences in terms of player base and critical reception, as well as their similarities in regard to elements of gameplay and setting. Our findings show that the way *Persona 5* and *ToCS* are discussed by German users is mostly

consistent with how they are depicted in the German professional media. However, some topics that were not explicitly discussed in professional articles have received greater attention by players, for example, the long playtime of *Persona 5*. User reviews also tend to depict a greater variety of opinions on a game. This is more pronounced in the reception of *Persona 5*, with its more varied player base, than in *ToCS*. In contrast to general critical acclaim and commercial success, *ToCS* is almost universally praised in German user reviews, while more criticism is apparent in user reviews on *Persona 5*. Although this can partly be attributed to a smaller, more cohesive player base, the difference is nevertheless surprising.

Comparing the German discourse on the games with the way they are perceived in Japan yields a more complex picture. The evaluation of *Persona 5* in both countries shows great similarities with only subtle differences, which were especially apparent in German criticism of the game, and which could not be found in the Japanese user reviews. Japanese user reviews tend to be more systematic in their discussion of games, mentioning topics like button mapping, minigames or balancing, that were not discussed in such detail in the German reviews. Our results also imply that the long play time of *Persona 5*, often criticized in German user reviews, is not perceived as negative in Japan. This suggests different attitudes and expectations towards a game's content and duration.

A fundamental difference exists in the way *ToCS* is evaluated in both countries. German (user) reviews appear overwhelmingly positive, while Japanese users on Amazon are predominantly critical of the games. Several possible explanations for this phenomenon have been briefly discussed but fail to provide a satisfactory and comprehensive answer. However, the current evidence strongly hints at the existence of profound differences in how stories in games are received by players from different cultural backgrounds. Culture provides a frame of reference, in which a game's narrative elements are understood and linked to

each other. The Japanese frame of reference is influenced by the specific Japanese "media mix" (Steinberg, 2012; Schules, 2015). A game's story is not only seen in comparison to other games, but to a whole ecosphere of content, spanning diverse media like anime or manga. This frame of reference does not fully exist in the West.

Another point raised in this study concerns a more fundamental level of communication: language. We noted several lexical differences in the way German and Japanese players write about games, perhaps the most striking being the difference between the use of "gameplay" in German, and "system" in Japanese. While "gameplay" connotating the interaction between player and game, is a central concept in the German reflection about video games, Japanese players talk about "systems". There were also some indications of a differentiated use of the terms, "scenario" and "story", in Japanese.

We consciously employed a qualitative approach in our study, trading a more representative sample size for higher analytical granularity. While this was necessary to provide a close examination of the differences in game perception, such an approach also has its drawbacks. Our examination was limited to the reception of three games, belonging to the same genre. JRPGs are often seen as being particularly expressive of Japanese cultural elements, but they do not represent, by any means, a majority of Japanese games. Examining how player perception of a game is influenced by cultural background requires the analysis of the German and Japanese reception of a broader range of games developed in Japan. Therefore, we plan to continue this research project by including a wider, more representative variety of Japanese games chosen based on comprehensible criteria, such as genre, commercial success, design and gameplay. We will also extend our analysis to include Japanese professional game reviews and articles to allow for a more valid comparison of the Japanese and German reception, and we will conduct player interviews and play tests with German and Japanese players. Employing Ulrike

Rohn's (2009, 2011) model of lacunae and universals to contextualize our results could also prove fruitful.

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8.

Preliminary Poetics of Procedural Generation in Games

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ABSTRACT

Procedural Content Generation (PCG) is deeply embedded in many games. While there are many taxonomies of the applications of PCG, less attention has been given to the poetics of PCG. In this paper we present a poetics for generative systems, including a descriptive framework that introduces terms for complex systems (Apollonian order and Dionysian chaos), the form that describes

the shape of the generated output (formal gestalt, individual, and repetition), the locus of the generative process (structure, surface, or locus gestalt), the kind of variation the generator uses (style, multiplicity, and cohesion) and the relationship between coherence and the content used as input for the generator. Rather than being mutually exclusive categories, generators can be considered to exhibit aspects of all of these at once.

Keywords

procedural content generation, PCG, poetics, aesthetics, information complexity

INTRODUCTION

Procedural content generation has a long history in games. Some of the earliest videogames used generative systems to create dungeons or use less memory. And many analog games have used generative techniques (Smith, 2015). As such, criticism of games needs to be able to effectively analyze the generative systems.

Michael Cook has recently called for an interrogation of the language we use to talk about procedural generation. According to Cook:

> The old language of procedural generation needs to be done away with, and in its stead we need a new way of communicating about what we do, and why it's interesting. We need to debunk the idea of procedural generation as a dark art, and show people that it is accessible, understandable and interesting. (Cook, 2016)

This paper contributes vocabulary to describe the poetics of procedural generation: the ways in which procedural generation communicates meaning. Instead of talking about the large number of planets we can generate, we can instead talk about the effects that the procedural generator can be used to evoke in the player: intentionally overwhelming the player by the sheer size of the

generative space, attachment to a particular unique generated artifact, a sense of ritualistic repetition, and other poetic forms.

Poetics, as used here, refers to a theory of form that studies the creative principles informing a creative work. Just as "Towards a Theory of Choice Poetics" (Mawhorter et al., 2014) describes a poetics of choices in games, we present a theory of generative forms. While taxonomies of procedural generation exist, the focus has been on the how rather than the why. Many taxonomies of procedural generation, such as those presented in Togelius et al. (2011), Yannakakis et al. (2011) and Hendrix et al. (2011) have been oriented around either the domain where the generation is applied or the specific techniques that the generation uses. The poetics of generativity—what it means when we use a particular form of generation and what effect it has on the player—are under-explored. This is unfortunate because understanding the poetics of procedural generation not only points out new directions for future generative research, but also better equips designers to make decisions about how and when to use generative systems, and gives critics the vocabulary to properly dissect the systems they are critiquing.

This paper is a preliminary attempt to understand the poetics of generative content in games. After discussing previous frameworks, this paper is structured as a series of lenses, each of which brings focus to a set of aesthetic dimensions. The relationships between aspects of the lenses are described in spatial terms, metaphorically situating them in space, in an analogy with the way that generative forms deal with distributions in abstract, mathematical probability space, which is an aesthetic element that separates generative forms from other media. Like the visual vocabulary of montage in film or the use of meter and metaphor in language, the poetics of generative systems are built out of this vocabulary of forms.

Many existing aesthetic theories deal with composition, such as composition in time or in the picture plane. Some media vary

across space, such as the panel composition in comics (McCloud, 1993). Other media vary in the more abstract dimension of time, such as cuts in film (Kuleshov, 1974, 5) or measures in music. What sets generative art apart from other media is that it is composed in a completely different dimension: parametric probability space. By imagining the possible results of a generator in this mathematic space, we can apply aesthetic concepts of contrast and balance to probability: for example, the bell curve from rolling a pair of dice on an encounter table is different than rolling a single die.

Where previous discussions of generative art have reduced this distribution of parametric probability to single linear continuums, Apollonian order and Dionysian noise use information complexity to describe a two-dimensional space of possible Generative Complexity.

The lens of Generative Form is about the form the generator itself expresses: through highly-distinct Individual artifacts, a *Gestalt* sense of the entire output, or highlighting the relationships between artifacts through *Repetition* of the same form.

Generative Locus inverts this lens and considers generativity from the perspective of the generator's relationship with the player. Where is the focus of the generation? Is it on the *Surface*-level results of confronting a snake pit in Spelunky (Mossmouth, LLC., 2013)? Or the rules that dictated the placement of that snake pit, i.e. the *Structure*? Or the *Gestalt* effect of how the pit fits into the level as a whole?

Finally, the lens of Variation gives us vocabulary to talk about the distinctions between *Multiplicity*: generating many perceptually distinct results; *Style*: generating the right thing; and *Cohesion*: generating things that agree with each other.

PREVIOUS FRAMEWORKS

There are several previous aesthetic frameworks for PCG that overlap somewhat with the ideas presented here. However, none of them describe a complete poetics.

Expressive Range Analysis

One way of looking at procedural generation that has been proposed by PCG researchers and implemented in PCG analysis tools (Cook, Gow, Colton, 2016) is Gillian Smith's expressive range analysis: "Expressive range refers to the space of potential levels that the generator is capable of creating, including how biased it is towards creating particular kinds of content in that space" (Shaker et al., 2016, 218).

Measuring the expressive range of a generator is a useful way to understand a generative system (Smith and Whitehead, 2010). But expressive range analysis relies on selecting the right metrics to measure. The original expressive range metrics of linearity and leniency make less sense when divorced from the original context of linear platformer level generation (Summerville, 2018). There is no one right answer: "The metrics used for any content generator are bound to vary based on the domain that content is being generated for" (Shaker et al., 2016, 220). Gillian Smith and Jim Whitehead also suggest that "These metrics should be based on global properties of the levels, and ideally should be emergent qualities from the point of the view of the generator" (2010). That is, rather than measuring the things the generator's parameters directly influence, it is better to measure something like the linearity of the generated level.

Gillian Smith's Design-Centric Analysis

In "Understanding Procedural Content Generation" (2014), Gillian Smith uses the Mechanics-Dynamics-Aesthetics (MDA) framework to put forward an analytical framework for Procedural

Content Generation. According to Smith, "it is vital that both AI researchers and designers have a common vocabulary for understanding not just what PCG is but how it can be used to induce particular experiences and what it uniquely offers to game design." Smith categorizes the approaches used in PCG into optimization, constraint satisfaction, grammars, content selection, and generation as a constructive process.

The *aesthetics* in the MDA framework refers to a narrow definition of aesthetics: "Aesthetics describes the desirable emotional responses evoked in the player, when she interacts with the game system" (Hunicke et al., 2004). Smith categorizes the forms of MDA aesthetics used in PCG as discovery, challenge, and fellowship.

The Annals of the Parrigues

In 2015, in response to National Novel Generation Month ("NaNoGenMo") and ProcJam ("ProcJam: Make Something That Makes Something"), Emily Short created a travelogue novel called *The Annals of the Parrigues* (2015) in "collaboration with the machine" (97). As an outgrowth of earlier attempts to generate systematic vocabularies of symbols, after the manner of the symbolism in a tarot deck, she used a set of five principles as "an organizing iconography distinct from traditional groups of elements" (86). Importantly, the principles formed "a system of mutual partial opposition" that deliberately could only be used with a dynamic, rather than static, equilibrium, similar to the use of the color wheel in the design of *Magic: the Gathering* (86).

The five principles she chose—Mushroom, Salt, Venom, Beeswax, and Egg—became a vital part of the world-building. These principles were used as meta tags on the content in the corpus of data the generator used: for example, Short associated Salt with order and regularity, so a town associated with Salt would have austere buildings in desaturated colors, and the religious beliefs would be "an organized kind of religion" (Short 2016b). This has

influenced other designers: Bruno Dias developed a similar system for the procedural generation in the game *Voyageur* (Dias 2017).

But the principles were also reflected in the generative system itself: Salt is also about grammars and generators that operate without human input. Taken as a whole, the five principles form a working framework for a practical generative poetic, expressed as opposing aesthetic forces.

The framework in this paper is partially a response to Emily Short's framework. Our framework attempts to cover aspects that her deliberately limited tarot suits of principles left out. At the same time, the deliberately overlapping aesthetic tarot has advantages that deserve further study outside of the present discussion.

Design Metaphors

In "Design Metaphors for Procedural Content Generation in Games," Khaled et al. (2013) establish a set of metaphors to describe the relationship between a designer and the generator. To distinguish between the generator being described via metaphor and the human "designer" performing a similar role, they signify the metaphor using small caps, so a "designer" is referring to the machine acting as a metaphorical game designer.

One of the metaphors is the domain expert, a system acting in a role similar to a domain expert who is sometimes used in serious games to provide background expertise on a subject matter. We can extend this metaphor by drawing on the artificial intelligence concept of an expert system. An expert system emulates the knowledge of a human expert by encoding a decision-making process into a knowledge representation. Likewise, a procedural generator as expert system is an expert on the thing it generates. That is, the generator is an expert on itself. The definitive definition of what it means to be a dwarf in *Dwarf Fortress* (Bay

12 Games, 2018) can be found in the data files and processes of the *Dwarf Fortress* source code.

Generative Art and Effective Complexity

Games are far from the only place where generativity is used. In the fine art world, generative art has a long and venerable history. It predates computers, but has come into its own as computers have enabled new forms of generativity to be explored. One influential definition of generative art is that of Phillip Galanter:

> Generative art refers to any art practice in which the artist uses a system, such as a set of natural language rules, a computer program, a machine, or other procedural invention, that is set into motion with some degree of autonomy, thereby contributing to or resulting in a completed work of art. (Galanter, 2003)

Galanter further applied the concept of effective complexity to generative art. Highly ordered systems (such as crystals or Penrose tiles) are simple. Highly disordered systems (e.g. randomization via cut-up techniques) are conventionally complex. But in information theory terms, effective complexity recognizes that highly disordered systems are nevertheless conceptually simple. Instead, Galanter traces a rough-peaked curve of effective complexity, placing evolutionary systems and artificial life at the peak of the curve (Fig. 1).

Galanter uses this to categorize generative art into highly ordered, complex, and highly disordered. Highly ordered generative art uses patterns and tiling, but little or no randomness. Disordered systems, in contrast, are highly disordered generative art: aleatory music, cut ups, etc. Standing in contrast to the relative straightforwardness of tiled patterns and die rolls, Galanter's "complex systems" are self-organizing, emergent, and greater than the sum of their parts.

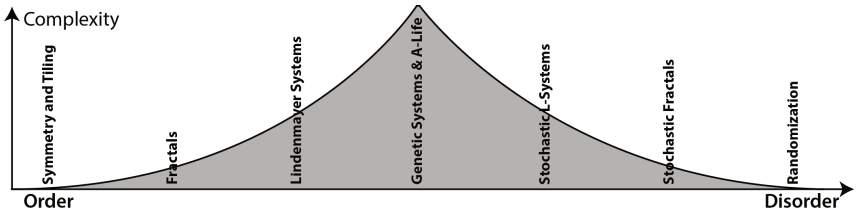

Figure 1: Galanter's complex systems: generative art on a continuum from order to disorder, with effective complexity peaking in the middle (Galanter, 2016).

Procedural Aesthetics

Matt Stockham presents an aesthetic taxonomy in "Procedural Aesthetics" (Stockham, 2014), focusing on identifying a toolkit of aesthetic devices, including defining regions in generated landscapes, generating rules of play, and using modular music.

In contrast, the aesthetic principles in the present paper are not tied to any specific technique. There are many ways of expressing similar generator outcomes. To give one example: the choice of what kind of noise to use has an effect, but our focus is more on that effect rather than the specific algorithm used to achieve that effect.

POETICS OF PROCEDURAL GENERATION

While sharing some of the same properties as other expressive processes, procedural generators can be characterized on aesthetic measures specific to generativity. These aesthetic properties aren't an exhaustive list, but rather the properties we judged to be the most relevant. It is also important to note that most of the properties presented here are not mutually exclusive. For example, gestalt and structure are in tension, but a generator can exhibit both properties. Many generators use seemingly contradictory principles in different parts of the system, or encapsulate

generators that are based on very different principles. Rather than a simple continuum, the poetics presented here can be thought of as a multidimensional space, with some of the dimensions being connected with multiple other aspects.

Most of the examples in this paper will be drawn from either videogames or works made for the annual National Novel Generation Month (NaNoGenMo). Videogames are a broad category that exhibit a mass-media application of generative systems. In contrast, NaNoGenMo projects are participating in a specific artistic discourse, one that has been compared to the ideas in Ken Goldsmith's *Uncreative Writing* and the Dada art movement (Hume, 2015).

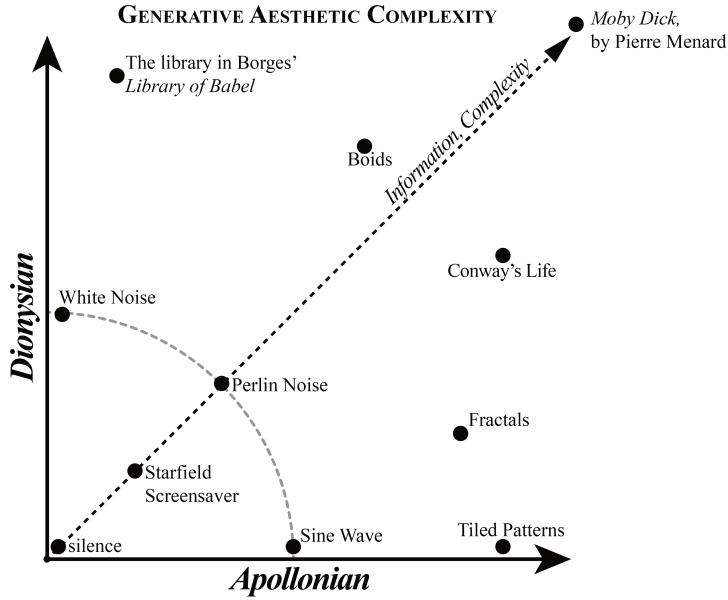

Figure 2: Generative aesthetic complexity: rather than a linear continuum, the balance between the Apollonian and Dionysian aspects of generativity can be described as a two-dimensional space. Information and complexity increase towards the upper right, beyond which is the (hypothetical) computer-generated Great American Novel.

GENERATIVE COMPLEXITY: APOLLONIAN AND

DIONYSIAN

As we examine the aesthetic effects of procedural generation, effective complexity is an effective starting point. Out of all the properties of procedural systems, perhaps the central tension is between the randomness that generators use for aleatoric novelty and their need for ordered structure gives that novelty the context for it to have any meaning. But they are not a one-dimensional spectrum: order and chaos are not mutually exclusive.

We here introduce terminology derived from Nietzsche's aesthetic dichotomy of Apollonian and Dionysian impulses. Unlike order and chaos, they are not mutually exclusive (Fig. 2). The reason and order of the Apollonian impulse is balanced against the emotion and chaos of the Dionysian impulse in a dialectic. Apollonian and Dionysian elements exist simultaneously in generative systems. They are both in tension with each other and support each other.

Departing from Galanter's complex systems, we argue that the PCG systems with the highest effective complexity can be viewed as both highly ordered and highly chaotic. That is, systems that have the most emergent complexity can exhibit both high levels of what we term Apollonian generation—being governed by structured rules—and Dionysian generation—being governed by noise and non-deterministic chaos.

There are also generative systems that exhibit low-order/low noise, though of course on the extreme low end we might hesitate to call them generative at all. Low-complexity generative systems generally use either a degree of structure or a degree of noise. A few use both: the Microsoft Windows "Starfield" screensaver[1], for example, has a structure (bright points always start near the middle of the screen and fly outwards) and randomness (the position

1. . Sometimes titled "Starfield Simulation". A version of it was included in many editions of Windows (ending with Windows XP). It displayed small dots flying out from the center of the screen at random angles: https://www.youtube.com/watch?v=r5TmP_tI5RI

and direction of the points). It is definitely generative, but is not particularly complex.

Dionysian Noise

Procedural generation in games often starts with randomness. While there are deterministic generators that construct an output via a parametric processes, in practice they often have their parameters controlled by some form of noise or randomness. Clustered around the Dionysian pole, we find such things as aleatory music,[2] the cut-up technique popularized by Burroughs (1961), random tables in Dungeons & Dragons which are themselves descended from prior wargames (Peterson, 2012, 311-314) and terrain generation with Perlin noise (Perlin, 1985).

The most basic use of noise—the die roll, the coin flip—is uniform white noise, with an even distribution and each outcome independent from every other. But noise can also be expressive: both the distribution and the frequency can be adjusted to produce new effects. Adjusting the distribution is a very common method of altering the kind of randomness used—rolling multiple dice and summing the result approximates a bell curve, and countless 20th century wargame and roleplaying designs revolved around applying distortion curves to a die result in the form of a lookup table (Peterson, 2012, 289-290).

Less frequently discussed but equally practical is the spatial or temporal frequency of noise, also called the color of noise, in analogy to colors of light being determined by its wavelength (Mandelbrot, 1983). The color of noise describes the timbre of the sound or the texture of its visual appearance. Red noise has less power in the higher frequencies, while blue noise is the reverse. Both appear in nature and have specific uses in audio production, visual effects, and procedural generation.

2. . Aleatory music is created with processes involving chance, such as found in many works by John Cage. But the use of dice in music composition goes back much further (Hedges 1978).

More coherent forms of noise, such as Perlin noise, have achieved such ubiquity in procedural content generation that they are sometimes synecdochically identified with procedural content generation itself. Coherent noise is still noise, in that the output can be calculated independently for each point, but the mathematical structure of the noise generator means that neighboring points have values that are related to each other. Dice-metaphors are, of course, only one kind of randomness. A second frequently used paradigm is the shuffle, the metaphor of cards in a deck. This is still a random process, but with very different properties. In particular, sampling without replacement gives a designer much more control over the outcome of a generative system while still involving a large amount of hands-off randomness. Dionysian noise is more than mere chaos.

Apollonian Order

Procedural generation is not just the Dionysian chaos of noise. What makes procedural generation distinct from just white noise is that it has coherence and structure that provides a logical relationship between the generation process and the result.

Generative art can exist with very little randomness, so long as the structure is interesting enough. The simple rules of Conway's Life (Gardner, 1970) and the geometric tiling patterns in Islamic art, such as deployed in the game *Engare* (Bahrami, 2017), both follow fixed rules, but can create emergent results of startling complexity.

This complexity can also emerge in entirely deterministic systems. Chaos theory is the study of deterministic but unpredictable systems. Strange attractors (Lorenz, 1963, 130-141) and fractals (Mandelbrot, 1983) are created by ordered processes, but exhibit unpredictable emergent results.

This is complicated by the pseudorandom number generation that is used for most procedural content generation. While some generators use other sources of randomness (most typically

crowdsourced or via some kind of data source) the vast majority of generators in games use a form of order to create their randomness. None of these categorizations are pure. Generators can nest inside other generators or be assembled into generative pipelines that mix different forms of generativity.

GENERATIVE FORM: REPETITION, GESTALT, INDIVIDUAL

While the Apollonian and Dionysian aspects of generation are the most obvious aesthetic aspects of procedural generation, other aspects can be just as important. In what we term the *generative form*, the generator balances between the gestalt effect, individual generated artifacts, and repetition.

Repetition, in particular, is under-discussed but frequently used. In Emily Short's aesthetic tarot, the principle of Mushroom describes the repetition that grows on the forest floor of generativity:

> Mushroom is propagative and indifferent to the individual. As long as there are spores, the fungal principle is content. Mushroom-writing does not care about an individual instance of output and does not regret the loss of any element. Mushroom-writing thrives on decay, the breakdown of old structures, and the creation of new structures. Mushroom-writing is indifferent to consistency or to the profile of the resulting whole. It is unapologetic about repetitions. (Short, 2015, 89)

Here we can see that repetition (and being obviously created by a generative process) can be a desirable aesthetic goal in itself. Many existing generators make use of this: Short considers Markov chains to be "mushroomy" (Short, 2015, 89).

Repetition as an aesthetic device is a common feature in different media. Many periods of architecture, from the Classical to Gothic to Modern, involve repeated forms. Many poetic forms use repetition extensively, ranging from parallel imagery to repeating words verbatim, to the point that some poetic structures, such as villanelles, are premised on exactly repeated phrases. Some

generators use this principle directly: the @infinite_scream Twitter bot (Reed, 2015) tweets variations on "AAAAAAHHH" for followers to interact with.

Generativity allows us to recapture an older form of repetition: in contrast with the identical mass-produced objects of modernity, generativity can approximate the subtle variations of the handmade artisanal craft production. Individual generated artifacts can be made unique, even if they are not novel in the aggregate: bolts on an airplane wing generated with minute variations, as in Denis Kozlov's Project Aero (Kozlov, 2017); a unique color scheme, as exhibited by the creatures in *Spore* (Maxis, 2008); or the color of a star in *No Man's Sky* (Hello Games, 2016). It returns a sense of uniqueness to the individual manufactured object, though this time it is the individuality of the machine rather than evidence of the direct human hand.[3]

Extending this view, generativity can create a fractal repetition, a repetition where no individual snowflakes are the same, but the combination creates a formal gestalt impression, a generative snowbank.

This gestalt effect, where individual points are less important than the effect of the whole, is an underappreciated aesthetic outcome of generativity. This is one of the ways in which procedural generation can be generative in another sense: having the qualities of plant growth. The aesthetics of generativity are often organic, resembling the verdant emergent forest undergrowth.

A procedurally-generated forest is a good example of the gestalt aesthetic: the exact placement of individual trees is not important as long as there are enough plants to convey the idea of a forest. The gestalt is what matters, not any specific individual or the exact shape of the overall forest.

3. . That is, each hand-crafted object is subtly unique. I consider this to be related to the Arts & Crafts movement's aesthetics, which arose from the rejection of mass-production, as well as more contemporary reactions to mass production in the age of 3D printing.

For the gestalt, both the individual tile and the overall pattern of tiles on an infinite tiled floor are a smaller part of the aesthetic experience. Instead, the viewer's aesthetic experience of rules that create the pattern is most strongly felt through the perception of something else entirely, a Platonic form that can only be glimpsed indirectly in this liminal space that is neither the whole nor the individual part.

The designers of *No Man's Sky* (Hello Games, 2016) intended for players to approach its planets as gestalt experiences. Each planet has a single environmental biome and a roughly-even distribution of features specific to that planet. The idea was that this would let players quickly recognize what kind of planet they had found, encouraging exploration of new planets ("Special Edition Podcast: No Man's Sky", 2014, 22:14). The player's loss-of-interest pattern-recognition takes hold somewhere between visiting a single location (often too brief to grasp the entire pattern of the planet) and exploring the entire planet (virtually impossible).

Repetition is the Apollonian mirror of the more Dionysian gestalt-perception: the chaos of the forest-gestalt compared to the ordered rows of an orchard. In both cases, the overall perception dominates the aesthetic rather than any single artifact.

In summary, the generative form of a generator's output can be described in terms of three axes (Fig. 3): First, the importance of the individual artifacts that it generates, such as a tree generator that produces many perceptually unique trees. Second, its overall gestalt effect, as in a forest generator: rather than producing a single object, it produces many objects and uses the relationship between the objects to convey its meaning. The forest generation in *Age of Empires II* (Ensemble Studios, 1999) stamps down a handful of fixed tree sprites that have no shared in-game data structure, but the player still reads it as a forest. Lastly, in contrast to the above, the effect a generator's output may stem from its use of repetition, as in an orchard of identical trees, whose non-random

juxtaposition exhibits an order that creates contrast against the sea of noise, and implies cause and effect.

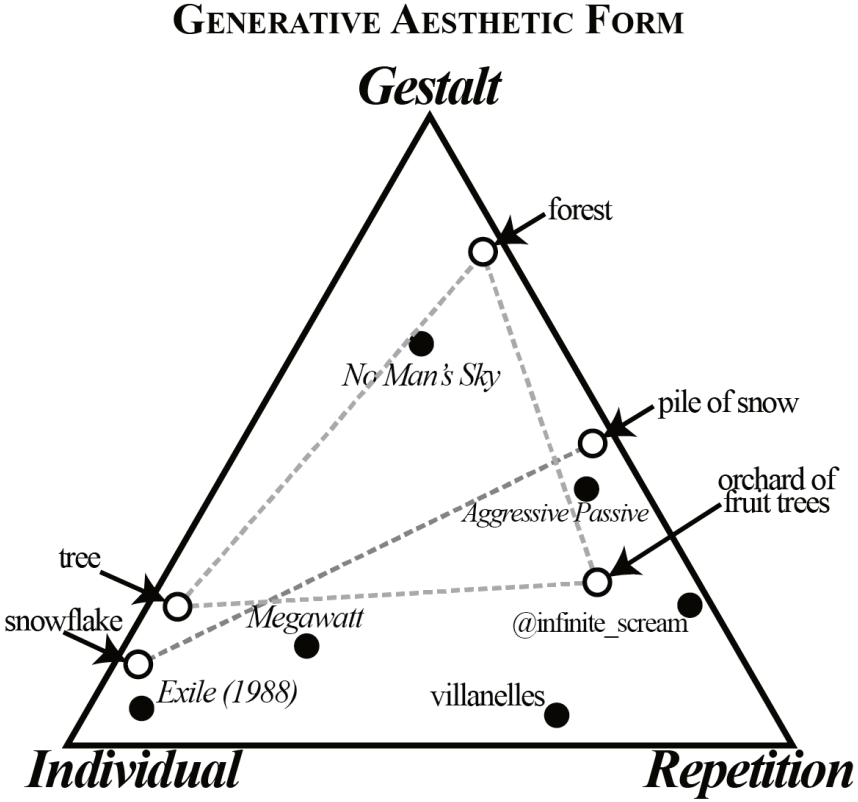

Figure 3: Generative aesthetic form: the tension between repetition, individual artifacts, and the generation as a whole.

LOCUS: STRUCTURE, SURFACE, GESTALT

Rotating our perspective, we can contrast the form of the generator against the generator's aesthetic locus:[4]

> The generative gestalt aesthetic is an abnegation of the immediate details of the sensory experience in favor of the hidden effects emanating from that experience. But there are also generators which

4. . This idea of a generator's "locus" is coined here in a very loose metaphor with Rotter's "locus of control" (Rotter, 1990).

> are concerned with the macro-structure of the system itself. For Short, this is partially subsumed under the principle of Salt: "For the principle of salt, the machine-that-writes matters more than the thing-written" (2015, 88).

While often associated with the Apollonian order, a Dionysian generative system can also be structurally expressive: in Jonathan Basile's digital implementation of the *Library of Babel* (Basile, 2015) the sheer scale of the permutations transcends the noisy gestalt and turns the player's focus to the ideas of infinity embedded in the architecture of the generator.

Short additionally associates Salt with the grammars she created that expressed specific ideas like kinds of cheese or scents of perfume (2015, 88). This echoes the design metaphor concept of an expert system: the system is an expert about itself. The map is literally the territory.[5]

Generative art that borders on conceptual art tends to be about expressing ideas through the structure. For example, Aaron Reed's *Aggressive Passive* (2013), Nick Montfort's *Megawatt* (2014), and Andrew Plotkin's *Redwreath and Goldstar Have Traveled to Deathsgate* (2013), all NaNoGenMo novel generators. One of the two NaNoGenMo rules is that code must be made public. Therefore, NaNoGenMo generators often are capable of outputting multiple novels. Or, as in the case of *Megawatt*, produce a deterministic output that nevertheless foregrounds the process of generation.

Redwreath and Goldstar operates by expanding a grammar to create a conversation that consists almost entirely of characters answering questions with more questions. *Aggressive Passive* uses a similar structure to tell stories about housemates blaming each other for not doing chores. In both cases, the individual sections of the novel are less important than the way the system as a whole operates.

5. . On this point, see also Martin O'Leary's NaNoGenMo novel The Deserts of the West (O'Leary, 2015) which itself references Borges' "On Exactitude in Science" (Borges, 1998).

The Poetics of Structure

One design feature of using generative forms that result from this emphasis on structure is that the player can infer how the hidden generator works and draw conclusions from that. Many generators have deliberate tells, such as the way that dungeon generation in *NetHack* (Nethack DevTeam, 2015) makes it easier to predict that a secret door might exist once the player understands how the level generator lays out space (Campbell and Verbrugge, 2018, 3-4).

There are many ways to achieve this. One way is to have a predictable distribution, such as the way weapon and item generation in *PLAYERUNKNOWN'S BATTLEGROUNDS* (PUBG Corporation, 2017) can be predicted from the kind of building they are found in, or the patterns that raw diamonds follow in *Minecraft* (Mojang, 2011), only appearing in clusters at defined depths ("Tutorials/Diamonds", 2018; "Altitude", 2018). Another way is to enforce consistent generative rules, such as the way that most levels in *Spelunky* (Mossmouth, 2013) always generate the exit lower than its entrance (Yu, 2016, 34-36). Yet another way is the inclusion of guaranteed or fixed content in an otherwise dynamic generator, such as the way that *NetHack* (Nethack DevTeam, 2015) has a number of special-case levels at predictable but slightly varying depths (Campbell and Verbrugge, 2018; "Special Level" 2015).

Aesthetic concepts, such as symmetry, can enable the player to infer information before actually encountering it, a property that can be carried over from wayfinding in real-world buildings, where properties of correspondence, compatibility, completeness, and so forth are considered when analyzing building design (Carlson et al., 2010). This speeds up the process of the player familiarizing themselves with the system, and allows the designer to surprise the player by breaking the pattern.

Hierarchy and Distribution

Hierarchy is an important aesthetic principle in many disciplines, such as visual hierarchy in graphic design (Clayton, 2009, 48). One way that hierarchy is expressed in procedural generation is via the distribution of the generated artifacts.

Both frequency and rarity have specific effects on the player's perception. Rare artifacts, such as the villages and strongholds in *Minecraft* (Mojang, 2011), are perceived as more important and examined individually. They have an expectation of uniqueness, although repetition at long distances can also engender a sense of ritual. In contrast, frequent results are generally closer to a gestalt effect, forming the background as a contrast to the figure of the rarer results.

Distributions that follow non-linear or biased curves are often more interesting than linear probabilities: pushing the generator to extremes gives more interesting results. Just as animators use easing to create more pleasing motion, rolling a pair of dice and adding them together creates more interesting random results than rolling a single 11-sided die would. Making the highs higher but rarer creates contrast that makes them stand out, with very unusual results acting as landmarks.

Adjusting the weighting or distribution of outcomes is often an important part of the design process when working with procedural generation: in *Voyageur* (Dias, 2017a), Bruno Dias used both a salience system and hand-tuned weightings to control the frequency at which pieces of content would be used in the generator (Dias, 2017b).

Individual: The Artifacts as Surface

Of course, individual artifacts of the generator can be important in themselves, apart from how they relate to other generated artifacts.

After all, the artifacts are usually the only surface through which the player can observe and interact with the generator.

This borrows from Noah Wardrip-Fruin's use: "the surface of a work of digital media is what the audience experiences: the output of the processes operating on the data, in the context of the physical hardware and setting, through which any audience interaction takes place" (2009, 10). We extend this to the idea that individual sub-processes have their own virtual surfaces: the map generator in *Minecraft* (2011) can only be experienced through the intermediate surface of the voxel blocks.

Therefore, the individual generated artifact is in triangular tension with both the form and the locus of the system. Depending on the generative system, individual artifacts can be anywhere from nearly anonymous (a tree in a forest) to the only visible artifact: the BBC Micro game *Exile* (Irvin and Smith, 1988) uses a fixed-seed generator to create its map, enabling it to fit a sprawling cave system on-disk (Levene and Anderson, 2012, 92). As with the Dionysian and Apollonian poles being distinct from complex systems, a generator that focuses on individual artifacts uses both gestalt and structure, but is ultimately something else.

In Short's terminology, "Egg represents the egotistical, the view of the self as unique and special" (2015, 87) and "The egg principle is the principle of consensus, the principle of combination, or the principle of the authorial self" (2015, 96). Notably, Short also uses this to include human curation and mixed-initiative generation.

In a generative system that emphasizes the individual artifact, the player can be expected to scrutinize each individual result more closely. An individual-focused generator puts more depth into the generation of each artifact. Here, quality is far more interesting than quantity. Individual artifacts can, nevertheless, participate in larger systems. While the artifact as a whole might be unique, parts of it can reflect the system that made it. The engravings in *Dwarf Fortress* (Bay 12 Games, 2018) are each individual and unique

(when created by a skilled dwarf), but the images they depict are linked to the history of the world and the events in the fortress where they are engraved (“DF2014: Engraving”, 2018).

In general terms, gestalt aesthetics tend to dominate in pure Apollonian or pure Dionysian systems, such as tile patterns or white noise. Structured aesthetics, such as *Spelunky*’s level generator, tend to be unbalanced mixtures of the two. Complex systems, such as the fixed-seed map generator in *Exile*, tend to favor individual aesthetics, because a single artifact has more scope to display internal variation. But these aesthetics are orthogonal to the Apollonian/Dionysian tension, and can be found in many different permutations.

In summary, the locus of the generator can be described as the balance between the surface of the individual artifacts it generates, the structure of the process that it uses, and the ideas that the player perceives in the gestalt of the things generated (Fig. 4).

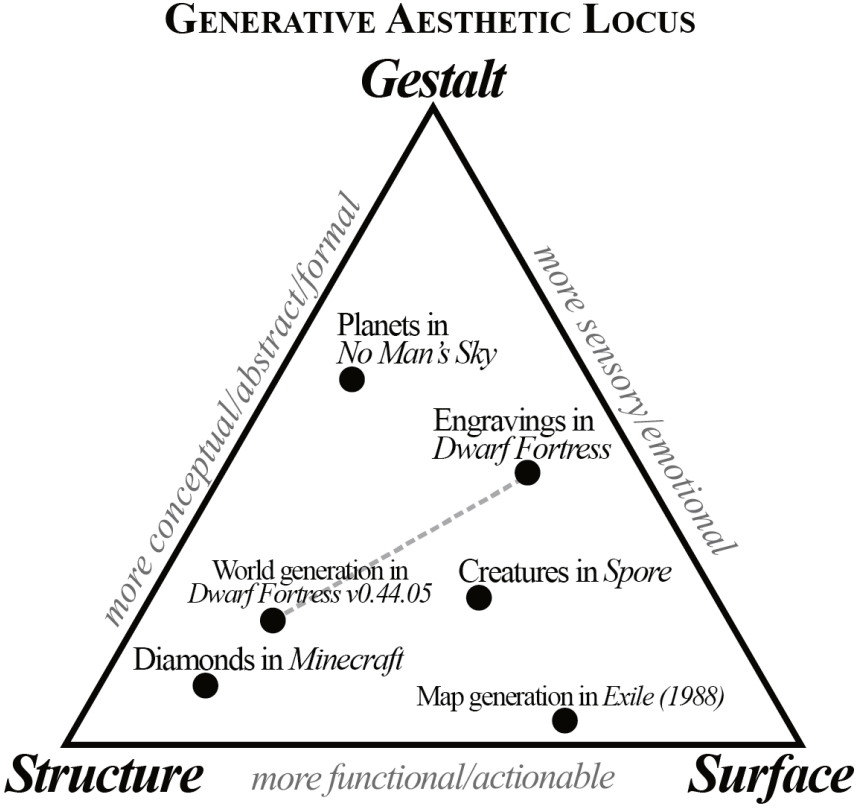

Figure 4: Generative aesthetic locus: the player's experience of a generator is a balance between the structure of the process, the ideas and associations the player perceives indirectly in the gestalt, and the immediate surface interface of individual artifacts that the player can interact with or directly observe.

VARIATION: MULTIPLICITY, STYLE, COHESION

A third set of aspects involves *variation*. A common reason to use a generative system, after all, is that the results are not fixed, or at least not predictable. But there are different kinds of variation, including multiplicity, style, and cohesion.

Multiplicity

The most obvious form of variation is a generator that can produce a wide variety of very different results. The naive form of this is popular: for example, players and press gushing that a generator has 18 quintillion outputs (Higgins, 2014). Just as the effective complexity of white noise is lower than its incompressibility implies, the perceptual uniqueness of a generator can be much lower than its theoretical variance.

Kate Compton has framed this as the "10,000 bowls of oatmeal" problem (Compton, 2016): an oatmeal generator can produce an incomprehensibly vast number of configurations of individual oats, but they all get glossed to the gestalt symbol of nearly indistinguishable bowls of oatmeal.

To maximize the effectiveness of multiplicity, the variation should be closely tied to both the visual presentation and the other systems in the game. Effective variation matches the importance of the variation with the significance of its presentation.

For example, human visual perception strongly relies on contour. When subjected to a blank, diffuse field of vision, such as in a homogenous Ganzfeld, the observer usually ceases to perceive color (Cohen, 1958). Artists and animators use this in character design: silhouette is a stronger signal than interior color. We can likewise apply it to the design priorities in generative systems. At launch *Elite: Dangerous* (Frontier Developments, 2014) featured a space station generator that was capable of creating a wide variety of different configurations for their large, spun-axis stations. However, due to the way that the docking mechanics worked, players typically observed the station from end-on. Since the station designs were roughly cylinders, and the player was focused on the docking port in the middle, this led to the wide range of variation being much less noticeable in practice (Karth, 2015).

Style

Distinct from the aesthetics of multiplicity, variation also exists within individual artifacts. This can be either to constrain the artifact to conform to a set of constraints, or to enable the artist to shape the artifact directly. For example, a tree generator that takes the surrounding space into account and adjusts the tree accordingly. Or alternately, gives an artist control of the parameters of the generator, selecting one specific tree out of the generator's possibility space. An instance of this in practice was the production of *The Elder Scrolls IV: Oblivion* (Bethesda, 2006), which involved using SpeedTree's generative system to generate the trees which the artist could adjust manually, enabling them to rapidly place trees and vegetation (Davenport, 2017).

This aesthetic measure is the *style* of the artifact. Style, in this definition, measures the degree to which the generator is able to adjust an artifact to conform to an objective. In contrast to multiplicity's diversity of outputs, style is about getting the right generated result. This use of "style" is inspired by Jo Mazeika's work on style generation (Mazeika and Whitehead, 2017).

Dwarf Fortress (Bay 12 Games, 2018) uses this frequently when generating poetic forms, books, legendary artifacts, and the engravings mentioned above. Using content from the simulated world history, they exhibit style that reflects both that history and the individual history of the fortress the player has created. Similarly, *Ultima Ratio Regum*, Mark R. Johnson's in-development roguelike, uses style for the culturally-influenced artifacts and the AI of NPCs (Johnson, 2015).

Effective Variation

Like effective complexity, effective variation is largely concerned with finding a balance between multiplicity and style (while also keeping the results coherent and consistent).

As mentioned above, one way to measure the variation of a generator is through the process of expressive range analysis, via a metric that is an emergent result of the generator rather than one of the parameters to the generator (Smith and Whitehead, 2010, 1). Exactly which emergent result to measure depends on the designer's goals for the generator and the structure of the generative system itself.

Emily Short uses "Venom" to describe a concept related to effective variation:

> Venom is meant in the sense of toxin, hallucinogen, bitterness, acid, etching, numbness, drugs, and release from the mortal coil. Venom represents that which is destructive, fictive, cruel, lovely, playful, unreliable. Poisonous things come in jewel colors. The principle of venom permits the use of connotation rather than denotation. (93)

When "writing venomously" Short recommends that, when adding variation to text, the focus should be on finding the most statistically implausible, meaning-bearing words in a sentence. When writing a template describing how a crime was committed, "the Principle of Venom suggests the use of a large, autogenerated corpus to supply the crime, rather than relying on the author's own imagination" to produce results that "are genuinely outside the expectations of the author" (Short, 2015, 95).

Separately, Short suggests that the number of conceptually-surprising variations should be kept to a few effective ones, to avoid creating overly-complex clashing images. Over-variation is prone to a kind of metaphor fatigue.

Elsewhere, Short suggests that one way to avoid the oatmeal bowl problem is to tie the generated results back into the other systems in the game. This can either be in a structured way—which she compares to the combinatorial effects of cards in a deckbuilding

game—or in a low-level gestalt approach, with small-scale but persistent effects (Short, 2016a).

Cohesion: Data, Metadata, Beeswax

One misconception that some players have is that the ideal procedural content generator is one that creates everything from scratch, with no external content. This is a category error: every generator uses external content. In some cases that input can be supplied algorithmically via another generator, but every generator needs to ground-out in designer-created input. While it is possible to replace all textures with mathematical functions, the design of the texture-function itself is a form of expert content authoring.

Hand-authoring different generators can sometimes be the most effective way to create a generator with wide variation. Likewise, hand-authoring content is often the most efficient way to create certain kinds of inputs—many text generators exploit their specific authoring.

Data: Content

All procedural generators use some form of data. It can be via algorithms, the parameters, or some more complex hand-authored content. Moreover, the data the designer chooses to include is intrinsically bound to the effect of the generator.

It can be useful to consider a system that deploys that data separately from the corpus of data. But the data itself often has a structure that affects the distribution of the generator. Take a Markov chain text generator as an example: the algorithm remains fixed but the distribution of words in the corpus determines the distribution of words in the output. A change in the corpus has significant effect on the generated output. Even in more complex generators, such as the Deep Dream neural-network generator (Mordvintsev et al., 2015), the disproportionate number of dog-breed categories in the 2012 ImageNet image recognition dataset

affected the aesthetic results of the generator (Connor, 2015), which is sometimes called the "puppyslug" effect.

This should not be surprising: the meaning derived from the juxtaposition of two intercut images, first referred to as the Kuleshov effect (Kuleshov, 1974, 5) works as a part of film language regardless of the content it is used with, but the meaning of a particular montage depends on the content being cut. The poetics of procedural generation exhibit analogous properties: the content used in the generator matters.[6]

Many generators produce very different results depending on the data that they use. *Spelunky* (Mossmouth, 2013) uses different templates for each area (Jungle, Ice World, etc.) and room type in its level generator. *Dungeon Crawl Stone Soup* (2017) has a large library of vault templates that it similarly deploys across its dungeon branches. *Dwarf Fortress* (Bay 12 Games, 2018) can be modded to generate very different worlds simply by editing the data files it uses.

Metadata: Cohesion

The struggle with data is that it needs to be self-consistent enough for the generated content to be perceived as a unified, sensible result. Some forms of data are able to use implicit relationships, such as the relationship between points in Perlin noise (Perlin, 1985), or the relationship between different instances of Perlin noise with similar parameters. But additional metadata is often needed to give the generator enough context to assemble a coherent result.

Metadata can be as simple as a tagging system giving context to the strings in a text generator. And for many generators that is enough, when combined with connotation, allusion, and elision, to

6. . This is, notably, a point Kuleshov might disagree with: his original formalist point was that the content was subsumed by the form, influenced by the scientific management techniques of Taylor (Prince and Hensley, 1992). Though Kuleshov's later writings revised his view to emphasize that, "In no case should one assume the entire matter of cinematography to be in montage" (Kuleshov, 1974, 195).

maintain the illusion of complex relationships (Dias, 2016). But, following the *SimCity effect*, where the expectations the surface creates connect to the procedural system they represent (Wardrip-Fruin, 2009, 301), the most effective metadata is visibly related to the shape of the underlying generative system.

Often the automated creation or use of metadata is an important step in automating the generator. The innovation of word vectors (Maas et al., 2011; Mikolov et al., 2013) has simplified natural language processing in useful ways, giving us a rough but effective way to quantify the meanings of words.

Beeswax

When we analyze a generator, we should also pay attention to how it integrates hand-authored content and how it intersects with the fixed systems that it lives between. For Emily Short, the use of corpora falls under the heading of Beeswax, drawing on the image of a hive sharing the task of constructing a honeycomb. Short points out that using a human-assembled corpus inevitably also brings in the cultural assumptions of those who compiled it (Short, 2016b), which is its own form of metadata.

Beeswax also includes the idea of one-off content and content that is "hand-written for particular cases" (90). This point should not be overlooked: when discussing procedural generators, it is tempting to focus solely on the most generative parts, but the hand-authored content often anchors the generator's structure. *NetHack* (2015) is well known for including hand-authored responses to unusual situations, inspiring the Usenet meme that "the dev team thinks of everything" (Bridgman, 2016).[7]

FUTURE WORK

The model, deliberately incomplete, lacks characterization of several important aspects, such as interactivity and user

7. . See the many rec.games.roguelike.nethack Usenet posts to this effect, for example: Ashmead (2004).

involvement, giving a starting point for future research. However even with the present state of the model, there are two immediate applications: as a metric for criticism and as an evaluation tool during the creative process. By applying the model to existing and future works we can test the usefulness (and validity) of the model. Can it usefully describe the aesthetic properties of a wide range of generative works? Can we improve a generator by evaluating it with this model? Do the changes the model suggests align with player perception of the expressive range?

Possible future directions of inquiry include examining the metaphor of visualizing generative aesthetics in parametric probability generative space. Existing aesthetic categories such as balance and contrast seem to usefully apply to the Gaussian roll of two dice or the possible floorplans for a dungeon. Other aesthetic lenses might be equally fruitful. In particular, the examination of the effects of different forms of probabilistic distributions has deep scope for examination: the discussion of Apollonian and Dionysian in noise only scratched the surface of noise color, noise warping, and the perceptual uniqueness of landmarks in generative space.

Complexity	The balance between **Apollonian** (generation by rules and structures) and **Dionysian** (generation that uses chance and disorder). The combination of both produces **Complexity** and information (in the information theory sense).
Form	The balance between the **Individual** generated artifact, the **Formal Gestalt** of all the artifacts the generator produces, and the degree of **Repetition** (or obvious lack of perceived uniqueness).
Locus	Where the player's focus is centered, in a balance between the **Structure** of the generator's processes, the **Locus Gestalt** of the generator's output, and the **Surface** of the immediate experience of individual generated artifacts.
Variation	The generator's output can exhibit **Multiplicity** by generating many perceptually distinct things; **Style** by generating things that conform to an objective; or the content a generator uses as data and how **Cohesive** the results are.

Table 1: A summary of the aspects of generative poetics this paper covers.

CONCLUSION

We have introduced a series of lenses for analyzing procedural generation from an aesthetic and experiential perspective (Table 1). The lack of vocabulary to talk about the why of procedural generation has led to inappropriate application of metrics—for example, the popular press gushing about use of 64-bit seeds in *No Man's Sky*, or applying the linearity and leniency metrics introduced in expressive range analysis (Smith and Whitehead, 2010) to generators that have nothing to do with *Mario* level generation. Using the framework presented in this article, game studies critics have a more nuanced way to discuss the output of generators, designers and developers have tools to describe their priorities when designing new generators, and researchers have a blueprint for defining their research into new forms of procedural generation.

The way a generator expresses information can be through Apollonian tile patterns, Dionysian noise or complex combinations of the two. The form of the generator can expressively use gestalt forests, repetition of orchards, or the generation of individual trees. The locus of the generation can be on the details of an individual artifact, as in the map in *Exile*; the structure of the generation process, as in the pattern of diamonds in *Minecraft*; or the gestalt of the generator's output, as in the planets in *No Man's Sky*. Individual artifacts bridge both the form and the locus. Orthogonal to both form and locus, the variation can exhibit the multiplicity of perceptually unique output, cohesion of the results, and a style that conforms to a goal. The different principles are related but distinct, perhaps best imagined as a multidimensional vector with partially interrelated axes, or a series of contrasts and congruencies.

We have presented a preliminary outline of the poetics of procedural generation in games, sketching out some of the principles that describe how generators are used and how we can meaningfully discuss the shape of the things they generate. It is our hope that this initial work can inspire further refinements and

foster deeper discussion of how procedural generation is used in games.

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