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PART 1: DIGRA

EVE IS REAL: HOW CONCEPTIONS OF THE 'REAL' AFFECT AND REFLECT AN ONLINE GAME COMMUNITY

Marcus Carter, Kelly Bergstrom, Nick Webber, Oskar Milik

ABSTRACT

Used in a wide variety of contexts, a common colloquialism among *EVE Online* players is the phrase '*EVE* is real'. In this paper, we examine the various ways in which *EVE* is considered 'real' by its players, identifying a nuanced and powerful concept that goes significantly beyond real/virtual distinctions that have already been critiqued in game studies literature. We argue that, as a form of paratext, colloquialisms like this play an enormous role in shaping *EVE Online's* informal rules (in particular towards treachery), constructing the identity of *EVE Online* players, communicating the seriousness of *EVE Online* play while in other cases, emphasizing the gameness of the MMOG.

Keywords

EVE Online, paratexts, players, community, linguistics, identity, online interaction

INTRODUCTION

EVE Online (CCP Games 2003) is a science fiction themed massively multiplayer online game (MMOG) in which players

assume the role of 'capsuleers' in a single shared virtual world with over 4,000 solar systems. Marketed as a 'sandbox' game (CCP Games 2015a), players are told they are free to choose their own path and that even the smallest player decision can have wide-reaching consequences on the entire single-shard gameworld. Therefore, the majority of *EVE Online* play is driven by interactions between players, ranging through the complex marketplace where the majority of products are made by players using minerals mined by other players, to the lawlessness of 'null-sec' where vast Alliances of tens of thousands of players wage bitter wars over game territory without the protection of any sort of NPC intervention when facing attacks.

A widespread colloquialism used by both *EVE Online*'s players and its developer (CCP Games) is the term '*EVE* is Real'. This phrase is mobilized with a variety of meanings and tensions that extend much further than what is captured in early game studies scholarship on distinctions between 'real' and 'virtual' (for an overview, see Lehdonvirta 2010). In this paper we present and explore the multifaceted ways that '*EVE* is real', and argue this emic term (along with a few other phrases commonly used by this MMOG community) are powerful paratexts that play an enormous role in shaping *EVE Online's* informal rules and culture, constructing the identity of *EVE Online* players, communicating the seriousness, and work involved in, *EVE Online* play while also working in other cases to emphasize the gameness of the MMOG and encourage others to take the game less seriously.

Consequently, this paper works in tandem with scholarship on a wide variety of games that is emphasizing the important impacts that game paratexts have on shaping the culture and identity of multiplayer game worlds as well as the meanings brought to and taken from individual acts of play. We argue that this case study of such a seemingly straightforward phrase ('*EVE* is real') and the significant impact it has on both the play and

experience of *EVE Online* emphasize the multitudes of very real meanings that players attribute to this MMOG's play.

LITERATURE REVIEW

In this paper we approach the colloquialism of '*EVE* is real' as a form of paratext. The concept of paratexts was originally developed in the context of literary theory by Gerard Genette (1991; 1997) who argued that a literary text rarely appears "without the reinforcement and accompaniment" of paratexts "which assure its presence in the world, its reception, and its consumption" (Genette 1991, 261). Mia Consalvo (2007) introduced the concept to game studies for understanding the influences of games' peripheral industries (gaming magazines, online discussions, trailers, developer diaries etcetera) on contemporary digital game play and the meanings players bring to and take from that play. One example is how "what we know about videogames is shaped by what we learn about them before they are ever released" (Consalvo 2009, 51); screenshots, developer diaries and news (all forms of paratexts) frame the initial reception of the game. They "serve a specific role in gaming culture and for gaming capital; they instruct a player in how to play, what to play, and what is cool (and not) in the game world" (2007, 22).

The concept has been widely employed in game studies following Consalvo's *Cheating* (2007) and has been applied to game guides (Carter 2015; Iacovides et al. 2013), game trailers, online discussions, developer diaries (Consalvo 2007), patch notes and underlying mathematical mechanics (Paul 2010; 2011), prior versions of the game (such as in the case of sequels) (Carter 2015a; Consalvo 2009), 'easter eggs' and other hidden content (Harper 2013), 'bots' and 'mods' (Burk 2010). Walsh and Apperley see the paratext as "the key example of a tangible form of exchange" between gaming capital and literacy (2009, 4), and also include other mass media such as commercials, music and movies which have become inextricably intertwined with the

media ecology of contemporary digital games. This typical application of the term 'paratext' has also been critiqued as being conflated with the concept of intertextuality (Dunne 2014).

In his original conceptualization, Genette distinguishes the paratext into *peritext* and *epitext* where "paratext = peritext + epitext" (Genette 1991, 264) based on a number of salient qualities, including its special relationship to the text, officiousness and permanence. Elsewhere, Marcus Carter has argued that the evolving and interactive nature of many contemporary games (in particular *EVE Online*) has resulted in a substantially different form of paratext, the *emitext*, "a form of paratext which emerges from within the game as part of play, rather than as part of a peripheral industry that surrounds it" (Carter 2014, 21). Carter notes that, unlike most literary texts, games change over time through continued updates, patches and expansions, while influxes (and exoduses) of players can radically alter a game's culture and informal rules. He points to *EVE Online* propaganda, persuasive images, videos and rhetorics employed strategically as part of *EVE Online's* large Alliance warfare, to demonstrate the ever evolving nature of game 'texts' and the fluidity of the relationship between 'text' and paratext.

In this paper we approach game community colloquialisms like 'EVE is real', as well as a small number of other common sayings such as 'Excel Online', 'Internet Spaceships are Serious Business' (or *Srs Bznz*, Carter, Bersgrom & Woodford, 2016) and the categorization of *EVE* as a 'sandbox game' as forms of epitexts. Like online discussions, game reviews and adverts these paratexts shape our perceptions of the game, how the game is experienced and the meanings brought to and taken from *EVE Online* play. Understanding the varied meanings and usage of these terms is necessary for understanding *EVE Online* play, *EVE* culture and *EVE's* identity but also demonstrates the impact that such simple paratexts can have on game worlds and their experience.

EVE Online

EVE Online is a science fiction themed MMOG at the periphery of its genre. Unlike the relatively homogenous avatar-based fantasy MMOGs that draw on tropes and mechanics largely unchanged since their original implementation in games like *Ultima Online* and *Everquest*, *EVE Online* is an avatar-less (see Carter et al 2012; Woodford 2012) virtual world navigated by players in uncustomizeable spaceships. The majority of play is player-driven, and features a complex in-game economy where the majority of ships flown are manufactured by players, using minerals mined by players from the in-game environment (see Taylor et al 2015). Unlike most MMOGs that are distributed across multiple shards, all *EVE* players share a single virtual world (see Emilsson, 2016).1 Within it, players form Alliances and Coalitions of tens of thousands of players who wage vicious wars over in-game territory and power (see Bergstrom & Carter, 2016 for an overview of *EVE* play).

Beyond this emphasis on player driven gameplay, *EVE Online* has several unusual game mechanics and design patterns that heavily contrast it from nearly all other online games. Couched within *EVE Online's* dystopic, ruthless and hyper-capitalistic fiction, *EVE Online* features condoned and pervasive treacherous play, including scamming, theft, espionage and bribery (see Carter et al. 2012; Carter & Gibbs 2013; Carter 2014, 2015; Harrison, 2016). Similarly rare, *EVE* employs consequential game play — when ships are destroyed in combat, they are considered destroyed and their entire value to the player lost (which can often exceed $9,000). In theme with these two unusual design patterns, *EVE* has a reputation as an incredibly harsh and difficult game, and Chris Paul (2011, 2012, 2016; and with Bergstrom et al. 2013) has argued this elevated difficult has a role in homogenizing the player base, forcing players to reach out to others for help and consequently have a more social experience. However, both Paul (2011) and Bergstrom (2013) point out that

the sorts of help and new player guides that exist are often more available to certain demographics of players, which in turn leads to a more homogeneous player population than other popular MMOGs.

There has been much speculation about *EVE Online*'s outlier status in the MMOG marketplace and its resultant player population, namely that the playstyle offered by *EVE* is not attractive to female players. Indeed, while the majority of other MMOGs player populations are assumed to be 30-40% women, *EVE Online's* population is apparently – at best – 2 to 4% women (Bergstrom 2012, 2016; Leray 2013). The result of this harsh, unwelcoming, homogenizing and player-driven virtual world is a rich and varied culture distributed widely across various forums, subreddits, chat rooms and voice servers with dedicated news websites, twitter hashtags and third party applications to support play. Without linear narratives to follow, *EVE Online* forces players to create their own goals to imbue their play with meaning.

Methodology

This research brings together insights from a number of different studies conducted separately by the authors, drawing on a variety of different research methodologies. Carter has conducted a grounded theory study of the practices, experiences and impacts of treacherous play in *EVE Online* (Carter 2015b; Carter & Gibbs 2013), and an ethnography of the *EVE Online* Alliance, TEST Alliance Please Ignore (see Carter 2014; Bergstrom et al. 2013). Bergstrom has investigated *EVE* and its community from multiple angles including observing *EVE* play in a lab-based study (Jenson et al. 2013) interviewing current players at LAN parties and at the annual Fanfest convention (Taylor et al 2015). Her doctoral research investigates how *EVE Online* is understood by former and non-players to learn more about how this game is viewed from the periphery of its community. Webber has explored the historical discourses

presented around *EVE Online* to understand how *EVE* functions as history (Webber 2014), while Milik has examined how *EVE Online* players create their social identity through the lens of Erving Goffman's dramaturgical theory (1959) and ethnomethodology (Garfinkel 1967). These methods were combined to more effectively study the categorization strategies (Milik 2012) of individuals in *EVE Online*, particularly in TEST Alliance Please Ignore.

While each results section corresponds with the research interests of each author (Carter, Webber, Milik and Bergstrom respectively), each has offered findings and insights relevant to each use of the term '*EVE* is real', capturing a variety of perspectives and approaches to the colloquialism in order to best understand its tensions, its meanings to players and its impacts on *EVE Online*, its culture and its experience.

RESULTS

In the subsequent sections, we discuss four uses of the colloquialisms '*EVE* is real' and the phrase's consequent effect upon *EVE Online*. While widely used by players, the term was first popularized by *EVE Online's* developer CCP Games in 2011, where it is cited as coming "from an internal discussion about how to explain the game to outsiders" (via Martensson 2011). Centrally reiterated at the 2011 Fanfest (the annual player-convention in Reykjavik, Iceland) and in an official "EVE is Real" player-made video contest, the term has been freely appropriated by *EVE* players in a wide variety of contexts.

Figure 1 – CCP Games CEO Hilmar Peturson at EVE Online's official convention in 2011 (via Martenson 2011)

EVE IS REAL, JUST LIKE THE REAL WORLD

One of the most powerful ways in which the colloquialism '*EVE* is real' has influenced the game is by helping shape *EVE*'s informal rules to accept a wide variety of treacherous play styles that are otherwise unacceptable in other online games. This takes a wide variety of forms in this game: espionage and sabotage in *EVE's* Alliance warfare; bribery and betrayal in *EVE's* eSport (see Carter & Gibbs 2013; Carter 2015b); and the most common, scams and thefts. Elsewhere, Carter (2015c) has argued that scams in *EVE Online* are a form of "social" player-versus-player (PVP) combat where social skills (rather than game skills) are the domain of competition; the scammer's ability to deceive you, and your ability to detect the scammer's deception, for example. As it is motivated by in-game reward such as financial advantage, rather than causing a negative experience on other players, it is unfair to consider it a form of cheating or griefing as it has been in prior work.

CCP will rarely intervene in complaints made against players who scam or "cheat" within this gameworld. A consistent rationale behind these distinctions between what requires

intervention and what does not (and cases of enforcement in borderline cases) seems to focus on disallowing technical exploits (such as hacking the game client to make your character stronger, which would not be possible in the physical world) but allowing social exploits (which would be possible). There are only a small number of exceptions to this, such as impersonating CCP employees and forbidding harassment. The official *EVE Online* support page defines a scam as follows (emphasis ours):

> **As can happen in the real world**, someone in EVE may try to cheat you out of your hard-earned possessions… A scam is what happens when someone takes advantage of your misplaced trust, temporary confusion or ignorance of game rules, and robs you via legal in-game means. When this occurs, there is nothing the Support Team can do for you. Although low and despicable, scams do not violate any game mechanics and cannot be compensated for by the GMs [Game Masters], nor can the scammers generally be punished for their actions. (CCP Games, 2015b)

The appeal to the 'real world' is clearly evident in this description. Further, on this page (and throughout various developer blogs and other CCP-created resources) they distinguish between scams and exploits, where an exploit is "when someone bypasses normal game mechanics… allowing him to take advantage of other players without them having any means of preventing it whatsoever" (CCP Games 2015b). The consequence of this distinction has resulted in '*EVE* is real' being widely utilized by players in order to justify various treacherous acts that are possible in the real world, but normally condemned in game contexts. In Carter's scamming study (see Carter 2015c), numerous participants appealed to the concept of *EVE* being 'real' or like the real world in order to justify their play:

> EVE is real…ly just as screwed up as the real world.
> Anything is possible in EVE
> I mean, you have to be careful with who you trust in the real world, and I like that in EVE

Similarly, forum comments discussing the legitimacy of scamming within *EVE* often simply state "*EVE* is real" or "as if the real world isn't already like that?" in reply to people complaining about the presence of scamming in *EVE Online.* In 2012, allegations emerged that a candidate for the 'Council for Stellar Management', a player-elected council that convenes with CCP Games regarding the game's ongoing development, was scamming players for votes in the election by claiming they would be paid in-game money if they provided proof they voted for him.

> if I remember correctly he did this in last elections already… nothing new – EVE is real – move on…

Discussions around this specific instance and some similar cases result in many players referencing the way in which 'real' politicians are "lying snake bastards", consequently demarcating such behavior as acceptable in the MMOG.

In Carter's study of *EVE Online's* eSport (see Carter & Gibbs 2013; Carter et al. 2014), in which bribery, spying and sabotage are crucial and legitimate strategies, '*EVE* is real' is similarly brought up by players in debates and discussions about the legitimacy of treacherous play strategies in the sport:

> EVE is reality, its reallife with spaceships in a game
> Diplomacy, management, leadership and morale are all very real and human factors.
> how do you know this sort of stuff doesnt happen in professional sports?

Interestingly in this case the colloquialism was also used in these debates in tandem to suggest that such conduct isn't acceptable, as *EVE's* eSport is a 'real' sport, where such conduct would be disallowed by tournament organisers (see Carter et al. 2015b for an expanded discussion of this). This reveals a tension inherent in the concept, as '*EVE* is real' does more than simply assert the 'realness' of *EVE* play, but sometimes the way in which it is also

not just a game. Thus, it is not strictly the colloquialism shapes the rules, but that – when put to work by players – it reflects the attitude of those shaping (or attempting to shape) the rules in different ways.

Finally, *EVE Online's* large Alliances engage in espionage in order to gain in-game advantage. This can involve anything from simply monitoring the private communications of enemies to gain strategic advantage, to in-game acts of sabotage that rival the contribution of military skill. As in Carter's studies of scamming and *EVE's* eSport, the 'real-ness' of these practices, and how '*EVE* is real' are crucial for their legitimacy:

> EVE is real right? Its just much more realistic. Just like in real life you weigh the costs and benefits in trusting someone or not …
>
> I like it [espionage], it adds an insane amount of immersion and complexity that i've never gotten out of any other game… Spying on a group that you are actually at war with feels really… Visceral I guess.

In reference to a case where a player was denied an in-game fight because of sabotage,

> Its annoying sometimes but that's what war in EVE is meant to be its meant to be more real, its harder, its more intense

These quotes, that exemplify widespread attitudes identified during this study, demonstrate how this use of the '*EVE* is real' colloquialism is important in legitimating certain types of play in *EVE Online*. When used to dismiss complaints about *EVE* treachery in online forums, or in order to advertise the game, players learn to expect treachery and that it is acceptable to enact it. The distinction also places a clear ceiling on what conduct isn't acceptable (such as technical exploits); as you are unable to hack the physical world to make yourself invincible, you are not allowed to do so in *EVE Online*. Finally, a further tension is explicit in that these practices are only possible as play because

EVE is in-fact NOT real, an irony rarely explored by EVE players but one we will return to in a subsequent section of this paper.

EVE is REAL, History

Given that this conception of 'realness' is fundamental to many players' engagement with the world of *EVE*, therefore, it is only to be expected that it finds its way into many different aspects of the *EVE* experience. One notable venue for such deployment is in discussions focused on the historical experiences of the game's players. In fact, in *EVE*, the space of history is one in which the notion of realness is repeatedly explored, not only by players but also by *EVE*'s developer, CCP.

The *'True Stories'* project is perhaps the most significant repository of historical engagement around *EVE*, although other locations, such as the extensive range of player blogs and the broadly defunct EVEHistory wiki, also reflect upon this theme. Initiated on the tenth anniversary of the game, *True Stories* was an environment in which player experiences could be captured in narrative form. Contributions were driven by the attraction of a prize, along with the possibility that, following a vote, the 'winning' stories might appear as books, comics, TV series or films. Although it did not directly deploy the phrase '*EVE* is real', *True Stories* indicated a synonymous objective: 'to collect the most important stories of *actual* events' [our emphasis]. And, in fact, in its very title, *True Stories* made a claim to a strict form of reality and deliberately so. The name was reportedly coined by CCP CEO Hilmar Veigar Pétursson to describe the essence of *EVE*: 'It's a collection of true stories set 20,000 years in the future' (Rosenburg 2013).

CCP's assertion of reality was, of course, matched by player responses. The stories, and the players' commentaries on them, reflected an insistence on the realness of the experience of EVE, alongside ongoing debate about associated issues: whether or not particular stories were true, which stories were important, and how the presentation of certain stories showed evidence of bias.

Here, 'EVE is real' was a marker deployed by several authors to warrant the qualities of their stories:

> This story highlights something we've known all along. That EVE is real. And yet, we say that without really clarifying what we mean. EVE is real because the emotions are real (Firstly, debate point 1414 in support of Firstly 2013);
>
> EVE is Real. I want to show people that EVE is more then a game of internet spaceships (Sahriah Bloodstone, debate point 1435 in support of Bloodstone 2013);
>
> Because EVE Is Real, stuff matters and wormholes are awesome (Sephira Galamore, debate point 901 in support of Galamore 2013);

with one notable commenter transforming it into an adjective:

> Best eve is real story I have read (Myelinated, 2 May discussion point on Xenuria 2013).

Such claims do not, of course, always pass unopposed. In one indicative exchange, a player called Xenuria set out a resumé of his own achievements as an entry into the *True Stories* competition, with an authorial coda that 'I was there, it was real. This is a true story of eve online' (Xenuria 2013). Yet even though the story received support from respondents like Myelinated, quoted above, who called it an 'accurate depiction of what occurred' (debate point 1209), others rejected it:

> This didn't happen. Totally fabricated (bandwidth, debate point 1208 in opposition to Xenuria 2013);
>
> Badly written, poor grammar and according to EVE history, total fabrication (Thorn Galen, 8 May discussion point on Xenuria 2013);

Xenuria subsequently sought out and posted evidence to support his claims, but the actions of his detractors here, along with those responding negatively to other stories on the site, clearly indicate that some players felt it was important to challenge particular versions or interpretations of the past. Thus the attempted truth of *True Stories*, in representing EVE's past – "our history", as the

EVE Online Facebook page has it (EVE Online 2013) – had some form of significance to players. Yet it is not entirely clear, from the debates which took place there, that *EVE*'s realness and the truth or 'actuality' of its history are quite the same thing.

Consideration of these uncertainties is not a purely academic endeavour, and just as much as *True Stories* can be seen as an attempt to summarise *EVE* for a broader public, its presentation and existence have taken these issues along with it. Media coverage around *True Stories* has often seemed happy to elide realness and truthfulness, referring to 'real stories of events inside the sandbox' (Drain 2013) and, when interviewing Daniel Way, the writer who interpreted the winning story for publication, 'the draw of playing historian to the very real events in a fictional universe' (Sunu 2014). Yet Way himself was evidently conflicted about how he should understand the story with which he was engaged, remarking in 2013 that

> the story's based upon actual events that never "actually" happened, y'know?… The trick was to focus upon the initiative and intent of the players *behind* the campaigns. What *they* did *was* real and *did* actually happen (Way in Narcisse 2013)

but in early 2014 that

> The appeal was instant — it's an epic heist, plotted and executed to perfection *and it actually happened* (Way in Sunu 2014).

So, we are forced to wonder, is the interviewer's 'real' the same as Way's (changing) 'actual'? Are either or both the same as the story's 'truth'? And are any of these things reflections of what is meant when contributors to *True Stories* state that *EVE* is real?

There are two perspectives on *True Stories* which perhaps help us to think through these issues, and more fully understand what meanings are being indexed when '*EVE* is real' is employed in this context. The first of these is an entry to *True Stories* which attempted to capture the nature of *EVE*, under the title of 'The One True Constant' (Kitchner 2013). For the author of that story,

Inquisitor Kitchner, *EVE* is real because the players care about it. He explains:

> It is because we own our actions our history and our legacy that we care about it. We are willing to put ourselves through meetings, spreadsheets and otherwise grim but tedious tasks unseen in other games to ensure we carry on surviving, to ensure that we leave a legacy worth leaving (Kitchner 2013).
>
> … because people care about the connections they have made and the empire's they have built they are willing to do the "dull" things that keep empires running. It's why EVE is real (Inquisitor Kitchner, debate point 1129 in support of Kitchner 2013).

Kitchner's comments are echoed elsewhere, in a thread on the *EVE* forums asking players to vote in support of a story to create the kind of legacy that Kitchner mentions – to 'Forever Immortalize Arek'Jaalan' (Antiquarian 2013). Here, then, is an appeal to the value of the deeds of the past preserved (both by action and record) for the future. In this analysis, *EVE* is real because actions from its history have conditioned its present, and promise to condition its future.

The second instructive perspective comes from a blog post, written by *EVE* player Phox Jozarkul and entitled "EVE is REAL…The True Stories" (Jorkarzul 2013). Jozarkul sees *True Stories* as part of a set of activities which can be seen to, in his words, 'make EVE a game that it truely real to those that play it' (Jozarkul 2013). Jozarkul draws our attention to the planned media outputs from *True Stories* – in the first instance a comic book, and possible subsequent television series – along with CCP's plan (now completed) to build a real-world monument bearing the names of all *EVE*'s characters. Jozarkul's reality, then, would seem to be the manifestation of 'tangible' assets outside the game: media you can hold in your hands or watch on your TV, a monument you can visit.

Problematically, both of these perspectives on realness are imbued with a sense of the unreal. The principal output from *True Stories* to date has been, as Jozarkul indicates, a comic book.

Irrespective of whether or not we consider the story it holds to be real, the very format itself serves to diminish any such claims by situating it in a media form which itself struggles to achieve cultural legitimacy. Equally, when Kitchner considers *EVE's* realness in terms of its history, he begs the question of the trueness of the *True Stories*. As Hayden White reminds us, history may make claims to recount truth, reality and/or actuality, but it remains at heart just another form of writing, just another story (White 1973, 6-7).

So is *EVE* real? And can its history make it so? We come full circle, to Firstly's comment near the start of this section. '*EVE* is real', he says, 'because the emotions are real' (Firstly 2013). Kitchner tells us that *EVE* is real 'because people care'. *EVE's* history is important because history is about people; the *True Stories* make *EVE* real because they were actual stories that happened to actual people, and made them care, made a difference to the way they thought. The emotional context of Firstly's comment suggests that, when authors of *True Stories* say *EVE* is real, they not only attest to the reality (the truth, actuality, objectivity) of their stories, but to their experience of those events – as Xenuria said, '*I was there*, it was real' – and it is doubtless significant that, although various authors deploy '*EVE* is real' as a comment on their own stories, players responding to those stories hardly use the phrase at all. So to say *EVE* is real is perhaps to set these experiences on a par with other modern cultural events, defined by presence. In relating their tales of *EVE*, these authors then lay claim not only to reality, actuality and truth, but also to authenticity – this is *EVE*, and *EVE* (for me, in this experience) was real: *I* was there.

In summary, then, *EVE* is real because players can reflect on their past within the game – their history – and see how this has shaped their play experience and how they situate themselves within the world of *EVE* in its broadest sense. History for *EVE*, therefore, is another form of emitext (see Carter, 2014), and it and the concept of *EVE's* reality are mutually reinforcing. Thus,

EVE history is real because, for those who experienced it, it mattered.

EVE is REAL, WORK

A third common invocation of '*EVE* is real' is in the context of the enormous work involved in *EVE* play, or how serious, professional, and complex it is. From industrialists to bankers, from leaders and human-resources directors, from soldiers to spies, players tend to expend very "real" amounts of time and effort in order to try to achieve meaningful and complex goals within the game. By studying individuals' use of roles, a dramaturgical analysis shows that the relative success and professionalism displayed by an individual in *EVE Online* is very important. This is particularly true for those players that might present themselves as being more "serious." The legitimacy of these roles, and their importance to the play of *EVE Online*, is widely reinforced by reference to how "*EVE* is real".

While there are numerous contexts for PVP combat in *EVE Online,* the type of PVP that requires the most player-labor is warfare in *EVE's* 'null-sec', the area of the game where player groups can hold sovereignty over in-game territory. The largest of these groups exceed 10,000 members. Group leaders dedicate vast amounts of time and personal effort in order to achieve in-game goals and provide content for other players. A widespread and recognized risk of such significant work is 'burn-out', particularly in roles related to logistics, a position that is less public than other roles. The player's dedication is not something explained by a desire to be "popular" within a group, as leadership positions often are the ones given the least respect. This is something that is addressed in many speeches and forum posts. For example in one speech a leader in TEST (a large player Alliance) states:

> [Directors] are just doing a job. They put hundreds or thousands of hours into TEST. And when you guys, and this is a small minority

> of you when 20 you guys come in and shit all over them without giving them the opportunity to explain why they did what they did or what their position was… You know, it makes them feel bad. You know, they're just internet spaceship nerds just like you.

Despite the understanding of how draining these tasks may be, there are many individuals that still take on the necessary roles. Directors assume various semi-official roles in-charge of public relations, IT (forums and voice servers), human resources (and recruitment), and diplomacy. In the larger null-sec alliances, organizations take a form similar to that of many offline corporate entities, with compartmentalized departments being able to operate independently. These players approach and structure their 'play' through notions of 'real' professionalism, which has proven essential to continuing to exist as a competitive Alliance within *EVE's* harsh wars. As with *EVE's* history, which is 'real' in that it has meaning to players, the 'real' work conducted by *EVE* players is legitimated through the professional approach and appreciation by other players. The social relationships, roles, and obligations, in *EVE* are real.

Beyond these formalized, community based roles, similar 'real' professional constructs are used by individual players. Non-leader participants of null-sec alliances will encourage others to create a professional mindset about what they are supposed to be doing for the group. Not participating in the online activities with other members without good reason can be seen as not living up to the proper role of a member. As one forum-poster states:

> Just because the sun is out and about doesn't mean we shouldn't be playing with other nerds online fighting them off. Log in for fleets; try to at least participate and become a true internet nerd for 1 day".

By creating a professional and dedicated role (that of a participant "true nerd"), the speaker is trying to create a social requirement in order to exist within the alliance. This can be tied to many Corporations and Alliances having a minimum

participation rate, where players not included in enough kill-mails (a common measurement tool for combat participation) in a month may be fined or removed.

EVE Online play further resembles 'real' work due to the mathematical complexity of play which has led to a similar colloquialism, 'Excel Online'. This comes from due to the widespread need to employ Excel spreadsheets to attain in-game mastery. An industrialist, for instance, needs to be able to have a perfect understanding of resource value, production, transportation and sales costs for their production, or else they might find that they had not even made a profit from a long-term investment. PVP players similarly use spreadsheets to theory-craft (see Paul 2010) the effectiveness of weapons in different contexts, and Alliance logistics teams use spreadsheets to coordinate their logistics efforts (spreadsheets which then become the subject of enemy espionage attempts).

The complexity, extent, and hours of seemingly unappealing work involved in *EVE Online* play is unusual in the broader context of leisurely game-play. Through constant reference to *EVE* being 'real', 'real' professionalism and work roles are legitimated as an acceptable (and positive) way to engage with *EVE Online* at both individual and community levels.

Are some parts of EVE more real than others?

Up until this point of the paper we've examined the rhetorical underpinnings of the phrase "*EVE* is real" as an external claim. Used in this manner, *EVE* being real is an attempt to tear down the offline/online divide to highlight that the activities and interactions of *EVE* players are not limited to 'playing a game'. However, '*EVE* is real' is in some instances used by players as a means of ridiculing others who take the game *too* seriously. As helpful as '*EVE* is real' may be for once again picking on the magic circle of play, it is also a form of boundary patrol that limits the full potential of *EVE*'s sandbox and reinforces its status

as a game that exists apart from the moral obligations and legal systems of the offline world.

A visit to the official *EVE* discussion forums (hosted at forums.eveonline.com) will inevitably lead to a series of posts from players complaining about being scammed. This, given Carter's (2015c) ongoing work about the darker/ruthless elements of *EVE Online* play, is not surprising. As scamming is not explicitly prohibited by the Terms of Service (TOS), it can (and does) happen on a consistent basis within New Eden. What is interesting is that in some cases, such as the thread started on August 16, 2014 by Darth Ah'Na-tik,2 the complaints about scammers going unpunished are met with a reply of "*EVE* is real", and:

> Learn to distinguish fantasy from reality before you go making RL comparisons regarding EVE. It will help you immensely, as will knowing something about the game to begin with.

As evidenced by Carter's research described earlier in this paper, the ruthless elements of *EVE*-play (e.g. scamming, assassinating prominent players, etc.) necessitates *EVE* being only a game, as in the offline world many such activities would be highly illegal. However, while *EVE Online* may allow some members of the community to 'play' at scamming without repercussions, this does not mean that the disappointment and frustration felt by Darth Ah'Na'tik and others are any less real. And yet, this is where '*EVE* is real' gets complicated, as when it is used sarcastically (as above) this same phrase serves as a reminder to fellow players about what 'Real *EVE*' consists of acceptance that one has been scammed without expecting justice or sympathy. Being scammed is an essential 'part of the game' that should not be taken so seriously; it is just a game, after all. Indeed, such interactions on the forums serves as an example of *EVE Online* being real is actually dependent on which part of the sandbox is being discussed. Ultimately, the slipperiness of *EVE* being real or not real becomes more stable when we pay closer attention

to what activities are seen as being (really) "real", and what is mocked and derided as (sarcastically) "real".

'Real *EVE*' in the sense of what play is legitimated by vocal members of the community and the game's developer is discussed by Taylor et al. (2015). This paper serves as one of the first investigations of the miners and industrials who produce much of the raw materials that keep the in-game economy afloat. Taylor et al. argue that not only do the more PVP-oriented members of the community see the play practices of career miners and industrialists as not being 'Real *EVE*', but PVE play is also de-emphasized by CCP Games. Using a developer blog post ('Dev Blog') about the Burn Jita protests (CCP Explorer 2012) to illustrate their argument, Taylor et al. remind us that each time Jita – an important trade hub – 'burns' (e.g. is shut down by player-PVP), the server disruption locks out PVE players from a key site of their gameplay (p. 17). And yet, CCP Explorer's Dev Blog states, "as developers we watched in awe at another amazing thing our players brought to the universe we created" (para. 12) with no acknowledgement of the implication these protests had for players who come to Jita wanting to sell their wares or buy new supplies. *EVE* may be a sandbox, but Taylor et al. argue that within the 'sandbox' is a hierarchy with PVE at the bottom:

> To regard EVE as a site of experimentation in virtual governance is to note the ways that industrialists are denied the degree of agency afforded to the more vocal, visible, "EVE-ier" PVP players – those who are most responsible, in CCP's attempts to set EVE apart as edgier, more challenging, more hardcore than other MMOGs, for "making the game what it is". (Taylor et al. 2015, 17)

While feelings of frustration at not being able to access one's preferred mode of *EVE*-gameplay are real, any sort of responsibility is negated with a sarcastic comment to remind the complaining players that they are crying over internet spaceships.3 This brings us to a second ubiquitous phrase "internet spaceships are serious business" sometimes stylized as "srs bsns"4 and often appearing alongside the more sarcastic

invocations of "EVE is real". This phrase is used to *undermine* any arguments that EVE is real, serving as a not so gentle reminder that it is, in fact, "just a game". Furthermore, this is used as a sort of "reality check" to remind players that despite the large number of hours and deep emotional investment that they pour into the game, at the end of the day the wealth accumulated in New Eden is nothing more than pixels on the screen.

From the outside looking in, *EVE* may appear to be a monolith of badly behaved players doing terrible things to each other. However, this paper, in conjunction with recent work by Taylor et al. (2015) and Goodfellow (2014; 2016) act as evidence that *EVE* is not nearly as homogenous as its outward appearance may suggest. In this paper we have taken a first step towards articulating the tension between "EVE is real" and *EVE* being "internet spaceships", and how notions of 'realness' in a persistent, global virtual world are much more complex and multifaceted than they may appear in a shallow analysis.

DISCUSSION

The goal of this paper has been to emphasize how various emic *EVE Online* terms play an enormous role in shaping *EVE's* culture, its informal rules, its identity and its play. We have focused on the complex and multifaceted concept of '*EVE* is Real' due to its relevance to game studies scholarship that has dissected the real/virtual dichotomy. Our research contributes to the growing body of literature focusing on *EVE*, but primarily highlights the impact that relatively minor colloquialisms can have on game worlds, and the complex tensions when this power is put to use in a heterogeneous game community.

While in some cases, such as the professionalism of EVE players, "EVE is real" is an appeal to *EVE* as a non-leisure activity (an attempt to place it alongside work and professional sports), it is a concept that primarily attempts to (re)contextualize *EVE Online* play and its experiences in the context of other digital games, to attribute meaning to it without (necessarily) making

claim to its realness. Players do not necessarily believe that *EVE's* history is real in the same way as, say, the history of the Aztec Empire, but they do feel that the experiences of *EVE Online* players more closely resemble real-world (non-game) experiences than other games. Many *EVE Online* players are proud of the way that their chosen MMOG differs from the mainstream and continually replicated formulas of *World of Warcraft*, *Everquest*, *Guild Wars* and *Star Wars: The Old Republic*. It is not that players believe that "*EVE* is real" in the same way as Wall Street banking or Cold War espionage, but that *EVE* is simply more real than these other games; more like what is acceptable in the real world, more dependent on actual work, more susceptible to dismissal and a more authentic experience. The tandem sarcastic use of "EVE is real" (and the similar, 'Internet Spaceships are Serious Business') is employed to remind everyone that EVE is, after all, just a game, and many of the transgressive acts are only acceptable in their game context.

Finally, we wish to note that this analysis focuses predominately on PVP-related activities, which highlights how not all *EVE* play is viewed equally. Work by authors such as Goodfellow (2014), who focuses on the maligned experiences of *EVE's* Russian minority, and Taylor et al. (2015), who examined pervasively denigrated PVE players, highlights how many *EVE* players, along with their desired style of play, are treated as less valuable by many players and even through the actions of the sandbox's developer. Thus, it is not simply that the '*EVE* is real' paratext is used by a mythically homogenous '*EVE* player', but that it is used by different communities of *EVE* players to value (and devalue) different play styles and communities. We argue that this poses a pressing question for future research by game scholars: who, exactly, is *EVE* real for?

ENDNOTES

1. With the exception of Chinese players who are separated as a result of Chinese gaming legislation.

2. At the time of writing, this thread is still online and available at: https://forums.eveonline.com/default.aspx?g=posts&m=4917897#post4917897
3. While outside the scope of this paper, we draw attention to a similar sort of tension between one's own experience and deriding the assumed experience of imagined other MMOG players, as described by Bergstrom, Fisher, Jenson (2014).
4. Here we note that the serious business of the internet is not limited to *EVE.* While outside the scope of this paper, this phrase's history can be found in studies of "chan-culture", see for example Dibbell (2008) or Manivannan (2013).

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PLAYING ACROSS MEDIA: EXPLORING TRANSTEXTUALITY IN COMPETITIVE GAMES AND ESPORTS

Ben Egliston

ABSTRACT

The aim of this paper is to explore the synthesis of digital games and observatory media facilitated by eSports and the competitive play of games. Borrowing from Genette's work in the field of literary studies, as well as media and game studies research, I describe the crossmedia assemblage occurring in competitive games as transtextual. A particular focus is the quantitative analysis of play in Valve's Dota 2. Using publicly archived player statistics, I describe how the broadcast play of professionals has come to exist as a locus of game knowledge and an impetus for styles of play for many amateur players. I argue that players must negotiate both the traditional gamespace and the space of surrounding texts with which gameplay has become conflated. Conversely, I posit that transtextual systems are situationally reflexive, and amateur players can assert change in professional domains. In addition to the compositional analysis of the crossmedia videogame form, I explore the phenomenological implications of this assemblage, namely digital games' movement away from its common conceptualisation as leisure based activity.

Keywords

Games, eSports, Transtextuality, Intertextuality, Paratext

INTRODUCTION

The competitive play of digital games has come to represent a complex dialectic between texts, namely the game-proper and the surrounding array of observatory media. The growing pervasiveness of spectator platforms and observatory practice across the contemporary gaming landscape has been impactful in forcing a reformulation of what games as a medium fundamentally involve and demand. With spectator platforms such as Twitch.tv becoming increasingly prominent fixtures in competitive games, play and spectator practices have become intertwined and the magic circle (Huizinga 1955, 10) breached. Games are no longer solely the domain of players, privileging ludic impulses, but rather spaces which invite observers to experience the immersive and transformative potentialities of gameplay, enabling non-players to adopt the values of the game world.

Through an exploration of Valve's Dota 2 (2013), this paper will build on the burgeoning theoretical tradition that many contemporary games function as dually played and surveilled spaces. Situated amongst object oriented ontologies of games and digital media and literary theories of paratextuality and intertextuality, the current study maintains that the textual dialogism inherent in competitive games palpably influences the ways in which users interact with game systems. Using the aforementioned discourses, this work will provide a conceptual schema for thinking about the affective power of the texts and objects which surround games. Specifically, an augmented version of Genette's transtextuality is proposed, equipped in deconstructing digital texts and the ways in which their users employ them.

In addition to proposing typologies for the analysis of the

transmedia assemblage occurring in competitive games, this paper will investigate spectator media as a node of cultural production. It will explore how paratexts are developed and employed by professional and amateur groups of players (that is, practitioners of eSports and regular game-players). Drawing primarily from de Certeau's tactical and strategic framework for thinking about the governance of culture (1984), this paper examines the ways in which transtextual play configures imbalanced power relationships between amateur and professional game players (or, generally speaking, the consumers and producers of paratextual content respectively). It is argued that the broadcast play of professionals has come to exist as an affective and edifying text.

Lastly, this study presents a phenomenological reading of transtextuality. I contend that the transtextual nature of competitive gaming has made permeable the boundaries between play as leisure and play as labour, as amateur players become co-opted into professional play patterns via spectatorship.

In order to demonstrate the expected association between observatory media and gameplay, I conducted a quantitative content analysis of player data, archived publicly on web platforms Dotabuff, Dotamax and datDota. The analysis focused on the period June to August 2014 (covering one content patch and numerous broadcast, LAN [locally hosted] and online tournaments).

What is Dota 2?

Dota 2 is a Multiplayer Online Battle Arena (MOBA) game developed by Valve and released in its first iteration on the personal computer in 2013. Dota 2 is a graphical and mechanical overhaul of the Warcraft III (2002) user modification Defence of the Ancients Allstars. Dota's gameplay represents an intersection of game genres, drawing from conventional tropes of the role-playing game (RPG) and the real-time-strategy (RTS).

Players choose from one of 108 unique characters, or Heroes, inspired by a fantasy aesthetic. Players are then able to specialise their hero choice based on their preferred metaphor for interaction; for example the Omniknight hero, for healing allies and protecting group-mates from harm. Each hero has at least four unique abilities, which can be honed in the order of the player's choosing, providing the player with the opportunity to occupy varied game roles. In order to increase one's proficiency with a skill, it must be leveled up. Levels are attained from killing enemy heroes (or being within proximity of an enemy hero kill) or through the defeat of non-player enemies on the map.

Like most conventional RPGs, the gameplay is centered around leveling and equipping a character. The game's item system is fuelled by a gold economy, another design fundamental of many RPGs. By slaying monsters, defeating enemy heroes in combat, and dismantling the defenses to the opponent's base, players are awarded gold. This gold amounts to items, which in turn facilitates the defeat of enemies. Where Dota's gameplay diverges from that of the traditional RPG is in its adversarial group-based play. Two teams of five players are pit against each other, tasked with the objective of destroying the opponent's base. As specific interactions exist between different heroes, skill specialisations and item builds, players must employ critical thinking and problem solving capabilities in real time, in order to overcome the enemy team. The scope and difficulty of the game have necessitated the production of texts laying out approaches to the game (observatory media fulfils this function).

Since its inception as a custom game modification in Warcraft III, Dota has grown to be immensely popular as both a played game and an observed spectacle (with reportedly over 2 million peak concurrent viewers at The International 2014 LAN tournament. [McWhertor 2014]). As such, Dota 2 is a considerably rich site for fieldwork into the transtextual nature of digital games.

Research significance

The contributions of this study are both theoretical and empirical. It represents a novel foray into eSports and crossmedia practice, identifying associations between observatory media and play, while also presenting approaches for the compositional analysis of games.

The idea that digital games are shaped by objects or texts external to the immediate gamespace has been part of the games criticism landscape for quite some time. Early works on transmedia intertextuality suggest games maintain strong, representational links with other media. Kinder's (1991) work postulates the videogame movie genre is indicative of transmedia interface. Game developers have since (more directly) encouraged a consideration of the assemblage of texts and objects through particular sequences and mechanics. Games such as Konami's Metal Gear Solid (1998) have been lauded by critics (Galloway 2006) for the inventive ways in which players are engaged through non-traditional, material elements.

The current study builds on these ideas, emphasising the play implications of the non-gamic, textual object. I make the contention that Dota's transtextual interface with spectator media is fundamental in understanding the game itself. This idea has been discussed, within the field of eSports, in brief by Taylor (2012). She posits that "through watching recorded sessions of pro matches they [amateurs] can analyse…moves and tactics" (2012, 236). Further, she contends that the spectatorship of professional play" helps build up future possible agency and lends itself to average gamers internally reconfiguring their own models of action" (2012, 237). Through spectator media, Taylor speculates that amateurs have the potential to become privy to a once sealed reliquary of rich strategic arcana, allowing them to compete in the amateur arena with aplomb. I aim to explore this interaction between games and texts in further detail. As both professional eSports and the amateur play of competitive

games continue to grow, it is important to establish and refine conceptual and practical frameworks for thinking about the textually networked nature of competitive games.

The significance of this study's outcomes are enhanced through a high degree of external validity, useful in understanding both the competitive gaming landscape as well as other eSports fixtures such as League of Legends and Counter Strike: Global Offensive (both of which retain high viewership on Twitch.tv (Twitchapps 2015).

The literature to date suggests that the maturation of game studies as a discipline has shifted away from essentialist conceptualisations of games. Like Galloway's reading of Metal Gear Solid, Kinder's inquiry into the intertextuality of the movie game genre, or more recent forays into eSport, the current study views games as situated symbiotically amongst other media– reinforcing the idea that videogames are not "just games" (Swalwell & Wilson 2008, 2), signaling a shift from the fallacious notion of an immediate and diegetic play space.

A novel aspect of the current study is its divergence from the previous approaches to thinking about games as networks of texts and objects. Despite being focused on texts and objects, this present work places substantial emphasis on form, concerned with the analysis of the transtextual game form and its implications for gameplay. While many now consider ludological approaches to game criticism arcane and reductive, problematised by an obsession with the purity of the videogame form (Keogh 2014), the present study employs a framework which draws on some of the key tenets of ludology, representing a new kind of compositional analysis. Player interface with mechanics, and the way spectator media influences this interface, is the primary focus. Additionally, the texts surrounding Dota 2 are positioned as practically requisite tools, embedded so deeply within the culture of play that they function almost as a game mechanic. Through quantitative inquiry, this work offers novel

insight into the contemporary (competitive) game form, wherein paratexts are ostensibly a core component.

LITERATURE

Literature Amateurs and professionals

Much of this study is based on the interface between amateur and professional players, and as such it is important to precisely define these terms. In Suits' (1978) The Grasshopper, amateur and professional players are positioned as similar in their adherence to the game rule (in what he terms the 'lusory attitude'). Where professional players diverge from amateurs is in the 'extralusory' nature of their play. Within eSports, significant, often monetary goals are provided, which exist outside of the gamespace. Suits argues that professionals often 'use' games (as a means to an extralusory end) rather than situate them as objects of play (1978, 146). Amateur players are positioned as motivated by lusory, ingame goals. While the stakes of play are considerably higher for professionals (and the skill levels of the two groups variegated), amateur players should not be considered 'uncompetitive' (I speculate that many amateur players are employing the playstyles of professionals in order to compete within their own level of play).

Theoretically situating observatory practice

Despite being a defining characteristic of the current milieu of games, the interface between texts, objects and the play of digital games is a path of inquiry that is yet to be fully explored in game studies. As such, one of the challenges in this study was locating theoretical frameworks to situate this interface. Previous work in this area has invoked actor-network theory as the framework for examining the unboundedness of digital games, and exploring the association between games and their surrounding objects. Taylor (2009) poses the argument that play at LAN gaming events is refracted through the lens of the material. She

suggests play is influenced by objects (both corporeal and incorporeal) outside of the immediate gamespace. These range from the game system to the chairs on which the players sit (Taylor 2009). Taylor describes this networked space of digital and physical peripherals as an assemblage, a "complex matrix of actors" (2009, 6).

While examination of the physicality of play and spectator practices is beyond the scope of the present study, empirical work around materiality provides the conceptual groundwork for thinking about the intertextual, transmedia assemblage that is contemporary competitive gaming.

Looking beyond actor network theory and the physical aspects of play, to studies of literature and semiotics, I draw conceptual parallels between spectated gameplay as text and Genette's notion of transtextuality. Specifically, drawing on Genette's subtypes of transtextuality (1982), the spectatorship of digital games can be located at the crossroads of paratextuality and intertextuality.

Characterised as "a co-presence between two or more texts", Genette's formulation of intertextuality refers to "the literal presence of one text within another" (1982, 8). He provides the examples of quotation, "the explicit summoning up of a text that is both presented and distanced by quotation marks, is the most obvious example of this type of function" (1997, xviii). Other studies of intertextuality in literature make similar points. Worton and Still argue that intertextuality "cannot exist as a hermetic or self-sufficient whole, and so does not function as a closed system…" (1991, 1). Similarly, writing on intertextuality in print media, Foucault notes that "the frontiers of a book are never clear-cut: beyond the title, the first lines and the last full stop, beyond its internal configuration and its autonomous form, it is caught up in a system of references to other books, other texts, other sentences: it is a node within a network…The book is not simply the object that one holds in one's hands…Its unity is variable and relative…" (1974, 23).

These ideas are consistent with the central thesis of this paper; games such as Dota 2 are not confined to the audiovisual plane that is the game space: they are presented and perceived as part of a larger structure. The networked system of strategies, tactics, spectator texts and platforms, and game systems are evidence of this very open and linked ecology of competitive gaming. While the primary text, in this case the game, is necessary in the production of additional texts, the structure of the primary text can too be influenced by surrounding texts.

The idea that objects and practices are networked, and functional based on this relationship, predicates a discussion of paratextuality. Genette conceptualises paratextuality as the relation between a text and its paratext (textual objects surrounding the primary body of the text). The key distinction between paratextuality and intertextualiy lies in the fact that paratext, while outside the space of the text proper, functions as a rich node of textually didactic meaning. Paratexts exist to further shape and enhance our understanding of the text, framing and mediating our perception (1997, xviii). There is an inherent instructive practicality to paratexts. Essentially, paratextual objects are not only informed by a primary text, but also inform the ways in which texts are read or engaged.

In developing his paratextual framework, Genette proposes two subtypes of paratext, the epitext and peritext; liminal devices which describe paratexts within and outside of the main text respectively (1997). In this study, a discussion of paratext will be synonymous with *epitext* (this is not without precedent. Consalvo's (2007) work employs a similar approach).

As paratextuality is traditionally located in print media criticism, particular aspects of Genette's original formulation fall short in adequately plotting the interface between gameplay and observatory media. Namely, in his conceptualisation of epitexts, Genette argues that an object cannot be considered paratext "unless the author or one of his associates accepts responsibility for it" (1997, 9). While in Dota 2's case, Valve does, in some

instances, endorse official tournament streams (via Twitch), these do not account for the array of other didactic texts that inform play (often, tournament streams are also broadcast by third party commentary studios). Because Genette's conceptualisations of paratextuality and intertextuality do not translate directly to this research, this paper will consolidate the ideas of intertextuality and paratextuality. This conceptual augmentation is consistent with the approach adopted in previous studies of paratext. For example, Consalvo's work on paratext (and the paratextual games industry) uses the broad term of intertextuality to encompass epitexts and intertextuality (2007). In this way, Consalvo is able to explore an array of paratextual material, including writing, digital artwork, visual and audio design and new game design.

Along similar lines, McCracken (2013) encountered similar problems in directly mapping Genette's formulations onto her work examining paratexts in electronic literature. She notes that while Genette's concepts are effective tools for understanding digital literature, they require expansion to remain relevant. She argues that "New paratexts sometimes move beyond Genette's precise formulations but continue to function in the spirit of his analysis"(McCracken 2013, 106), suggesting that Genette's paratextual framework should be used as a guideline rather than a strict analytical lens.

While there is some consensus that the concept of paratextuality would benefit from expansion, intertextuality and paratextuality are nonetheless robust and malleable interdisciplinary frameworks for thinking about systems of texts. According to Consalvo, paratextuality functions as a useful theoretical framework for thinking about the networked system of "media products– 'communication and artifacts– emerging from game cultures, which frame the consumption of digital games. "(Consalvo 2007, 8).

Considering the body of work on intertextuality and paratextuality, I have employed an appropriated concept of

transtextuality, developed to frame digital games. This framework will be used in demonstrating the networked assemblage of texts which have come to constitute the contemporary experience of competitive play.

In addition to identifying, and providing conceptual frameworks for the analysis of the complex multi-textual ecology of competitive games, this paper demonstrates that paratexts can profoundly influence ways in which players interact with game mechanics– existing as practical textual objects situated within the threshold of the primary text. In doing so, this work draws on game studies conceptualisations of paratextuality. Consalvo contends that gaming paratexts (walkthroughs, for instance) are central in the play of games. Paratexts "serve a specific role in gaming culture…they instruct a player in how to play, what to play and what is cool (and not) in the game world" (2007, 22). Similarly, Apperley (2010) argues that "the relationship between digital games and their paratexts is an example of how the convergent audience uses other media, especially the internet, to collaborate on, conduct and coordinate research" on play practice (2010, 125).

In providing a clear conceptual basis for positioning the textual assemblage that makes up competitive gaming (and identifying the influence on play exerted by paratexts) this paper is enabled to explore relationships between transtextuality, groups of players and play itself.

Tactical and strategic play

Overview

In The Practice of Everyday Life (1984), de Certeau established a model of strategies and tactics, an important paradigm for thinking about the governance of culture. De Certeau presents the concepts of strategy and tactics as opposing ideas. Strategies, according to de Certeau, are set by the powerful and serve to manipulate power relationships (1984, 87). De Certeau explains

the concept of strategy using the example of the ordered city space. A city, and the routes available to individuals within it, are a strategy determined by a controlling body (de Certeau 1984). Strategies are fixed and rigid by nature. In contrast to strategies, tactics are concerned with the non-powerful; fluid adaptations to a strategically determined environment. Working with the example of a planned city space as strategy, de Certeau explains tactics as the individual's ability to create their own routes through the strategically ordered city space.

This paper draws on de Certeau's model of strategies and tactics to explain the movement of playstyles amongst groups, diffused through paratexts. Additionally, de Certeau's formulations of spatiality (as well as later conceptualisations of tactical and strategic media) will be used to position Dota's game design. A case is presented suggesting that crossmedia reading praxis is fundamental in understanding open-ended, player driven games like Dota.

The strategies and tactics of competitive games: Why competitive games demand transtextuality

Since its conception, de Certeau's model of strategies and tactics has been reconfigured by scholars (e.g., Manovich 2009) to function as a theoretical framework for contemporary media studies. Specifically, Manovich relates de Certeau's ideas directly to Web 2.0 media (2009). This idea of tactical and strategic media is useful in thinking about where Valve's game design is situated, and how this has enabled a transtextual interface. Manovich argues that the advent of Web 2.0 and the proliferation of related technologies represents a dramatic change in the relationship between strategies and tactics. He notes that the ability for users to configure content has radically shifted de Certeau's original formulation of tactics and strategy; "today strategies used by social media companies often look more like tactics…while tactics look like strategies…" (Manovich 2009, 218). The producer is now invested in the user exploring and manipulating

media. In the case of Dota 2, high level players produce strategies which are then disseminated via various channels and reconfigured as tactics by amateur players. In the instance of Dota 2, and other player-driven, online multiplayer games, developers create a game space which functions as a rough schematic for play, their design strategies informing the game at a broader, rule based level. While aspects of game design and maintenance, such as mechanical balance could be considered strategically postured, the design strategy in Dota 2 presumes a lesser degree of authorial control than that of more directed games. Valve's approach is, essentially, update and balance the game through major content patches.

A further way in which Dota's design strategy and its consequent transtextuality can be situated within de Certeau's work is with respect to the distinction between the navigation of spatial environments and the distinction between places and spaces (de Certeau, 1984, 117). A place, de Certeau purports, is "an instantaneous configuration of positions" (1984, 117), an environment that exists in a vacuum; theoretical and abstract. Conversely, space "exists when one takes into consideration vectors of direction, velocities, and time variables" – in essence, a "space is a practiced place" (1984, 117). De Certeau further clarifies the difference between places and spaces by providing the example of 'street walking'. "The street geometrically defined by urban planning is transformed into a space by walkers" (1984, 117). In this way, game environments are similarly defined by how they are navigated by players.

De Certeau maintains that these spaces are navigated using "maps" and "tours" (1984, 119). A map essentially describes a place ("The girls' room is next to the kitchen" [1984, 119]). By contrast, a tour directly forces its audience into the active navigation of a location. Tours are prescribed to space ("'You turn right and come into the living room'" [1984, 119]). Purportedly, directions are more commonly manifest in the form of tours, which provide the preliminary groundwork for maps. In the case

of player-driven digital games, space is created with the intention that it be mapped and defined by players. Through an interface with game mechanics, purveyors of paratextual media function as both cartographers and tour guides, responsible not only for charting possible ways to approach a game and its mechanics, but also guiding players through the gamespace. These tours (paratexts) are expected to function as strategies, to be reconfigured tactically by their users.

RESEARCH DESIGN

Overview

A quantitative methodological approach will be used to evaluate the interface between gameplay in professional and amateur Dota 2 games and surrounding observatory media. Specifically, quantitative content analysis will be used to conduct a systematic and objective analysis of various data sets. In the present study, data sets consist of published statistics on gameplay at both an amateur and professional level. In undertaking this analysis, I aim to establish trending playstyles in both amateur and professional player groups. Analyses will employ theory-based sampling (data sets explore distinct thematic areas), an approach advocated by Gunter (2012) in his methodological toolkit for quantitative research in media studies (Gunter 2012, 251).

Through an exploration of archived player data, I aim to establish an empirical basis for the proposed conceptual framework of transtextuality in eSports and digital games. Additionally, by describing patterns and trends in media portrayals, I aim to draw inferences about amateur-professional relations regarding the production and consumption of content. The primary variable of interest in this study is playstyle, or the ways in which players interact with the mechanics of the game. As described earlier in this paper, heroes have their own unique mechanical flavour, with vast gameplay differences and affordances, ultimately representing a particular playstyle. For

present purposes, playstyle will be operationalised as hero pickrates.

In documenting the interface between texts, players and gameplay, amateur playstyle trends will be compared to those of professional players. Professional play, due to its broadcast nature, was the most pragmatic way to index paratext. Consequently, professional, tournament gameplay becomes conflated with the idea of paratext (this being said, the idea that amateur play can function as paratextual is also discussed). Playstyle trends between groups are analysed over a given timeframe, observing whether broadcast play provokes changes in amateur play.

Data sources and sampling

The primary units of analysis will be logs of play, at both a professional and amateur level. Web based archival tools, datDota, Dotamax and Dotabuff were selected to facilitate a discussion of links between games and their surrounding texts. These archival tools harvest and aggregate data on both professional and amateur Dota games. Aside from being a useful research tool, these data platforms are also commonly utilised by players. Based on previously established, more relevant conceptualisations of paratext, these platforms can be considered paratextual. As paratexts, they represent a shared space of researchers and players. The research potential of paratextual material thus has interesting implications for exploring the idea of the player-researcher in game studies (reminiscent of Aarseth's work [2003], and much of contemporary games ethnography).

In terms of functionality as research tools, Dotabuff, datDota and Dotamax are a valuable resource for evaluating playstyles. Games, and the myriad player inputs which occur (item and skill build choices, for example) are parsed, and raw data consolidated and presented diagrammatically and proportionally.

In the present study, data was collected from the game's patch

6.81b iteration (spanning roughly the period June-August 2014). This period for data collection was specifically chosen with the aim of performing theory based sampling. The 6.81b landscape was a dense play period characterised by three major international LAN tournaments (ESL One Frankfurt, The Summit and The international 2014) as well as an array of smaller, online-hosted tournaments. It was expected that this play period would yield rich data on the interface between spectator practices and play, fitting within the conceptual framework of transtextuality. It should also be noted that these instances of professional, tournament play were broadcast publicly on Twitch.tv (as well as via the Dota game client).

Because playstyles are often subject to change following major content patches in which mechanics are overhauled and refined, it was important that data were sourced from the same iteration of game content (that is, patch 6.81b). In so doing, there could be reasonable confidence that archived gameplay was the product of a transtextual interaction rather than the product of a particular game design strategy (game tuning in the form of a patch). Within the given timeframe of patch 6.81b, maximum concurrent players online in Dota 2 peaked at 900,000 (Avenar 2014). However, it is acknowledged that professional players invariably constitute a smaller margin of the player base than amateurs. Although both professional and amateur players will be sampled, it was expected that amateur players would contribute the bulk of the data.

Previous work

The quantitative content analysis of gameplay logs has been used in prior fieldwork studies of digital games. For example, in the current author's previous work (Egliston 2013), log analysis was an integral part of the methodology in the exploration of game mechanics in Blizzard's World of Warcraft (2004). This study suggested that log analysis is a useful tool for understanding player engagement with game mechanics. Analysis of gameplay

logs will be used to investigate playstyle trend associations between amateur and broadcast professional play in the present study.

Data source limitations

The major limitation in working with the amateur data sets provided by Dotabuff and Dotamax lies in the opt-in nature of the data collection. The playerbase of Dota 2 is vast, and while these platforms only require one player to be opted in to gather data (players who have not opted in are represented as anonymous) they provide an incomplete representation of the playerbase. DatDota's collation of professional player data is also not without issue. While providing much more than Dotabuff and Dotamax in the way of statistical utility, the platform suffers from providing incomplete data sets (due to an inability to store data over long periods of time).

The present study is expected to yield quantitative data that will allow for the identification of associations between transtextuality and gameplay. While identifying trends between professional texts and amateur play is fundamental in highlighting a transtextual association, further research could productively apply *qualitative* approaches) to supplement quantitative data, and provide a more thorough explanation. How players use and reconfigure strategies could be explored thoroughly. Furthermore, qualitative approaches could bring to light issues of 'third hand' information dissemination. Player knowledge, gleaned from paratexts, could potentially be passed on to players in-game, allowing us model player knowledge (diffused in game) as paratextual, positioning the player as part of the transtextual assemblage.

A limitation related to the disparate sizes of the professional and amateur data sets is the level of detail available. Although the professional data sets were significantly larger, they provided less detail. This hindered an exploration of paratextual

reflexivity, namely my attempt to trace genealogies of playstyles amongst professional and amateur players.

RESULTS AND DISCUSSION

Results are first presented for Data sets I & II, followed by a discussion of the phenomenological implications of strategic play. Next, results are presented for Data set III along with a discussion of strategic reflexivity.

Data sets I & II: Transtextuality as strategically grounded interface, the labour of play and transtextual play

Results

To locate the relationship between spectator texts and gameplay, I examined hero pick rates of both amateur and professional groups of players during the period June-July 2014 (which, as noted previously, covered numerous major international tournaments). The first data set traces increases in pickrates of four heroes, popular during the 6.81b patch. Figure I suggests that the playstyles of both groups are closely linked. Considering the dense tournament landscape of June-July 2014 (which was, as noted previously, widely spectated), it would be within reason to speculate that amateur players adopted the strategies exhibited by professionals during these events. The patterns of play displayed in Figure I demonstrate remarkable similarities in strategies across both professional and amateur players. Heroes that are more widely used by professionals appear similarly popular amongst amateurs. Heroes Skywrath Mage and Razor were most favoured by both amateurs and professionals alike. Heroes Faceless Void and Shadow Shaman, while popular within the broader context of the game (13.58% and 9.20% amateur pickrates respectively), were the least picked out of this data set in both groups of players. However, while the data shown in Figure I indicates a striking association between amateur picks and broadcast professional play, the claim that picking trends

are mirrored due to transtextual networks cannot be confirmed without further qualitative follow-up.

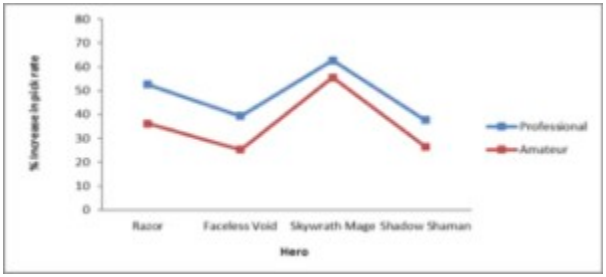

Figure I: Increases in professional and amateur hero pick rates, June-July 2014

Figure II presents pickrates of popular 'pubstomp' heroes in both amateur and professional contexts. Pubstomp heroes are those which are highly effective within public, or amateur, games. They often possess the ability to take advantage of the uncoordinated nature of amateur play, but are easily countered by a seasoned team of players. All heroes in this data set maintained a patch-wide amateur win rate of over 50% (placing within the top 30% of hero winrates).

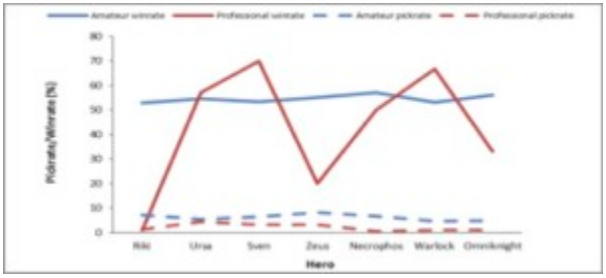

Figure II: Unpopular hero picks (with corresponding win rates) for professionals and amateurs, June-August 2014.

Figure II indicates that despite their efficacy in winning amateur games, many of these heroes proved ineffectual in winning at a professional level (or are simply played so little that their win rate

is not truly representative). Where it is logical (from a tactical standpoint) for professional players to abstain from drafting these types of heroes, the fact that they are relatively unplayed in amateur games, where these heroes are most suited, is telling.

While the first data set indicates a strong association between the gameplay of professionals in periods abundant with broadcast, tournament-level play, the second data set suggests that inverse associations also hold true. Heroes which have proven highly effective in amateur play in terms of win rate, are seemingly unpopular picks. While they do not mirror the professional pickrate, as was the case in the first data set, both amateur and hero pickrates for data set 2 are similarly low. This suggests that gameplay can be profoundly influenced not only by the representation of particular strategies, but also through the omission of playstyles from professional play and broadcast.

Discussion

Both data sets I & II present strong cases for the consideration of competitive games as transtextual. Additionally, they enable us to think about phenomenologies of the transtextual gamespace. Specifically, through an adherence to professional strategies, both data set I & II warrant a discussion of the prescriptive nature of paratexts and the functionalisation of amateur play through transtextual systems. Additionally, they position us to think about new forms of transtextual play. Through broadcast eSports, the professionalisation of play has seemingly been diffused to amateur players. As indicated through a reluctance to pick 'pubstomp' heroes, professional strategies are grounded in reliability and efficiency. While not directly referring to competitive gaming, Apperley and Jayemane's work aptly describes professional gaming (2012). They argue that the substantial demands that many contemporary games make on "attentiveness and cognition" are ultimately "more reminiscent of work than traditional play pursuits" (Apperley & Jayemane 2012, 12). Aside from the mechanical stresses of professional

play, the growingly monetised state of professional gaming strongly represents an intersection of gameplay and labour.

By adopting the strategies of professionals, however, amateurs are too co-opted into this gameplaying labour; strategies developed within the context of multimillion dollar tournaments (such as The International 2014) are deployed in completely new, (relatively) low-stakes contexts (see Figure I. Many of these heroes became popular amongst professionals and amateurs alike during The International 2014). Through the transtextual interface between digital games and observatory media, the ruthless efficiency and winning attitude associated with professional gaming is translated to amateur play. Despite the absence of extralusory goals, amateur players are functionalising their play in a way which mirrors the professional scene.

This functionalisation of amateur play (through an adherence to professional strategies) can be mapped almost directly to Adorno's conceptualisations of 'free time'. Adorno argues that practices of free time are "nothing more than a shadowy continuation of labour…" (1991, 194). Using the example of camping, Adorno signals a shift toward functionality within recreational activities. Camping, according to Adorno was characteristic of youth movements, protesting the "tedium and convention of bourgeois life" (1991, 190). This yearning for freedom has become "functionalised, extended and reproduced" (Adorno 1991, 190).

The amateur play of digital games, much like Adorno's conceptualisation of free time, have traditionally been seen to operate as a mode of expressive freedom (and sometimes escapism– see Caillois 1961, Kuchlich 2002. While amateur play can still be competitive, it is a relatively low-stakes pastime). However, through prescriptive paratexts and an adherence to set strategies, the ability to act autonomously is, in some instances, diminished. This begs the question, can this kind of amateur-yet-strategically-directed play be considered part of one's 'free time'? Adorno suggests that behaviour in one's own free time

is not always autonomous, and is only truly free time when determined by individuals who are free themselves. Not only has the transtextual nature of competitive gaming made boundaries between media permeable, but also boundaries of amateur and professional, and leisure and labour.

Data set II highlights how transtextuality in games can prove to be problematic insofar that they function as prescriptive texts. Where previous research into paratextuality has noted that that engagement with paratextual material enriches the game-based learning experience, often allowing for players to engage explicitly with ideas (Gee 2009, 11), this data indicates that paratexts have the potential for misuse, and have ultimately proven counterintuitive in their purpose (that is, the provision of playstyles and ideas which may aid in winning). While Consalvo noted that paratexts can "shape players' expectations of what it means to play a game properly or improperly" (Consalvo 2007, 183), the spectator media surrounding Dota 2 seemingly has the potential to render play a derivative practice.

This then begs the question, if transtextual systems encourage an adherence to a set of texts do they diminish 'gameness' and the play impulse? Much of this impulse is ostensibly rooted in exploration. Established in early works on play (Caillois 1961) and reiterated throughout digital game studies, an essential part of games is the ability for the player to be creative within the framework provided by the game rules (Kuchlich 2002). Through tactical reconfiguration of strategies, transtextual systems force a reformulation of what constitutes both games and play. In recognising associations between gameplay and paratexts, we are enabled to add to the spectrum of practices that constitute play. Amateur players seemingly navigate both the gamespace and the broader landscape of paratexts, cultivating approaches to ingame scenarios. The transtextual play space is far from a sterile one, existing instead as fertile and pliant ground, germinating configurative play practice.

Taken together, both data sets I and II suggest that professional

players, through various broadcast mechanisms, set standards for play. Considering the tactical reflection of many of these play standards in amateur games, it is possible to model texts depicting professional play as strategic media. Strategies are seemingly constructed for use in professional play, disseminated as texts through streaming platforms, read by amateurs and tactically reconfigured for use in amateur games.

Data set III: Transtextuality and strategic reflexivity

Results

The third data set was taken from the LAN finals of The Summit 1, 2014, and the days immediately preceding and following. This data was particularly interesting in highlighting immediate associations between play and spectatorship, as well as in situating the dissemination of playstyles as reflexive practice. During the LAN finals of this tournament, player Arteezy made the unconventional choice (within the professional game) to use the Phantom Assassin hero. In patch 6.81b, this hero was typically unpopular amongst professional players (Dotateam 2014) as her playstyle unpredictable and inconsistent. This hero was used to great effect during The Summit's LAN final games, ultimately yielding a win Arteezy's team.

Despite questionable efficacy in the professional arena, amateur players had already been making use of this hero (10.78% patch pickrate). Where professional players expressed reluctance in drafting this hero due to unpredictability, amateur players embraced her (compare the low stakes nature of public games to professional play). Interestingly, despite already being a relatively popular amateur pick, the days following the LAN indicated that amateur players had increasingly favoured Phantom Assassin as a pick. Following the LAN finals there was an immediately noticeable increase in amateur pickrates of the Phantom Assassin hero (note that while the amateur pickrate increase may appear slight, it is derived from a much larger

player pool than the professional pickrates. Within the month of April 2015, Valve's Dota 2 interface reports that the game has been played by over 10 million unique players (Valve 2015). As previously noted, amateurs make up the bulk of this playerbase, and consequently even an increase as slight as that depicted in Figure III is significant.

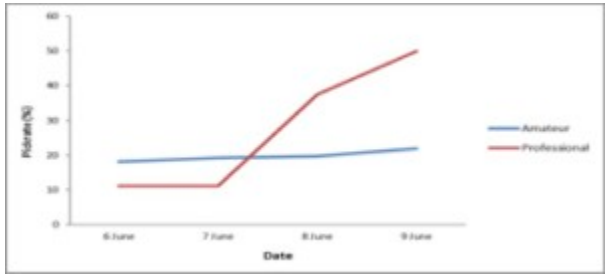

Figure III: Professional and amateur Phantom Assassin hero picks, June 6-9 2014

Discussion

This data set is significant not only in further establishing associations between spectator texts and playstyles, but also in highlighting that the dissemination of playstyles is reflexive. The relative popularity of the hero in amateur games prior to its professional use suggest that professionals may have drawn from amateur games, reconfiguring playstyles for high level play. Whether this was facilitated by observatory paratext (or through other paratexts, such as Dotabuff) is unknown. Interestingly, despite popularity before professional use, amateur pickrates increased following The Summit games. The playstyle is seemingly filtered back to amateurs.

This reflexivity suggests that the game is navigated and mapped dually by amateurs and professionals. The transtextual nature of Dota seemingly has potential to foster collaborative dialogues between players of vastly varied game proficiency (and

also suggests that amateur players are not docile content consumers).

This dialogue represents a shift from the top-down integration of information seen in Figures I and II. This can be modeled as a deviation of de Certeau's framework of cultural governance (1984). While the broadcast of high-end play has indicated a top-down effect with regard to the strategies of top players and teams, this particular case study suggests that playstyles can be fluidly adopted by players of any skill or competitive level. Thus, by taking advantage of (gameplay) opportunities, tactical players can reconfigure the strategies of the powerful. By actively forging practical approaches for play, certain amateurs are far more than pliable sycophants. In summary, gameplay tactics and playstyles are highly derivative but simultaneously reflexive. Broadcast gameplay functions as an important paratext, and has the capacity to directly influence the central character of play, even within professional domains.

CONCLUSION

The aim of the present study was to provide conceptual frameworks for the analysis of transmedia games practice, as well as establish associations between gameplay and observatory paratexts. Results indicated strong similarities between the playstyles of amateur and professional Dota 2 players during dense tournament play periods. While further qualitative follow up is needed in confirming results, this study has provided evidence that competitive games function as vast cultural artifacts, mapped by players and texts. Configurative and collaborative, the transtextuality belying eSports and competitive gaming has come to represent games as transgressive, crossmedia spaces.

Understanding competitive games and eSports as transtextual has forced reconsideration of primordial, essentialist perceptions of the videogame form. A game is more than the sum of its rules, mechanics, or audiovisual design. Consistent with

arguments made in previous studies (Taylor 2009, Kinder 1991), I suggest that we should move toward the consideration of digital games as transmedia objects. Within the scope of competitive gaming, I have argued that observatory media are effectively located within the purview of the game proper; their navigation by players representing a burgeoning form of play.

Furthermore, I have argued that thresholds between labour and leisure in play have effectively been blurred (as well as the distinction between amateur and professional play, with the strategies of professionals invoked in amateur games following their use on the eSports-field). Pertinent to practitioners and researchers of games alike, transtextual systems in competitive games and eSports have profoundly altered the experience of play and dismantled traditional formal and phenomenological understandings of games.

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AUTHENTIC PORTRAYALS OF GAME CULTURE? A CONTENT ANALYSIS OF THE CROWD-FUNDED YOUTUBE DOCUMENTARY THE SMASH BROTHERS

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Abstract

Using the case example of the crowd-funded YouTube documentary *The Smash Brothers*, this study explores how digital game culture is currently represented in social media. The units for a qualitative content analysis, as described by Krippendorf (2004), are defined through thematic distinction. The results refer to four major categories that represent digital game culture as a whole: game, gamer, gameplay and game community. The interaction between gamer and game (gameplay) is the most stressed element of game culture. Gameplay was depicted to be of varying nature and in opposition, considered both a sport and an art. The portrayal of the culture in our sample stresses both negative and positive aspects, remarking on features that increase the popularity of the game.

Introduction

Digital game cultures come in a variety of forms and sizes; one vivid example is the *Super Smash Brothers Melee* (*SSBM*) culture. This game culture surrounds the competitive play of a Nintendo

party game and has been an active community, ever since the inception of the *SSBM* title in 2001. Gamers have taken a seemingly casual party game and turned it into a highly competitive fighting game. They continue to play the game today; years after its initial release, forgoing other more graphically advanced games and even its sequels.

Until recently, this game culture enjoyed little mass media attention; the surge in popularity occurred after a crowd-funded documentary was released in 2012. Since the release of *The Smash Brothers* series on YouTube, the community has enjoyed massive attention from gamers, mainstream media and even Nintendo (Nintendo, 2014). While the company has been known to shun competitive gaming and its communities (Beauchamp, 2013), after the release of the documentary, Nintendo thanked the competitive *Smash Brothers* community (Business Wire, 2014) and has even begun catering to (and involving) the community in several promotional events for the game's sequel (ibid).

While game companies are discovering the value of documentaries, independently produced documentaries represent an important part of the game culture, with several digital communities having their own. The creation, as well as the free distribution, of gamer documentaries characterizes them as vital social media products. Analysing social media communication of game cultures is essential, since it can provide insight on which elements of game culture participants feel most passionate about. Not only is this important for game development and understanding gaming communities, but it also highlights how media products can achieve cultural significance, becoming interwoven in our daily lives. The documentary medium can provide a mixture of aspects such as information, point of view, aesthetics and entertainment (Schwab, 2010). *The Smash Brothers* could be perceived as an expository documentary, addressing the viewer directly and proposing a perspective or recounting history (Nichols 2001, p. 105).

Literature Overview: Game cultures in press and academia

In both academia and mainstream press, digital game culture is portrayed and framed very heterogeneously, often defined as something separate from popular culture (Shaw, 2010, p. 417). Game cultures can be understood as subcultures (people sharing the same values, interests and practices) that form a separate group within a larger population (Mäyrä, 2008, p. 13). In addition to having a shared space, these subcultures also share the same language and rituals, while valuing similar artefacts and memorabilia (ibid).

Following the contextual framework of Du Gay et al. (1995), Hepp argues that the articulation of meaning in media cultures can be understood as a complex circuit, that consists of different, strongly intertwined domains: production, representation, appropriation, identification and regulation (2011, 72). Building on this, Mitgutsch et al. (2013) suggest this framework for the study of digital games and their cultures. For our case study we are mostly concerned with the context of representation, because media representations contribute heavily to "cultural meaning production" in current media ecology (Wimmer, 2012, p. 532).

Our analysis evaluates how a digital game culture is represented in social media, since a growing number of studies show YouTube as an appropriate platform for engagement, community formation (Burgess/Green, 2009, p. 53) and the mediation of identities (Light et al., 2012, p. 352). YouTube can provide a greater sense of 'authenticity' than traditional broadcasting, through providing "transparent amateurishness" and "conversational responses" (Tolson, 2010, p. 286). In addition to increasing popular interest (ibid, 279), this authenticity might assist in providing a more detailed depiction of the *SSBM* culture.

Digital games have a history of being depicted negatively in popular discourse: usually as something troublesome or devoid of value (Consalvo, 2003, p. 320). McKernan (2010) analyses the portrayal of digital games in The New York Times and finds

that there are several phases of representation, improving with time, as digital games become a larger part of popular culture. Sørensen (2013) states that multiple identities are given to digital games in German press (p. 976), from portraying them as political, technical or civil objects, to depicting them as sport, through stressing team play and strategy elements (p. 971). Positive media portrayals usually praise the socialization, learning possibilities and professional sport like aspects of games (Wimmer, 2012, p. 537).

Gamers were also previously represented negatively in mainstream media (Consalvo, 2003, p.312). Simons and Newman (2003, 2) conclude that by positioning gameplay as a solitary and last resort activity, gamers appear as reclusive and socially inept. These assumptions (in public discourse and mainstream media) lead to the gamer stereotype: where all gamers are labelled as male, socially incompetent, hard-core 'nerds'. While gamers are the first to parody this representation (ibid, p. 3), certain fan activities, or works of *fan scholarship* (ibid), strengthen the stereotype to some degree. However, gamers do not always fit the physical stereotype. Instead of malnourished or obese and playing away in their mother's dimly lit basement, Ferrari (2013, p. 7) states that, "some of the South Korean StarCraft pros could have been heartthrob pop stars in another life". Additionally combating the male only label, Jakobsson (2007) notes that during his study of a console club playing *SSBM*, the gender-diverse environment surprised him. Similar to how gamers are always portrayed as male, digital gaming communities are also thought to be mostly male-dominated spaces, "the sight of a female gamer remains a remarkable spectacle within a commercial and cultural space still dominated by male designers and male consumers" (Dovey & Kennedy, 2006, p. 29).

In his study of the World Cyber Games (WCG) in Cologne, Wimmer (2012) finds that even though the media occasionally portrays gamers stereotypically, they are beginning to show

them as athletes and celebrities. This was done through how the public relations personnel handled negative media attention, eliminating "the cliché that computer gamers represent a homogenous group of male teenagers with behavioural disorders" (ibid, p. 534). In another study of the WCG, Hutchins (2008) pinpoints clear parallels between traditional sport and eSport, strengthening the image of gamers as athletes (p. 857). Jakobsson (2007, p. 390) finds that those playing *SSBM* "personify the idea of gaming as sports. They talk about their home clubs as sports clubs, they wear t-shirts with the club logos and their game handle printed on them." This comparison is only made stronger through eSport spectatorship. Kaytoue et al. (2001, p. 1181) find that some gamers prefer watching professionals rather than play themselves, much like many traditional sport fans.

Gamers who play *SSBM* can be considered fighting gamers; they typically reject the eSport label (however *SSBM* players have now embraced the label). This is because fight gamers' communities existed long before the eSport phenomena (Ferrari, 2013, p. 3) or it could possibly be "a distaste for the outward aesthetic standards of gentlemanly sport" (ibid). Smashers, like other fight gamers, stress "style and swagger," decorating their controllers and exuding "body English," or unconscious movements made in order to influence the progress of an object during gameplay (ibid, p. 7).

As seen from their use of online tools, digital gaming communities tend to be very media proficient. Church (2013, p. 100) states that gamers practice media blackouts to prevent spoilers, while Jakobsson (2007) was provided with a "collective treasure" of video and image material, recorded by the club during his ethnography (2007, p. 386). One activity that stresses the importance of digital media, especially for the *SSBM* community, is the broadcasting and spectating of competitive gameplay. Gameplay spectatorship is on the rise (Kaytoue et al., 2011, p. 1181f.) and one stream broadcasting the EVO 2013

finals for *SSBM* managed to accumulate 130 thousand simultaneous viewers, setting the record for the most watched fighting game (Polygon 2013).

Method: Design and sample

The method used in this study is a qualitative content analysis as described by Krippendorff (2004), which will be applied to all episodes of *The Smash Brothers* documentary. The advantage of this method is that it allows for scholars to contextualize content through the use of existing literature and articulate new meaning to content based on its assumed context (Krippendorff, 2004, p. 88). Moreover, by providing supporting quotations from the content itself and triangulations of data, a qualitative content analysis provides results that are noteworthy and "compelling for readers who are interested in the contexts of the analysed texts" (ibid., p. 88). Unlike quantitative content analysis, this method is less systematic and provides less validity (ibid., p. 88).

The units of analysis are defined through thematic distinction. When a specific segment in the documentary is coded, it is done so because it fits a theme proposed by the researchers. Unlike categorical or propositional distinctions for units, thematic units prove to be beneficial for academics interested in the study of representation (Krippendorff, 2004, p. 108). This is because thematic units provide extremely rich narratives, in addition to being very closely linked to the viewer's understanding of the text (ibid). In hopes of increasing the reliability and replication of this study, the thematic units were developed by means of a codebook. The codes are attributed to certain phenomena and refer to four major categories, which – as highlighted by previous research (Mäyra, 2008; Wimmer, 2008) -represent digital game culture as a whole. Under the categories of gamer, game, gameplay and community are several sub-codes describing a distinct phenomenon.

Individually, these sub-codes have been generated in one of two ways. Deductive codes are based on themes that were

already detected by research, such as the comparison of eSport to traditional sport (Witkowski, 2009). During the analysis, when an individual states something comparing gameplay to sport, or when imagery assists in making a similar association (actions shots of controllers mixed with gameplay footage), they will be coded within the same sub-code. It is important to note that the coding of segments sometimes overlapped, with certain segments being coded as representations of more than one major category (gamer and gameplay or community and gamer). Examples of this are segments where gameplay is represented as a sport, which also portray gamers as athletes. Inductive codes, on the other hand, are based on observations of the content. An example inductive code is the influence an individual has on the identity of a game. While the game's influence on an individual's identity is considered a deductive code (Jakobsson, 2007; Toivonen et. al, 2011) the counter-code is inductive as it is based on the researchers' observations.

The Smash Brothers is a crowd-funded documentary project dealing with the game's community. It is a nine-part series, with each episode focusing on a *SSBM* professional player, and their rise to the top of the competitive community. The series is available for free on YouTube, with each episode averaging around 100,000 views (when the research began in 2013) and with the first episode having the most views (560,000). In total, the documentary provides 257 minutes of content to be coded. This sample was selected because as a YouTube series, the documentary is regarded as a form of social communication. Additionally, due to its length, the series paints a more detailed portrait of a gaming community than other individual documentaries. Finally, this series is one of the few gaming documentaries that is immensely well received, both within and outside of the *SSBM* community (Hernandez, 2013).

Due to the nature of the sample, special attention is given not only to dialogue but also to imagery and sound. So, the sport comparison code addresses discussion surrounding videogame

play as sport, as well as imagery and video footage alluding to the same comparison. Footage that is dedicated to gameplay with accompanying sport-like commentary or (music) is coded accordingly since it is very similar to how traditional sports are presented in broadcast television. Finally, it is important to note that the documentary episodes were coded in their original order, taking in consideration narrative importance.

Findings

The most coded category was gameplay (216 codes), followed by gamers (197), community (165) and game (75). The most commonly overlapping codes are ones comparing gamers to athletes, which overlap with comparing gameplay to sport. Since this study is qualitative, the total number of codes does not affect the results presented below. Each dimension appears to be equally important, and the number of codes serves simply to systematize results. Furthermore, the order of which the thematic units are presented in this paper does not follow quantitative importance.

Representations of game

One common depiction, based on its recurrence within the narrative, is the games influence on individuals and vice versa. The influence the game has on individual identity (Jakobsson, 2007; Toivonen et. al., 2011) is showcased in several ways. Initially, there is a segment dedicated to gamer-tags, where gamers are asked about theirs why they chose them. Gamer-tag creation is a form of identity construction, as put by one gamer,

> "I found a second self in Smash. Having this gamer-tag and this alternate life and this alternate set of friends (…) allowed me to have an identity that was very different. In regular life some people call me the most positive person they've met (…) but in smash I'm arrogant, arrogant and condescending, and I can be aggressive and forceful and it's fun to have this second identity." (Beauchamp, 2011, "No Johns")

Furthermore, *SSBM* is shown to be a significant part of the lives of its gamers. Gamers like Chillindude829 mention that because of *SSBM* they were able to make such great friends, "it's more than a game, it's literally part of my life. Most of my close friends, most of my best friends I've made through Smash (…) it shows their excellent judgment to play this amazing game." (Beauchamp 2011, "Game")

On the other hand, individuals are also shown to have an influence on the identity of the game, which was not identified by any literature surveyed. Throughout the episodes, individuals name pro-gamers, like Ken, Chu Dat and Mango, who used specific characters, paving the way for others by showcasing how they should be used. In one of the episodes focusing on Ken, the "King of Smash," it is explained how he pioneered several techniques with his character, which have become commonplace in todays *SSBM* gameplay.

Mäyrä (2008) argues that a game's identity is defined through its rules. The rules of *SSBM* are certainly one of a kind, and contribute to its image as a unique or distinct object. The documentary features a dedicated portion in the first episode explaining the constituent rules and how they differ from other 2D fighting games. Players go on to differentiate *SSBM* more by mentioning the absence of pre-set combos. A female pro-gamer (Milktea) states, "There's just a fluidity to it that normal 2D fighters don't have." (Beauchamp, 2011, "Show Me Your Moves") This fluidity or sandbox nature of the game is shown to be the main distinguishing factor from other fighting games, making it unique. So while certain academics feel that the constituent rules of a game do not necessarily define it (Jakobssen, 2007; Mäyrä, 2008), *SSBM's* core rules do contribute to its image as a unique game.

While the *SSBM* is depicted as entertaining to play, the way it is featured in the documentary represents it as also entertaining to watch. Every episode contains large segments of original gameplay footage, noting some climatic, historic, or dramatic

match important to the narrative. This footage is presented with either recounts by gamers, or sport-like commentary. However, in most instances, footage is shown without any explanation and with either music or the sounds of the crowd. These frequent segments assist in portraying *SSBM* as an enjoyable game to watch, in addition to play. While only pro-gamers can appreciate the forms of competitive gaming (Ferrari, 2013), these long unexplained segments in the sample depict the game as entertaining (and accessible) to the casual or non-gamer.

Representations of gamers

Being community-funded, the documentary is assumed to depict gamers in a non-stereotypical fashion. However, the analysis proves that while some representations attempt to combat the gamer stereotype, something typical of gamers (Simons et. al, 2003), several depictions also enforce it.

Initially, there are a number of pro-gamers presented in the documentary who are valued not only for their skill, but also for their demeanor and outward appearance. When discussing one pro-gamer (PC Chris), the narrator states, "the new champion found instant fame, not only for his technical skills but for being what few pro-gamers had never been before: cool." (Beauchamp, 2011, "Revolution") Many statements by interviewees also depict another pro-gamer (Mango) as being popular for his carefree and party attitude. When interviewed, Mango states, "I'm pretty sure I've almost died twice (…) I've been arrested almost eight times just cause I'm always talking smack to the cops – never back down, dude." (Beauchamp, 2011, "The Natural") The presentation of some pro-gamers in our sample is similar to Ferarri's (2013) statements about Korean pro-gamers appearing as celebrity heartthrobs.

The stereotype is opposed not only through the presentation of these non-conventional gamers, but also through what is being said by the gamers themselves. Chillindude829 comments that when he began going to tournaments as a high school

student, he was surprised that the people he met were not "basement dwelling nerds" but older and cooler people who did not fit the gamer profile (Beauchamp, 2011, "Show Me Your Moves"). What adds to the stereotype, however, is the portrayal of gamers as mostly male. Throughout all episodes, only four female gamers were presented and just one of the women is interviewed more than once. Milktea, reflects on the absence of female gamers when she mentions the mistreatment she received after first joining the community and being labeled an "attention-whore" (Beauchamp, 2011, "The Natural"). While Jakobsson (2007) found the atmosphere of the Smash console club more accepting, certain statements (and lack of women) in our sample paint a completely different picture of the *SSBM* community.

Even though our sample battles the stereotype, there are also representations of others who fit the gamer stereotype so accurately; they could have probably pioneered it. MewtwoKing (M2K) is one such pro-gamer and his dedicated episode is entitled "The Robot". He appears socially awkward in both his demeanor (at tournaments and in interviews) and his appearance. Wife comments that M2K is "superficially stereotypical" and Chillindude829 adds that when M2K first appeared in the scene, "he represented everything terrible about the smash community (…) I didn't want this guy to be the face of Smash." (Beauchamp, 2011, "Paper Cuts") It seems that even when the stereotype is recognized and parodied within the community (Simons et. al, 2003), it still exists.

Research suggests that gamers are similar to scholars in their work (Simons et al. 2003); however, very few of these comparisons were made. One instance is made of M2K, who is portrayed as very studios in his gameplay, learning frame-rate data and amassing knowledge on the intricacies of *SSBM* (Beauchamp, 2011, "The Robot"). Other gamers, on the other hand, are shown as learning through play. An additional scholar comparison (or work of actual fan scholarship) comes from how

advanced in-game techniques are presented in the documentary. Albeit jokingly, techniques are explained in the *SSBM* laboratory, where two scientists introduce the hypothetical physics behind certain advanced techniques (Beauchamp, 2011, "Show Me Your Moves").

SSBM gamers are shown more as fighting gamers than eSport individuals. As characteristic of fighting gamers (Ferrari, 2013), smashers care dearly about their controllers: M2K walks around with a box of controllers, one for each character he uses (Beauchamp, 2011, "The Robot"), while others modify or stylize their controllers. More importantly, trash talking during gameplay is a common occurrence that many players discuss in interviews. While some players dislike it, others feel like it is an essential experience of playing *SSBM*: not only do you have to play well, but you also have to do so under pressure (Beauchamp, 2011, "The King of Smash"). This form of taunting communication (is considered strategic (Drachen, 2011), where players interact to further personal goals.

Portraying gamers as athletes is very common in our sample, just as the literature predicted (Hutchins, 2008; Jakobsson, 2007; Wimmer, 2012). Several pro-gamers are compared to traditional athletes: M2K is described as being the Michael Jordan of *SSBM* at one point in his career (Beauchamp, 2011, "The Natural"). When relating his style to another pro-gamer, HungryBox states, "he's a sprinter, I'm a marathon runner." (Beauchamp, 2011, "The Natural") Another player interviewed states, "we European players know everything about the American players, a bit how European basketball fans follow the NBA." (Beauchamp, 2011, "Don't Get Hit") Adding to the athlete comparison, several gamers state their need for extensive practice, or a conscious effort to improve. Additionally, the sample mentions pro-gamers acting as representatives of their state (or country) during tournaments.

Representations of gameplay

One important context of gameplay is that it is defined by its rules (Jakobsson, 2007). Throughout the documentary, various types of play are shown, each different because of given rules. "Money matches" are when gamers put forward an amount of money and the winner takes all. "Crew battles" is a type of battle where gamers pool their lives together and face opponents as a team (Beauchamp, 2011, "Don't Get Hit"). Competitive *SSBM* is also depicted as being defined by strict rules: four stock matches, an eight-minute time limit and the banning of items. Confirming what Jakobsson (2007) found during his ethnography, rules are shown to be severely important to gameplay, and an instrumental feature in defining the type of play taking place: whether competitive or casual.

Research also suggests that competitive gaming is compared to traditional sport due to a number of similarities between the two (Witkowksi, 2009). Based on the occurrence of messages in our sample, this comparison is the most common portrayal of gameplay. Gamer Wife likens the free nature of *SSBM* play to sport when he states, "You can compare it to basketball or football where a person has control of every movement of their body." (Beauchamp, 2011, "Show Me Your Moves") Moreover, competitive gameplay is depicted as an activity that requires dedication, teamwork, practice and persistence: something characteristic of traditional sport (Witkowski, 2009; Sørensen, 2013). Several pro-gamers interviewed state their need for dedicated practice to improve their skill, especially before major tournaments.

Competitive gaming is shown to share a lot of similar processes and institutions as traditional sport. Tournaments are held regularly and are the heart of the competitive *SSBM* scene. They are presented much like traditional sporting events, with original footage or graphical renderings of the bracket. Additionally, *SSBM* is stated to have been part of the MLG (Major

League gaming), an eSport company that presents and manages gaming events almost identically to traditional sport. Segments recounting the MLG feature post-match interviews with winning gamers, as well as live commentary. This commentary is a traditional sport-like aspect of the *SSBM* community that is stressed as important to competitive gameplay (Beauchamp, 2011). Like televised sports, commentary in *SSBM* is used to explain the strategy of players and more intricate or complicated forms of play that are not obvious to the casual observer (Ferrari, 2013). Furthermore, the act of gameplay is filmed like traditional sport; gamers are captured with quick action shots as they play and these shots are interwoven with original gameplay footage or dramatized in-game stills. Visual focus is sometimes given to the game controller and the gamer's use of it, stressing the importance of execution or the physicality of play (Wikowski, 2009).

Like research suggests (Ferrari, 2013), gameplay is also compared to an expressive performance. A majority of the in-game footage used has complex techniques and because only the avid gamer understands the beauty of these forms, to the general viewer, gameplay may seem more of a sport than an expressive performance. Still, the sample depicts *SSBM* as an art form through several statements. Commenting about watching two pro-gamers compete, DOH states, "it was these two people, who are so above us mere mortals, putting on an exhibition." (Beauchamp, 2011, "Don't Get Hit") The existence of different gameplay styles also adds to the expressive performance comparison. Wife states,

> "Everybody looks different. I can watch a video of a Marth and I can tell you if it's Ken or Neo or Azen. You can see the style in a person's character and that to me, is incredible." (Beauchamp, 2011, "Show Me Your Moves")

One pro-gamer (Isai) is described as competing not to win, but to please the crowd (Beauchamp 2011, "Don't Get Hit"). When

describing the playing style of HungryBox, several interviewees state that even though he wins tournaments, he is disliked for his defensive style because it is not entertaining (Beauchamp, 2011, "The Natural"). Enjoying one player's style more than another's suggests that competitive gaming is not strictly a sport, with only one way of competing or winning. It is more like a performance, where beauty of form (not just function) is taken into account. Finally, addressing this comparison, one gamer states:

> "Smash brothers is like an art form it actually isn't about being the best, it isn't about winning (…) it's about turning up at a venue with a game you all love and care about and playing it really cool, making it an art form. Just perform kick-ass, awesome [things]. Do awesome combos, invent stuff [and] be creative." (Beauchamp, 2011, "Game")

It is also important to note that competitive gaming is often portrayed as an occupation. All pro-gamers featured in the documentary tend to discuss their "careers" and even mention taking a "hiatus" or "retiring" from the game. Several pro-gamers are described as individuals who game for a living, like M2K, who supports himself with tournament winnings and sponsorship (Beauchamp, 2011, "The Robot"). So, *SSBM* play can also be seen as unpleasant, due to the pressures and responsibilities of competitive gaming, which liken it to a legitimate occupation. Discussing this, Ken states; "It wasn't fun anymore (…) it became more like a job than actually playing the game and having fun." (Beauchamp, 2011, "The King") This portrayal confirms what Taylor (2006) identified in her study, where gaming becomes tedious and more like a full-time job.

Representations of game community

The welcoming and integrative atmosphere of the community is represented through much of what the players say. However, regardless of these statements, the community is still shown as homogenous and lacking female gamers. At one point Chillindude829 even states that *SSBM* attracts people from all

walks of life, except for girls (Beauchamp, 2011, "Game"). This same gamer is seen later at a tournament, gossiping and seemingly disapproving of another friend's choice to team with a woman (Beauchamp, 2011, "Don't Get Hit"). MilkTea, one of the only female gamers interviewed, mentions that members of the *SSBM* community are keeping other female gamers from joining by using offensive terms, such as rape or gay (Beauchamp, 2011, "The Natural"). The strategic and taunting communication (Drachen, 2011) of the community could be one of the factors that alienate women. So, while the community is often stated as being accepting, it still seems to have issues woth the inclusion of women (Dovey & Kennedy 2006, 29).

The *SSBM* community is shown as having a great socializing influence on individuals, providing a space where gamers can make strong bonds. M2K, the pro-gamer said to be "superficially stereotypical" was able to improve his social skills, PC Chris states:

> "I feel like the smash community kind of helped him a little bit (…) if he was playing an online game, he might still be the same. He might not have that communication, like when you're talking and developing real relationships (…) he's gotten plenty of friends from Smash that kind of helped mold him to the person he is now." (Beauchamp, 2011, "The Robot")

This image confirms academic work that shows gaming to increase online and offline social capital (Steinkuehler & Williams, 2006; Williams, 2006; Trepte & Reinecke, 2011). Steinkuehler & Williams (2006) find that online gaming encouraging weak ties, however, bonding in the *SSBM* community appears to be strong, which is partially attributed to the co-located nature of play. Social gaming in the same physical space has been proven to result in less social displacement than online gaming (Kowert et. al, 2011).

Even as an offline game, the *SSBM* community still partially exists on the Internet. Several pro-gamers recount events that occurred only on smashboards.com, the community's online

hub. Others interviewed stress the importance of smashboards.com to the community, discussing various online personas of certain gamers. This aspect characterizes the community as an imagined community: communities that are not based on daily face-to-face interaction between its members due to practical and spatial reasons (Anderson, 2010).

Aside from the use of the gaming equipment and online forums, the community also employs other media tools. Documentation is of extreme importance, as Jakobsson (2007) found, and there exists a lot of real-life tournament footage and recorded gameplay used heavily in the episodes. The series also discusses the role of camera and production crews in documenting the *SSBM* scene, and how the process has developed over the years (Beauchamp, 2011, "The King of Smash"). The activity of making and distributing DVDs of matches shows the role of media in the process of information sharing and learning. One specific match mentioned ("Match 4"), is credited for being the most viewed match of all time on YouTube and reviving the community when it was on the verge of dying (Beauchamp, 2011, "The Robot"). The community is also shown as very proficient social media users, when they were able to raise almost 95 thousand dollars for breast cancer. The pledge drive was part of a competition to be included in the EVO 2013 tournament lineup. When Nintendo denied them streaming rights, the community used social media to rally people against the company, which recalled its decision only five hours later (Beauchamp, 2011, "Game").

Discussion

This study analyzed how digital game culture is portrayed in a YouTube documentary. This specific form of social media portrays the culture of *SSBM* as detailed and complex. The community cares deeply not only about the game being played, but also about how it is being played and those playing it. Gameplay is the most featured element in our sample, with

diversified ways of play being compared to expressive performance and traditional sport. Competitive gameplay is seen as the pivotal ritual on which the culture is based and language is portrayed as being an essential part of the community, strengthening its categorization as a culture.

The documentary presented both negative and positive aspects of this specific game culture, which was not expected. As a crowd-funded project, the sample was expected to glamourize the subject matter. However, certain negative aspects were also communicated, even if unintentional, such as the homogenous nature of the community and pressures of professional play.

Regardless of negative portrayals, the documentary manages to communicate how important certain elements are in popularizing a game, extending its life even after the release of sequels. Unique constituent rules (and the ability to appropriate them for different kinds of play) prolong the life of *SSBM* and diversify its use. Additionally, a community with a strong socializing effect (and online presence) manages to contribute to this game's longevity. Finally, when gameplay is considered both a sport and an expressive performance, there is room not only for different types of play, but also their appreciation. This leads to *SSBM* being appropriated differently, catering to a multitude of individuals with varying motivations for play and entertainment.

Overall, the representations of the four dimensions (game, gamer, gameplay, community) provide a comprehensive image of *SSBM* culture. Interestingly, the documentary only focuses on the US; hence, aspects of the international community (and its influence on *SSBM* culture) are not included. Still, these representations give insight on the US focus of the culture (Taylor 2011), as well as its gendered nature. Ultimately, using original footage when available, the community-funded project tries to act as a historical record of events that contributed to the growth of the community.

It is important to note a few limitations of this content

analysis. Initially, only two coders conducted the content analysis after an intercoder-reliability test was held. In regards to sampling, the selected sample was purposive and, hence, generalizations towards all of YouTube communication (regarding game cultures) cannot be made.

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PART 2: GAMES LEARNING SOCIETY

LOVE IS A BATTLEFIELD: A COMPARATIVE ANALYSIS OF LOVE AS A GAME MECHANIC AND SARTRE'S BEING AND NOTHINGNESS

Kyrie Eleison H. Caldwell

Abstract

This piece uses a semiotic textual analysis to discuss love-based mechanics in particular games, namely *Fire Emblem: Awakening*, *Persona 3* and *Persona 4*, and the *Harvest Moon* series. These games' love-based mechanics share an archetypical construction that posits a problematic discourse of love that revokes subjectivity and agency from the (usually non-player) characters who serve as objects of love for the player character. That rhetoric of love is then compared to that of Jean-Paul Sartre in *Being and Nothingness* in order to explore how these games' mechanics of love undermine the diversity of games' narratives and people's actual experiences of love.

Introduction

A point often missed by the contentions and tensions in the current climate of the gaming community, diversity does not only lie in sex/gender and skin tone. Indeed, diversity is more usefully considered a difference in experiences, differences that sometimes accompany those more physical markers but mean much more for people's interactions with others and the world.

One such kind of experience is that of love, a ubiquitous, historied, and multifaceted theme that has been represented and investigated in many media forms, including games. Although narratives of love and the discourse of those narratives in games vary widely, the use and discourse of love as a mechanic or set of mechanics (i.e. the actions performed by the player to interact with a game; Sicart, 2008) does not show this range and depth. In this paper and the accompanying presentation, love-based mechanics will be discussed through an archetypical representation, traceable through several well-known video game franchises. These games' generalizable love-based mechanics posit a problematic discourse of love that revokes subjectivity and agency from the (usually non-player) characters who serve as objects of love for the player character, who gains power over others without repercussions or resistance from any agent other than the player and also embodies the extreme and usually unfulfilled desires described by Jean-Paul Sartre in *Being and Nothingness*. To investigate the dynamics at hand in these mechanics, I will be using a semiotic textual analysis to collect instances of discourse, i.e. moments or fragments of meaning-making, to then contextualize these elements in the structure of the text and amongst taxonomic precedents across texts. Through deconstructing the rhetoric of love in these mechanics, I will compare that rhetoric to Jean-Paul Sartre's work on love, the self, "the Other," and the violence enacted between these in *Being and Nothingness* (1993) to further scrutinize the relationship between power and romance in games, exploring how the dominant portrayal of playable love does not reflect a diversity of experiences and instead invites a space for deeply embedded, structural forms of violence.

As games' narratives and audiovisual presentations grow in complexity, verisimilitude, and artistic depth, games' representations of love as an emotionally nuanced and significant theme have been able to interact with a large range of love stories that can be both profoundly moving and challenging.

However, in the actual mechanics, the procedural, operational rhetoric of games, love has primarily been either absent or simplified. Even in many well-known, best-selling, and critically acclaimed games and game series, love-as-mechanic can be reduced to a simple template: the player character has a choice of potential love-objects; the player character initiates courtship via time spent with or goods given to the chosen love-object; the love-object falls in love with the player character; and the love-object produces benefit for the player character. This situating of love is an archetype in the sense used by Umberto Eco (1985), as "a preestablished and frequently reappearing narrative situation" that perpetuates an emotional response when the audience reencounters that situation in other texts (p. 5). In this case, that emotional response is the dynamic, or the experienced affective effects of game mechanics (Sicart, 2008), here the mechanics of love.

In order to deconstruct and closely examine this "intertextual archetype" (Eco, 1985, p. 5), the games *Fire Emblem: Awakening* (Intelligent Systems, Nintendo SPD, 2013), *Persona 3 Portable* (Atlus, 2010) and *Persona 4* (Atlus, 2008), and the *Harvest Moon* series (Marvelous Interactive) will be presented as case studies from which to tease out how this archetype works, indeed, intertextually. Although other games do use love as a mechanic (and arguably also adhere to the proposed archetype of love), the current case studies were chosen for deeper analysis due to love's pivotal role within each game's or series's narrative and mechanics. In *Fire Emblem*, the pairing of characters (units) during battle results not only in much stronger and more resilient units, but these pairings also result in marriage and, at a certain point in the game, in the appearance of their children, who have traveled from the future to rectify devastating events before they can occur. These children become some of the most powerful units in the game, thus imbuing them with great mechanical as well as narrative power. In *Persona 3* and *Persona 4*, the main/player character teams up with groups of fellow

high school students to solve mysteries and fight evil entities in worlds connected to but apart from the characters' own. The conceit is that the power to fight these entities is gained through the strength of heart found through close bonds of friendship (including romance), and the game consists mostly of players balancing spending free time with people in the main character's life and battling alongside some of those people. In *Harvest Moon*, the player is an up and coming farmer who restores a farm from some sort of ruin, building a role for him- or herself in the neighboring village and in the romantic life of a neighboring villager. Player characters must marry to produce a child (which occurs automatically after marriage) for the game to consider play successful and thus allow the player to progress past deadlines for these actions. These games are narratively and aesthetically different, yet their mechanical progression through love mirrors the archetype defined above, so I will use these games to closely read how that archetype works, but the case studies' specificity is less important to my argument than their structure.

To explore my case studies, each stage of the archetype will be taken as its own unit, or as "frames," to use Eco's (1985) terminology for "stereotyped situations" recurring recognizably but still satisfyingly across texts (pp. 4-5). Here I consider frames as subsections of the archetype, as distinguishable from how Eco defines archetypes as the "magic" or personally/culturally fascinating version of an intertextual frame. The archetype is here a system that arises from the use of multiple frames that interact with each other predictably and meaningfully in the texts, much like how game mechanics interact with each other to produce a system of rules and thus create a world through limitations and delineations.

Framing the Archetype

The first frame of the archetype is the choosing of the love-object. During this stage, the player is often at the mercy of

the game creators; few games have the capacity for players to choose any other character or object in the text as an object of performed love, likely due to the manual work needed to materialize such actions through dialogue (written or spoken), animations, and narrative branches.[1] Thus, the player's scripted choices of love-object tends to reflect certain cultural assumptions, usually limiting players to heteronormative in-game relationships. However, once this is accepted by the player, the love-object shows no resistance. In *Fire Emblem: Awakening*, certain character pairs have the option to achieve S-Rank Support, or the last of four potential ranks, achieved through interactions during battles and demarcated by narrative interludes in which the characters involved converse with one another. As long as that S-Rank Support is achievable (marked for the player as present or absent on a menu), eventually reaching it guarantees that the characters will declare their mutual love and marry. Though the narrative between each pair was chosen by the game's creators, the only mechanical choices to be made are those of the player: which characters to pair, how to achieve higher rankings, and whether or not to watch the scenes between those characters.

In *Fire Emblem*, these choices are repeated, and in the archetypical love-as-mechanic, repetition is integral in every in-game relationship as the key to courtship. In fact, the archetypical courtship is in totality the repeated performance of specific actions in the "right" way. For *Fire Emblem*, the player repeatedly pairs the intended couple in combat so they might break through the enemy ranks together, thus raising their own Support ranks with each other. The *Persona* games require players to choose how to spend their in-game time, so as long as the player chooses the right timeframe to spend, in which the love-object is "available" for spending time with the player character, then that relationship (in the games' terms, the Social

1. The role of the creators and the forces acting upon their choices are interesting subjects, but these sociocultural aspects are outside of the scope of the current study.

Link) will succeed, climbing from Social Link Rank 1 to Rank 10. In the *Harvest Moon* series, player characters give material goods to the love-object, who has a scripted set of liked and disliked goods. As the player character continues to regularly give the love-object his/her favorite goods, the interactions between the two characters become more amorous, and the love-object's "heart levels" rise along a given scale until reaching maximum. Usually during this time the player character needs to make adjustments to their farm and farmhouse in order to accommodate a spouse and family.

When the courtship succeeds, there is a moment that love is declared, leading either to dating (*Persona* games) or marriage (*Fire Emblem* and *Harvest Moon*). This marriage is an end goal of sorts, as there are rarely scenes and conversations between characters after their declaration, and those scenes that do exist suggest that all is well in their perpetual garden of love. In *Harvest Moon*, the beloved character is in large part defined by their relationship with the player character, moving from bachelor/ette, spouse, and finally to the other parent of the player character's child. *Fire Emblem* labels characters as bound to one another, marking the beloved's name in the same space that marks the character's statistics as used for deciding their role and power in battle. During certain scenes amongst the Social Links of *Persona 3* and *Persona 4*, the player character can enter a relationship with characters of the opposite gender. Indeed, the player character can enter multiple relationships. In *Persona 4*, this can be done with no mechanical consequences (i.e. losing Social Link points), but *Persona 3* does allow Social Links to drop rather than rise if the beloveds discover each others' relationships, but this too can be remedied.[2] Thus, the player characters in these games are bound to some extent to the love-object once love is declared, but not to the same extent that the

2. This information has been gathered from various forms and wikis about the games, as I am unfortunately not able to access these scenes for the purposes of this paper.

love-object becomes a facet of the player character's existence rather than any independent existence.

Since love is a mechanic in these case studies, there is a greater mechanical use for love in each game's system of rules, and in all three cases that greater use is tied to the games' primarily dynamic modes. In *Fire Emblem* and the *Persona* games, this is strength and efficiency in battle; in *Harvest Moon*, this is running your farm into perpetuity. Thus, love-as-mechanic provides the means in each game to the best and fullest experience of the game's key dynamic systems. The children from the future of *Fire Emblem*'s main characters are amongst the most powerful units of the game, and the children in *Harvest Moon* continue the legacy begun by the main player character as the latter ages and eventually dies with this heir in place. For the main characters of the *Persona* games, their inner strength is somewhat literally boosted by each friendship or love, as higher Social Links with each character result in better battle statistics (e.g. strength, magic, and defensive power) for the player character's Personas, or the collectible beings that manifest the power to fight evil. Furthermore, love (*eros*) does not achieve anything more mechanically powerful than friendship (*philia*) does (Cassin, 2014, pp. 602-605).

For the Love of Sartre

When these case studies and the surrounding archetype are put into conversation with Jean-Paul Sartre's *Being and Nothingness* (1993), serious problems and tensions in love-as-mechanic emerge. In Part III, Chapter 3, "Concrete Relations With Others," Sartre discusses how love structures the interactions (physical and metaphysical) between the lover and the beloved, or the self and the Other. The relations laid out in Section I, "First Attitude Toward Others: Love, Language, Masochism," around the subjective freedoms of the self and the Other as engaged by "the look" is most useful for my purposes (pp. 365-372). Here Sartre dives into the problem posed by love, namely that there

is conflict between the lover's retaining the freedom to be a being-for-itself, a consciousness (for a person is fundamentally not a being-in-itself or an essence) and that lover's attempt to sublimate and possess the beloved's own freedom, by means of the beloved's freely chosen allowance of this. Were this possible and the ideal of love reached, then the lover (the self) becomes transcendent, safely, and ultimately free/conscious. The problem, Sartre continues, is that the Other is also a being-for-itself, whose consciousness and subjectivity posits the original self as an object, thus alienating his/her freedom (p. 375). Now the ideal of love is shown to be impossible, since the attempt to sublimate the freedom of the lover/beloved is circular, and thus both lovers' freedoms are alienated (p. 376). The question that I will pose in relation to love-as-mechanic in games, then, is how the work of love would change when freedom is unequal, when the beloved can be reduced to a being-in-itself, for the beloved has no agency or consciousness of its own? That the archetype of my case studies' love-as-mechanic allows an unproblematized experience of love is a metaphysical problem of power dynamics, especially when enacted repeatedly for the player, as will be shown in my close readings of the case studies and their archetypical construction.

Sartre's conceptualization of choice in relation to others is the choice of the beloved, that the self is the one who is to be "freely chosen as the beloved." To be so is to assimilate the beloved's freedom, or, in other terms, the ability to make choices. But in the archetypical love-as-mechanic, the choice is always that of the self, the player/player-character. The only look (objectifying, reductive gaze) that is present is that of the player towards the love-objects. In this way, the player does indeed "escape the *look* of the beloved," or at least is met with "a look with another structure," which allows the player to transcend the status of "a 'this' among other 'thises'"(p. 369). This passage has fascinating implications for the medium of gaming, as the player's presence and interaction is the contingent upon which the gameworld

relies. Although the written code of the game is present regardless of the player, the gameworld and the characters within are only rendered and only perform their functions when the player chooses to engage them. In this sense, "the world must be revealed in terms of" the player. Sartre continues, "In fact to the extent that the upsurge [i.e. the meeting of consciousness and the world] of freedom makes a world exist, [the player] must be, as the limiting-condition of this upsurge, the very condition of the upsurge of a world." Here I have replaced the referent "I" with the player, the self that is involved when a game is undertaken, but the meaning is merely contextualized rather than modified. The choice of the player in not only choosing a love-object but indeed in choosing to play a game at all creates the world within, including the love-object, which is ultimately a being-in-itself, which little complexity outside of a predetermined, prewritten, and preanimated personality, even in the case of seemingly life-like/plausible characters.

In all of these games, it is guaranteed that if all requirements have been met, the love-object will be successfully courted, or in Sartre's words, seduced. In Sartre's figuration, seduction is a response to the beloved's look, which "apprehends the lover as one Other-as-object among others" and is thus able to transcend and use the Other, or the original self (p. 371). But as discussed above, the beloved in my case studies cannot have a look and can only be subject to the player's look. Thus, the love-object is just that— the "Other-as-object." Whereas in Sartre's discussion the process of seduction is meant to bring nothingness into the consciousness of the Other and recognizable fullness into the consciousness of the self, as the self "present[s] the world to the beloved and […] constitute[s itself] as the necessary intermediary between [the beloved] and the world" through acts that are "infinitely varied examples of [the self's] power over the world (money, position, 'connections,' etc.)" (p. 372). This correlates with the presentation of objects or the decision to spend time in one place rather than another that effectively makes the player

character's beloved "feel"— or, better yet, trigger prewritten and preanimated expressions of feeling— special in the eyes, the look, of the player character. Through the repeated actions of courtship within love-as-mechanic, the player is held above the game characters, or in Sartre's terms, "through these different procedures [the self] propose[s itself] as unsurpassable" (p. 372). Although normally this would not have value without being authorized by the freedom of the Other, even if made to be nothingness, in the love-as-mechanic archetype, the freedom of the Other does not exist, and there is no resistance to the self's proposal of its "plentitude of absolute being" (p. 372). Thus, the player character's courtship must succeed, for there is no resistance to it.

As noted above, that courtship leads inevitably to a declaration of love and a binding of two characters, sometimes as a marriage. This binding is, for the most part, unbreakable, as it does not need further attention to continue. Instead, love-as-mechanic is soon shifted from the site of work to the site of reward; it achieves its maximum status long before other struggles are resolved, becoming a tool to leverage towards those struggles rather than itself being a site of work, tension, and navigation of the self and the Other. Love here is thus indestructible, as there is no "deception and a reference to infinity" that comes from love as the relation between two being-for-themselves, nor can the Other ever render the self as a love-object, and there is no other agent to disrupt love "as an absolute axis of reference" and to shame the self by making the self relative (p. 377). This is a love that rewards without the consequences of work, insecurity, or shame, which would seem to be the perfection of love's ideals. However, it only that embodies that perfection for the one, the self, the player/player character who is able to assimilate the Other, who has no agency and consciousness or even bodily presence. This would be a problem indeed for Sartre's metaphysics. When the self "experiences himself in the face of the Other as pure transcendence," as the player does, the result

is a need to use the love-object as simply an object while also seeking to validate the self's transcendence through the non-existent transcendence of the Other (p. 399). This paradox leads to the use of sadistic methods to resolve it via the effort to incarnate the Other through violence, and this incarnation "by force" must be already the appropriation and utilization of the Other" (p. 399).

Conclusions

This seems to be a dire result of an archetype that, when again particularized in the originating games, is surrounded with uplifting, sweet, and otherwise extremely positive textual, visual, and aural discourses of love. Yet, as mentioned above, it is crucial to the study of games to plumb their arguments beyond their narratives and audiovisual presentations. Mechanics and their resulting dynamics are what a player feels when playing a game, and oftentimes those feelings are connected to those of agency and capability, which can inspire the motivation to continue through the tasks presented in a game. In many cases, the player can gain incredible power within that gameworld, which may be able to ignite longer-lasting feelings of power, even superiority and exclusivity. These are then connected to the violent actions players perform in many games and the violent actions people perform in real-world situations, thus landing games a sordid reputation within mainstream media discourses. Yet, for the work done on explicit violence in games, there is much less done on structural violence in games, the violence latent in performances of actions and situations other than inflictions of physical harm and, as shown, have the potential to become ultimately much more problematic.

For games to progress as a medium, it is fruitful to recognize mechanical archetypes as stereotypical, and therefore easily designed and read/played, systems that may be the source of issues still unsolved by more innovative approaches to narrative and audiovisual art in games. The mechanics of love and love-

as-mechanic could be a particularly beneficial place for further research into design tropes so that love in games, even if a source of conflict, is not a source of power that is answerable only to and by violence. Less immediately dire but just as important in the long term, critical and reflective design, such as that discussed and modeled by Mary Flanagan (2009), is also the way towards better and more diverse representations of experiences in games and thus a more inclusive games landscape, and perhaps even more inclusive game communities.

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ROCKSMITH 2014 – 60 DAYS OF VARIETY, FEEDBACK AND MISSIONS

Osvaldo Jiménez

Abstract

Rocksmith 2014 is a game that the developers have mentioned as specifically geared towards learning the guitar. This paper covers the experience of playing the game over 60 days for one hour each day, an idea promoted by the developers of the game. The paper discusses how *Rocksmith 2014*'s 60-Day challenge, its variety of play options, well-constructed feedback, and mission system make it a game worth further discussion.

The Path to *Rocksmith 2014*

Rocksmith 2014 is a sequel to the original *Rocksmith* game meant to teach players how to play the guitar. In *Rocksmith 2014*, players use a real guitar, rather than the plastic peripherals meant to simulate the guitar used by early rhythm games like *Guitar Hero* (Harmonix Music Systems, 2005) and *Rock Band* (Harmonix Music Systems, 2007). Games like *Guitar Hero* were argued by researchers and music educators to hold some promise in being incorporated into music education (Gower & McDowall, 2012), but have also been lambasted by guitar players as oversimplifying and therefore not representing the real experience (Arsenault, 2008). To combat this latter argument, *Rocksmith 2014* and its

predecessor *Rocksmith* allow you to plug in an actual electric guitar or bass into your console via a special adapter for playing the game (Ubisoft San Francisco, 2013). By using a real guitar, it seems to be the hope of the developers that the game becomes a viable option for learning to play the guitar. *Rocksmith 2014* prints on their cover and in their promotional literature that the game is the "Fastest way to learn guitar", which they state is based on national studies (Ubisoft, 2013).

While the original *Rocksmith* mentioned on their website that the game would allow players to "develop real skills and real styles while playing…" (Ubisoft San Francisco, 2011), *Rocksmith 2014* was the first game that made a concerted effort to say that one would learn in the game (Gera, 2013). In Gera's interview with the Creative Director of *Rocksmith*, Paul Cross, Cross mentions that the original game had a "passionate and active community", yet Gera writes that the development team for *Rocksmith*, "…was 'disappointed' in critical appraisals of the game that stated that *Rocksmith* failed to teach its users to learn guitar…" (2013) To improve on the original game, Gera reports that Cross and the development team made some changes, like removing an overall journey mode, and replacing it with a mission system that gives players three goals to achieve at any one point in time and introducing more constructivist tools like session mode (2013), which is meant to allow the player to play along with other instruments in an unobstructed environment. Based on arguments and claims made by *Rocksmith 2014*, I decided to try and test out the game to see if it could help a complete novice, like myself, learn how to play the guitar.

The 60-Day Challenge

In addition to being a guitar novice, I knew little about *Rocksmith 2014* before purchasing it. The game is available for many systems, including recently the latest generation of consoles. I chose the Xbox 360 version. Upon opening the game and examining its booklets and promotional leaflets, I was struck

by its focus on trying to get you to learn and play guitar. In the materials as you open the game, there is a leaflet which is called the 60-Day Challenge, which includes a URL to a webpage providing more details on what they want you to do, which is essentially to play the game for an hour per day. One of the strengths of this type of challenge is that the game's literature does not say that you must play the game a certain way, in fact they state that they want you to merely play an hour a day, "However you want, whenever you want" (Ubisoft, n.d.). Using their system they claim to have you learn and experience a wide variety of guitar techniques, including barre chords and arpeggios, as well as scales, vibrato and a variety of harmonics. While this is small, I think it is great in that they are relying on merely spending the time playing the game rather than placing stress or onerous demands on focusing on a specific area of the game. This plan aligns well with research on expertise for gaining some proficiency in skills like typing and driving a car, where researchers argue that learners usually achieve a proficiency level with no more than 50 hours (Ericsson, 2006).

In order to then analyze their claim about the 60-day challenge, I decided to participate in the challenge myself. I had no knowledge of playing guitar, but have some previous experience playing both *Rock Band* and *Guitar Hero*. In July of 2014, I began playing the game from Monday to Friday typically, playing for an hour each day. I continued playing the challenge over the course of 13 weeks until October of 2014. In order to help with analyzing the game, I decided to follow a retrospective think aloud format, since I did not want to deter from the gameplay experience (Iacovides, 2009). Therefore, with each 1-hour session on each day that I would play, I would write down field notes expressing thoughts that I had before playing the game or times that I would think about the game outside of the gameplay period. After playing for the hour, I would do a post-reflective exercise, in which I would write down my reactions, a summary of what I did, and any data that I could remember while

I played. If I found any frustrations or things that I appreciated about the game, I would also write these down as part of my analysis. The analysis that I wrote before and after each hour of gameplay led to a 100+ page document full of notes, observations and reactions on the game.

Examining the part of the document that I wrote at the end of the 60 days, my reflections at the time stated that I felt I had improved my ability to play guitar, but certainly understood my guitar abilities were still quite limited. I had no understanding of sheet music, could not play a song in full on my own and struggled mightily with certain types of chords, like barre chords. Nonetheless, I did feel as though I had learned and become proficient at strumming certain chords and in moving my hand in all sorts of configurations along the neck of the guitar to be able to play at least part of a tune. I felt I could play the chorus of certain songs, like Def Leppard's "Pour Some Sugar On Me" and Weezer's "Say It Ain't so" to the point that I felt they were recognizable. There were also certain songs in the game that I noticed I could keep up with playing the chords they wanted me to play, and I had this confidence that with some practice and using *Rocksmith 2014* I could play a version of many songs, which was a large departure from where I started. So even though there are issues with the game, I learned some aspects of playing guitar with *Rocksmith 2014*, which is a feat. Focusing on the positive, it is important to use the observations made in my analysis document to provide support for elements of the game I found to be a strength. More specifically this paper will explain how the elements of variety, feedback, and suggestions make *Rocksmith 2014* a "well-played" game that is worth studying and discussing amongst the educational video game community.

Variety is the Chorus

One of the first things I noticed and wrote about on my first day with the game relates to *Rocksmith 2014*'s claim of doing a 60-day challenge by playing anything. After having completed the 60

days and learning some guitar, I think they were able to make this claim because of the variety of ways that *Rocksmith 2014* allows you to play the game. On the main menu for the game, there are seven different options for the player related to learning about the guitar, with five of them being different modes for the player to take on. The main mode, called "Learn a song", is the most similar to the early rhythmic games, in which players choose a song, and then begin to strum the guitar in ways that match the song itself. With over 50 songs in their playlist spanning over five decades and over 400 songs available as downloadable content, there is quite a number of songs that one could find. While I do not consider myself as someone who likes rock music, I could easily find a number of songs that I was familiar with and which gave me the desire to want to play them, which aligns with a professional game reviewer's comment that the 50 songs were "satisfyingly comprehensive" (Ogilvie, 2013).

This variety however, also extends to the many other options that are available from the start, which include a selection of videos under their "Lessons" area, a constructivist-like experience in "session mode", in which players have the opportunity to experiment and just strum the guitar in a free-flowing like format, and a place where they can experiment with pedal effects in their "Tone Designer" area. Aside from these areas, an area I spent a lot of time in was the "Guitarcade" area, which is a set of 11 mini-games meant to address different techniques used in playing guitar. For example, one mini-game, *String Skip Saloon,* looks to be inspired by *Tapper* (Marvin Glass & Associates, 1983) and helps players practice plucking different guitar strings. Some of the mini-games even cover the same guitar concept, like chords. Chords, defined simply, are notes produced by holding multiple strings on the guitar with one hand and strumming those strings with the other. In learning guitar, chords are a difficult topic to master for beginners (Miura, Hirota, Hama, & Yanagida, 2004), which makes sense for why *Rocksmith 2014* provides multiple mini-games to address this

topic. Below are screenshots of two of the games that are meant for practicing chords, *Return to Castle Chordead* and *Star Chords.* In *Return to Castle Chordead*, *Rocksmith 2014* uses the approach taken in *Typing of the Dead* (WOW Entertainment, 2000) in creating a rails-like story game in which players must play an appropriate chord in order to "shoot" various monsters and progress through a story to face a villain. This mini-game also resembles *Rock of the Dead* (Epicenter Studios, 2010) which used the original *Guitar Hero* plastic peripherals and had players play notes to advance through the game and story. Figure 1 shows a screenshot from the mini-game where the player is walking through a castle level and must play the F5 chord to take down a monster before the monster reaches the player. In the figure, which is in first-person perspective, one notices the neck of the guitar in the lower center of the screen, which is metaphorically the gun used in many light-rail shooters. One also notices that the F5 chord is placed up top and to the right, with a diagram displaying how to play the chord. This diagram is a depiction of the strings and frets needed to strum the correct chord. *Rocksmith 2014* repeatedly utilizes this diagrammatic representation to display the frets and strings to hold for specific chords.

Figure 1: Screenshot from Return to Castle Chordead Mini-Game

While *Return to Castle Chordead* follows a "damsel in distress"

narrative, the narrative in *Star Chords* has been simplified to shoot enemy spaceships by playing chords placed next to those ships. *Star Chords* shares the same overall mechanic of having to perform a chord represented on screen and as an enemy in order to progress through the game. However, the enemy which was represented as a monster that charged at you in *Return to Castle Chordead* is replaced by enemy spaceships that eventually shoot at your spaceship in *Star Chords*. Figure 2 provides a screenshot of *Star Chords* that uses the same chord displayed in Figure 1, but now the diagrammatic representation of the chord that was in the upper right of Figure 1 is in the middle of the Heads up Display for the spaceship in Figure 2, with the F5 label on the enemy highlighted more prominently.

One part of the mechanic that both games do well is that they reward players who memorize what the F5 Chord is, which translates to the symbolic representation used in traditional guitar instruction. Both games promote the memorization of chords by using the same mechanic. When an enemy appears, it first appears just with the symbolic representation of the chord, simply displaying the characters "F5". If there is a seasoned player who understands how to play the F5 chord, then they would be able to have a head start in eliminating the enemy and achieve a higher score. For players who do not play or remember the chord (such as F5), *Rocksmith 2014*'s diagrammatic representation starts to slowly appear, first highlighting the red bar in the first column, meant to represent holding the E (heaviest) string on the first fret (the fret at the top of the neck of the guitar), followed by the yellow bar and then the blue bar in the third column, representing the A and D strings on the third fret. Both mini-games incentivize players to learn the symbolic representation once they understand the diagrammatic representation used in the game. In addition, both games do a good job of showing only a few chords in the beginning, and gradually adding more variety to the sequence of chords presented.

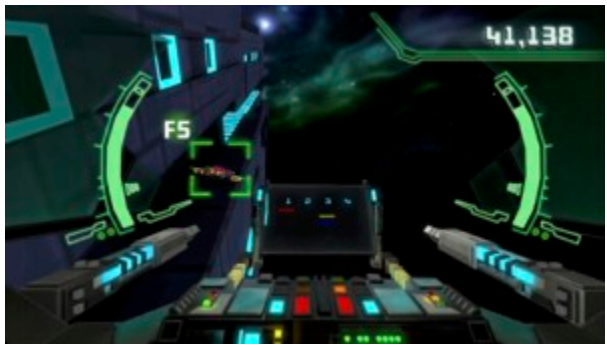

Figure 2: Screenshot from Star Chords Mini-Game

In looking at the two games, I not only prefer *Return to Castle Chordead* over *Star Chords* because it has a stronger narrative, but I also prefer it for the fact that you can practice a certain set of chords, as the game's short story on rails allows you to progress through the entire story in about 15 minutes, providing a checkpoint system that is completely missing in *Star Chords*, where you must always begin your spaceship journey from the beginning. Using the MDA model to analyze both games (Hunicke, LeBlanc, & Zubek, 2004) and applying learning goals to that framework, both games exhibit the same learning goal and mechanic of matching enemies to a chord. Nonetheless, the dynamic and aesthetics of each game differ, creating what feels like a different experience in both. This caused me to alternate between the games. Like for example on the 48th day, after playing *Star Chords* for a while and not passing my high score, I got tired of playing the game yet still wanted to practice chords, so I switched to playing *Return to Castle Chordead*. While this type of variety is not always feasible in games due to the amount of resources needed to produce both games, it is an important piece to understand the role that aesthetic pieces like story (Jimenez, 2014) and dynamics can have in creating experiences that feel fresh for gamers, yet still allow them to work towards the learning goals set out by the development team.

Amplified Feedback

Another area where *Rocksmith 2014* excels is in the feedback given to the users. While the game provides some summative feedback at the end of playing a song, the game also provides frequent feedback to users with each note that they try to play with their guitar. While this is common for rhythm games, one thing that is not as common is providing corrective feedback to the users. Rhythm games often display whether one was late in hitting a note, but *Rocksmith 2014* also provides arrows indicating corrective feedback to play the correct note. So for example, if the note the song asked for was on the 12th fret (column) and the player struck the 11th fret, *Rocksmith 2014* would have provided arrows to the right of the 11th column to indicate that one needed to go to the right next time. According to researchers, this is important to learners, as they suggest to "[p]rovide corrective feedback that helps the learners see the causes of their mistakes, and how to take corrective action." (Keller, 1987, p. 5) *Rocksmith 2014* does this by indicating which way novice players need to move their hands so that they can play the correct note.

While the immediate feedback given in the game helps the users immediately correct their actions, the game also aggregates that feedback and makes suggestions to players based on that data. *Rocksmith 2014* will try to match the complexity and number of notes to how well players have fared under similar circumstances. It does this to the point that even in new songs that you decide to play, *Rocksmith 2014* will not start you with the easiest version of the song, but one that matches to your overall mastery and accuracy level. I found this out as I started playing on my 26th day a song that I had not played up to that point. During that session, the game presented certain parts of the new song at a non-beginner level, which I was able to see based on bars placed at the top of the screen that indicate mastery. Each bar represents a small section of the song. Once a player does a good enough job playing all the notes necessary for that section

of the song, *Rocksmith 2014* continues to challenge players by offering "Master Mode", which is a special mode where the notes for the song slowly fade out as you demonstrate proficiency in playing the song (See Figure 3), until the notes completely disappear.

Figure 3: Screenshot from playing a song where Master Mode has been achieved

The techniques implemented in Master Mode can be interpreted in multiple ways based on the literature. In one way, Master Mode can be interpreted as being the vital part of fading in scaffolding and fading techniques (Pea, 2004). Nonetheless, it can also be interpreted via the guidance hypothesis in the feedback literature (Schmidt, Young, Swinnen, & Shapiro, 1989). The guidance hypothesis discusses how it is important for learners to get immediate and substantial feedback when they are acquiring knowledge about the subject matter. In this case, when players new to *Rocksmith 2014* are first learning to play guitar, they should receive the substantial feedback that they do on every note. Moreover, the guidance hypothesis also suggests that having that type of feedback when learners are proficient may actually cause those learners to over rely on that feedback, blocking them from learning the material (Schmidt et al., 1989, p. 358). Researchers argue that once players are proficient, the feedback should be delayed. This is similar to what happens in

Master Mode. Because the notes disappear, the player cannot rely on the immediacy of the earlier feedback, and must instead rely on their memory of the song. According to the guidance theory, *Rocksmith 2014* could have taken it a step further by delaying the feedback even further. This could have been achieved by not providing any information on the notes until the end of the song. This would have provided players with a seamless transition between the game and coming to do a real performance. Nonetheless, in my experience with mastering parts of the song, I noticed that I was already relying on listening to the sounds the guitar was making, rather than the screen as I played the sections of a song I felt comfortable with.

While *Rocksmith 2014* provides a wealth of immediate feedback, it also provides good instances of delayed feedback as well. The best instance of this is in the "Rocksmith Recommends" system, which is linked to each song. When a player wishes to learn a song or play a particular song, they tend to go through the list of songs and select one to play. Before the game launches the user into playing the selected song, the user is presented with various options. Part of those options include a "Rocksmith Recommends" system, a set of three suggested activities the game provides to the user based on their last play-through. The recommendation system not only lists the suggested activity, but once one highlights that activity, the game also tells you why it is providing you that suggestion. For instance, one suggestion may be to play a certain mini-game like practicing sliding, because of a prior poor performance in sliding. In this way, *Rocksmith 2014* is doing a good job of providing feedback meant to change the quality of performance, which has been termed as formative feedback (Tosti, 1978). If the desire is for people to improve on their performance, Tosti states that such feedback must be given just before the next performance (1978), which aligns exactly with where this feedback is given in *Rocksmith 2014*. Providing the feedback just before a user jumps into a song becomes the ideal position for those players to then concentrate on using

that feedback to improve their performance, researchers claim this position to be "the teachable moment" (Dempsey, Driscoll, & Swindell, 1993). This is a similar path to one I took in one of my favorite songs. In my notes I noticed that in my 19th day of playing and practicing one song heavily, I finally paid attention to the recommendation system for that song and noticed that it wanted me to focus on practicing the chorus of a particular song, so I then spent the majority of the time practicing the chorus on that day.

Rocksmith 2014 is my Mentor

While the feedback presented during each song works well, another aspect of the game that works well is the "Rocksmith Missions" system, which is a set of three missions that are presented on the title screen on the right. The missions presented are varied from working to achieve a new level in a Guitarcade game, to practicing jamming in the session mode, to editing tones in the tone designer or reaching a higher mastery level for a particular song. This mission system is something that was improved upon from the original *Rocksmith* which provided a single objective (Gera, 2013). By giving you three missions, *Rocksmith 2014* is providing you with a choice in achieving the goals they have laid out for you. You can completely ignore the missions, but the game has done a good job of presenting them on the title screen so that when you are deciding what you want to do, the missions provide an unobtrusive goal for you to work on. There were at least six different days out of the 60 on which I played the game where the mission system dictated part of my playtime for that day.

Providing choices has been shown in previous research to increase intrinsic motivation (Cordova & Lepper, 1996). The game has also done an excellent job in balancing the trade-off of wanting to give the user many different goals without overwhelming them, as having too much choice has also been argued to have detrimental effects on motivation (Iyengar &

Lepper, 2000). *Rocksmith 2014* does an excellent job by always providing three options to the user in terms of missions. Once the player completes one mission, *Rocksmith 2014* will provide the user with a new mission to take the place of the old one. In addition the game also rotates the missions that are given, so that while some may be the same or are recurring, the game provides you with a different set of missions each time you start the full game. This small detail was important for playing this for an extended period of time, as there were times in playing the game where I did not like any of the three missions given. Once I came back to play on another day, Rocksmith 2014 provided me with a different set of missions, which then caused me to pay attention and to try to complete them. The mission system is a simple yet effective idea in that it does not force you to do what it asks, but tries to provide you with an easy set of gentle reminders on what it believes you should try to play, which empowers the learner to choose what they would like to work on.

Conclusion

Rocksmith 2014 has become one of the pre-eminent music games that has the simultaneous desire of helping people learn to play guitar. This paper has explored a number of techniques that *Rocksmith 2014* uses, namely the variety of content, the adaptive and learning-focused feedback, and the agency it gives its players to provide a viable alternative to taking guitar lessons in learning guitar. While the game is not without its weaknesses and limitations, discussions of those limitations is beyond the scope of this paper. From a well-played standpoint, *Rocksmith 2014* is both well done, and well read (Davidson, 2008) since it serves as an excellent next step in creating a model example of a music game that has the potential of providing a meaningful and utilitarian experience for budding guitarists while also serving as an artifact for the learning game community.

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INTERGENERATIONAL GAMING IN KERBAL SPACE PROGRAM

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Abstract

Kerbal Space Program is a detailed, challenging, and engaging simulation game just released in its final 1.0 version. The high fidelity of the simulation along with the breadth and depth of choices make the game interesting and represent a departure from the simplicity of modern mobile simulation games. Other elements of design, including the iterative, turn-based play, and required knowledge make it amenable to intergenerational play by providing roles for the knowledgeable parent and game-skilled child. This Well Played session by a parent and child duo walks through the game play itself and some of the interesting parent-child/child-parent interactions promoted by game play.

What is *Kerbal Space Program*?

The flight simulator was once a top selling game within the PC gaming industry. It has now largely disappeared, with Microsoft finally bidding adieu to the latest iteration of their *Flight Simulator* line in 2013. So why would a flight simulator that is more complex, less scenic and requires you to assemble your own flight vehicle from parts capture the interest of so many

Steam Early Access players? We're not sure, but we have some ideas, and we'll explore that in this Well Played session.

The game of interest is *Kerbal Space* Program, a "space program" simulator which recently exited a long Beta on Steam, and is now in version 1.0 (Squad, 2013). *Kerbal Space Program* (*KSP*) is a highly detailed simulation, in which you play the role of a space program director who must build rockets, staff the rockets, and ultimately pilot them with the goal of getting them into orbit, to the "Mun" or beyond. It is also a game that has some ideal elements for intergenerational game play.

The Challenge of Intergenerational Game Play

Most of the popular literature on gaming for parents focuses on warnings about addiction and violence. The first generation of video gamers has grown up (Eric) and now has children of their own (Oren and his sister, Maya). This should provide an opportunity for video games to bring parents and children together, but instead we see a growing divide around this medium.

Some organizations have stepped in to try to fill this gap. The Center for Games and Impact at Arizona State University (Crawford, 2013) has created guides for parents to better understand impactful games that their kids might play, while the Joan Ganz Cooney Center has published some research and more general guidelines (Chiong, 2009) that aim to help parents think about how to play games with their kids. These issues continue to receive popular press (Shapiro, 2013).

While games designed for multiplayer interactions may seem like the obvious choice for such collaborative play (and, truth in advertising, we like to play *World of Warcraft* and other multiplayer games together), single player games may also be the focal point of such interactions. There is an opportunity in such games for cognitive apprenticeship (Brown, Collins & Duguid, 1989), where a parent can model and provide coaching on particular strategies, while the child can similar model other

areas of in-game expertise. There is great research supporting the kinds of "in room" interactions between players that can *KSP* exhibits some interesting properties that make it a single player game that is still amenable to collaborative play.

First, the game is inviting. While there is complexity underlying everything that you do in the game, there is also engagement through feedback. While that feedback is occasionally positive, it is often negative. But the feedback loop is tight and engaging, providing the fodder upon which a parent can reflect, and coach their child to do the same.

Second, the game is really complicated. Did we mention that already? The complexity is not arbitrary but rather comes from the detailed physics modeling. The complexity invites participation from multiple participants. But the particulars of the complexity mean that the skills of a knowledgeable parent who might remember something about physics, or even what the rockets that the United States used to launch looked like, can help a child who brings with them proficiency in manipulating the 3D components of the rocket, and some piloting skills. This creates a well-balanced team where the child is both master and apprentice in different roles.

Third, the building stage is iterative and turn-based. There is a lot of opportunity for thought, reflection and input. One player might have the controls to browse through the available parts, while the other player still has many opportunities to critique design, suggest other parts, point to where a part should go, or cite previous data that might inform the current design. The complexity of the space, feedback and lack of time pressure all contribute to this process, as does the balanced failure state mentioned previously. In fact, without this dialog, the game is significantly more challenging. Taking out a new part from the inventory requires explanation and reflection when playing with another player (older or younger). This is an important learning opportunity for both players. The piloting stage is more real

time, but still may be slowed down to allow for similar interactions in this stage.

Failure is Sort of Fun

The game takes place on the planet Kerbin, an earth-like planet that is inhabited by Kerbals. It has several different modes including a *Sandbox* mode in which you have access to all of the possible parts and unlimited resources, a *Science* mode in which you are given scientific challenges and limited parts and sensors to accomplish those goals, and a *Career* mode in which successfully completed contracts and missions provide resources to build more complex space vehicles and equipment for increasingly challenging missions.
While many games might encourage players to start in a more bounded mode that provides additional structure, leaving the sandbox for later, *KSP* has such a steep learning curve that such constraints are not necessary in the initial phases. Unlimited resources and parts still inevitably lead to a rocket that at best explodes (Figure 1) shortly after launch.

Figure 1: One of the satisfying explosions in Kerbal Space Program.

Failure is a great way to learn, and an often overlooked design feature of games (Juul, 2013). For many good games, learning comes not only with success but with the oft repeated failure. Persisting through such failure requires (and maybe generates) grit, but games can also soften the blow of failure. The explosions in *KSP* themselves are quite satisfying and provide just enough incentive to try again. In addition to the explosion, however, the Kerbal pilot (Figure 2) is lost (temporarily) in such explosions. While it may not seem like a huge impact to lose a comical, easily replaced character, the attachment to the pilot is not insignificant. In many ways this is the key to the success of *KSP*; the failure state is well designed. Failure provides just enough negative feedback to cause the player to rethink their design and piloting, but enough levity that the failure isn't devastating.

Figure 2: A frightened Kerbal pilot.

And that is good, because there is a lot of failure in *KSP*. The game has an extremely steep learning curve. It turns out that building, launching, piloting and navigating a spacecraft *is* rocket science, and *KSP* makes that very clear. An initial challenge might be to build a simple rocket that can fly up a little into the atmosphere, eject the control module with the pilot inside and land safely back on earth. But there are many points of failure

in such a plan (Figure 3). Are the fuel tanks heavier than you have lifting power for? Did you remember to put a parachute on top and decouplers between the stages? Are the stages in the correct order? Are the engines the right match for the fuel tanks and sources? Are the aerodynamics sufficient to keep the rocket stable? There are many choices, which make the resulting rockets deeply personal, and equally as challenging to get it right.

Figure 3: A partially assembled rocket and some of the available parts.

Failure also provides a useful context for learning in *KSP*. Players love to test the boundaries of systems in games–they might try to jump off a cliff, hit their traveling companion, or race to the end ignoring the prompted goals along the way. In *KSP* such tests lead to important learning. Trying to create the largest explosion on the launch pad means figuring out what fuel tanks provide that potential. Getting a rocket to burn up as it leaves the atmosphere also requires a knowledge of fuel tanks, engines, and knowledge of the weak points to build into your rocket. While success may be slightly more challenging than failure, specific failures require building deep knowledge of the component systems in *KSP*.

The Devil is in the Details

Launching a rocket doesn't need to be this challenging. At least launching a simulated rocket doesn't need to be this challenging. But *KSP* has opted for a very detailed and accurate simulation of the physics and engineering (with a few exceptions like multi-body orbiting). Many games, even simulation games, opt for low fidelity simulation. *KSP* has adopted a detailed and accurate physics model, which I'm told (by aeronautics students) is quite lifelike. Getting better at aeronautics (rocket science) seems to make game play easier. This is a desired quality in a game designed for learning (which *KSP* isn't explicitly)–getting better at the underlying content should make one better at the game (and also hopefully vice versa).

The details span the physics, the library of parts, and the community that surrounds *KSP*. One can read up on the different aerodynamic properties, tolerances and propulsion properties of the available components. These are not mere labels, but instead are accounted for (Figure 4) in the simulation. There are supporting tools to help visualize how these properties combine to create a center of mass, thrust and lift.

Figure 4: A visualization of the center of mass, thrust and lift on a rocket (left) and detailed information about the properties which combine to create those (right).

Once the rocket is assembled it needs to be piloted. If the rocket is well built, the challenge getting it off the ground isn't too great. But once it is off the ground, getting it into orbit is fairly challenging. Once again the game does not shy away from accuracy introducing terms like *apoapsis*, *periapsis*, *prograde*, and *retrograde*. These terms may be intimidating, but an experienced player develops a feeling and intuition for what these terms mean, making them less scary if they can get that far.

The game has built in tutorials, but in their current state they are of fairly limited use. There is a very active community that does produce copious materials. There are wikis, tutorial videos, and mods that introduce new parts.

So who would play such a challenging game? Us.

Getting Started

We had played some of the early betas of *KSP*, but as version 1.0 approached we picked up the system again to play with a more evolved system. As a Steam game, it is available for play on many platforms–Mac, Windows and Linux. We built a Steam Machine (a PC running Steam OS) in the TV room to play games on the big screen. This also means that these games are played in a common household space, not solo in a private space.

Launching the near final version on the Steam Machine for the first time we tried to assemble a rocket from components that we could make sense of – a fuel tank, an engine, a command pod (where the pilot sits), a decoupler (to allow the stages to separate). Some of this knowledge came from previous experience and some came from watching rockets launch. Rocket launches are no longer the public display that they once were 40 years ago. So the idea of the multiple stages of rockets was somewhat foreign to the younger of us and required some *coaching*. But the interface prompts for this design, highlighting the sequence of events that your design will produce (see the lower right corner of Figure 4, where events 0-4 are noted ending with the parachute at stage 4).

The first rocket doesn't take too long to assemble once you find your way around the interface navigating pages of fuel tanks, engines, aerodynamic components and structural components. We built a rocket that looked pretty nice in that it looked like an actual rocket. The older of us sat on the couch and guided construction, while the younger of us had the mouse and keyboard to do the actual work (though we did change up this sequence periodically). We counted down towards ignition and launched the rocket. Somewhat to our surprise it took off. It got to about 10,000 meters before we had exhausted the fuel in the tank and and ejected the command pod which promptly fell back towards the surface with Bill inside. He didn't make it, as we had not sequenced the parachute correctly that time and he crashed into the planet's surface.

We made a few notes to *articulate* our strategies and took some time to *reflect*. First, we ought to resequence the parachute deployment. Second, the command pod didn't go anywhere, so it needed something to power it once the big tank was decoupled. The parachute resequencing was easy. But the tank and engine for the command pod caused some debate. Should it be a small tank and engine? The main tank got us up pretty far and pretty fast. Maybe we just needed a little boost to get out far enough to get into orbit. Or maybe we weren't that far out at all and we needed a much bigger boost. Would a strong engine and a small tank be sufficient? Or would that simply cause a little blip in our trajectory. These decisions required a lot of discussion, which needed evidence to support them. The older of us tried to come up with as much evidence as we could muster.

To make a long story short, the second, third, and fourth launches showed minimal progress (Figure 6) which provided us ample opportunity to reflect. We got Bill, Bob, Jebediah and the recently introduced (and long overdue) Valentina back to the surface safely a few times, but never made it much higher. That is when the younger of us said, let's scrap this and build a really big rocket since this little one wasn't taking us far enough. The older

of us could have given a rationale to support why this wouldn't work, but learning by doing is often a more effective way of teaching and parenting. So the younger of us built a great big rocket with massive engines, tanks and wings. Upon launch it didn't go anywhere. Some modifications got it as far as breaking apart on the launch pad and exploding in a spectacular fashion, so we stayed with that for a while.

Learning Through Research

As much as one can learn by doing, there also comes a time when that doing can be supported by Just In Time research. We knew that we should go to the Internet to find some resources that might help point us in the right direction. An interesting thing happened at this point. As is often the case while playing *KSP* in the TV Room, we were accompanied by Maya, who is in third grade. Maya immediately jumped to YouTube to get video tutorials on game play as she has often drawn upon before (copious resources for Minecraft come in this form). But the younger of us (also Maya's brother) felt this wasn't the right medium for getting the information that we needed. We needed to be able to scan through information, read about components, and tailor the information to our own needs. Videos (in Oren's words) just give you an answer without an explanation. Textual and graphical tutorials would be much more useful in this case. Maybe Maya learned that as well.

This is a great moment in any 21st century parent's life when they realize that their child has developed some fundamental media literacy skills. Indeed we found some textual tutorials that seemed reliable (on a *KSP* wiki) quite quickly and were able to use that information more easily than if we had to watch a whole video (many of which detailed all of the person's failures before success, or simply documented the success without any detail on how we could do the same thing). We learned some important things – turn early (don't wait until you are out of the atmosphere), use multiple stages to get rid of the weight of the

tanks after they are done, shoot for about 70,000 meters, which is the low end of orbit, and to get into orbit you need to accelerate prograde as you near the apoapsis. These terms required some research, which the older of us was able to do and reduce to common terms. While this didn't get us into orbit it got us very close.

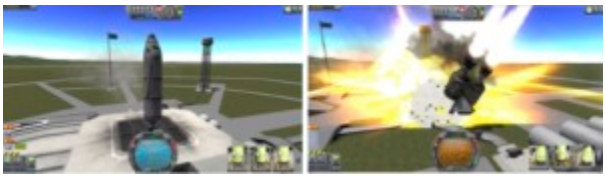

Figure 5. Some of our failed attempts in KSP where rockets were too heavy (left) or not stable enough (right).

Approaching Orbit

For several days we were stuck. We had the basic concepts down, but always seemed to run out of fuel as we approached the apoapsis (peak orbit). This caused us to scrap our designs several times. We played nearly each night and would exchange ideas over breakfast or dinner, and came in with ideas for different designs. How about if we had a giant first stage? We played with that idea for a while. While the older of us was very goal oriented and wanted continual progress, the younger of us was gratified by side goals that we just invented. Could we get the giant rocket to go straight down and crash into the launch pad? Yes. Maya tracked the death and survival of our four Kerbals over the first few days. We lost a lot of them. But some survived.

We did get the giant rocket to go straight up fairly far. And then we noticed something strange. When it got far enough out it exploded. What was causing this explosion? Dialog really helped here. Did it crash into something? Let's watch closely and look at the map view to see if there is anything that it could crash into. No, it didn't crash into the Mun. Did it burn up? While it got really hot at one point, the place where it exploded was far

from there. That shouldn't be the cause. Was it air pressure? The older of us helped devise a series of tests and we went through a list of tests and still couldn't find the cause. Then the younger of us got a bonus afternoon session (time to *explore*) and tested some more possible causes. It turned out it was the time warp. You can accelerate time in the game, since space travel can take a long time. If you accelerate time, the ship explodes. But if you put time back at the normal pace at about the place it typically explodes, the ship doesn't explode. The older of us attempted to explain how something like that could happen by saying that this "acceleration" actual skips some steps to make it so fast, and that in turn introduces error which can cause these kinds of things.

With that solved we went back to design, and importantly some additional research that the younger of us continued to do. That informed our design and we made some changes that had more to do with piloting than construction. But this piloting required additional steps. We took turns piloting and reading out the sequences of when to turn, how much to turn, when to use full throttle and when to throttle down. We had a lot of debate about the right speed to hit later in the launch. Would faster get us there faster? It might, but it will burn fuel that much faster. And going too fast introduces friction (which we sometimes saw as the ship nearly burned up) that we want to minimize to use as little fuel as possible. Eventually we found success.

Figure 6. A successful orbit in KSP is shown looping entirely around the planet.

This marked an important milestone and of course posed the next question – how do we get our Kerbals back? This process of design, build, and test (along with research in various forms) is a great way to interact and even allows for differential time spent on the game while both of us still feel a sense of progress and ownership.

Who We Are

Eric Klopfer is a professor and designer of educational games, with a background in simulations. He has researched and developed a variety of Science, Technology, Engineering and Math games, and sees *KSP* both as a way of bringing interesting detailed simulation games into formal and informal learning environments, and as a way of bringing legitimate adult and child roles into games. Oren Klopfer is a rising seventh grader who is a game player and also likes to dabble in game design. The duo has spoken together previously on a panel at PAX East. We will recreate what it is like to get started in *KSP* with the fun of failure, success and collaboration.

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HOW I LEARNED TO STOP WORRYING AND LOVE YOUTH AR GAME CREATION

Judy Perry, Bob Coulter, Juan Rubio, Chris Holden

Abstract

In the constructionist tradition, the creation of augmented reality (AR) games can be an effective method of engaging youth in informal learning around both domain-specific content as well as general design thinking. However, given the complex, interdisciplinary nature of AR games, the facilitation of programming in which youth create these games can be challenging. How do students from different age groups and backgrounds best learn this novel genre and the related design process? What are the most challenging issues? How can facilitators attempt to empower youth agency and youth voice in the context of a larger organization's educational goals and the desire for a "product" within a given timeframe? In this highly interactive session, panelists from diverse settings – including a botanical garden, an urban after-school program, and a university – shared insights from their efforts to empower youth via the creation of AR games.

Augmented Reality Games and Youth Design

Digital game design can be a catalyst for engaging youth with technology (Wang & Chen, 2010), creativity (Kafai, 2009), and design thinking (Kafai, 1996; Salen, 2007). A growing body of

game creation toolkits enables non- or novice programmers to craft their own games, albeit frequently the tools themselves emphasize game mechanics rather than game design (Hayes, 2008). However, especially with appropriate facilitation, students tasked with constructing games can thoughtfully marry subject matter and game mechanics, and in doing so learn powerful habits of mind (Coulter, 2012; Coulter, Klopfer, et al., 2012; Matthews, 2010; Salen, 2007), including iterative design through prototyping, user-testing, and revision.

Among the many genres of games, mobile augmented reality (AR) games, which use location-aware mobile devices to anchor gameplay within real-world locations, provide additional opportunities to engage young game designers in deep thinking about the affordances of a particular locale, including its landscape and topography, physical structures, and cultural and historical context (Klopfer & Sheldon, 2010; Holden, Gagnon, Litts & Smith, 2013). Since AR games combine a digital layer on top of a real-world environment, the game designer can add creative elements such as fictionalized narratives, player roles, and other data or game mechanics. In this way, the game design experience fuses fact and fiction, the real and the imagined.

Game designers need not be experienced software programmers. Using one of several freely available toolkits, such as ARIS and TaleBlazer, participants with minimal programming skills can author and implement their own mobile AR games.

Pedagogical Considerations of AR Game Creation

While game design can be integrated into formal and informal learning settings, this panel will focus on groups taking a more *informal* approach to learning (e.g., after-school programs, workshops, and summer enrichment camps), venues which are often a good fit for the multidisciplinary, complex nature of the game design process.

In the constructionist tradition (Papert, 1980), facilitators emphasize learning that emerges from the thoughtful creation

of artifacts. This creative process can vary widely from group to group given the many tasks that go into making a location-based AR game, leaving facilitators with many choices in terms of their pedagogical emphasis. Within each group, for example, efforts can vary widely and include such tasks as researching and organizing domain-specific content knowledge, articulating connections between the game and real-world locations and artifacts, designing game mechanics, engaging in prototyping and iterative design, gaining sophistication in programming, writing, and creating visual and multimedia game assets.

Diverse Audiences, Diverse Challenges and Opportunities?

Given the complexity of AR game creation, it is not surprising that facilitating youth creation of AR games comes with many inherent tensions and challenges: What happens when youth from diverse backgrounds and environments are tasked with designing AR games, a genre which is almost certainly new to them? How are youth able to leverage the affordances of the AR tool, while working within its limits? How can organizations promote youth ownership and youth voice within a game whose topic was selected by the facilitators to align with the host organization's mission? What are the advantages and challenges of different age groups (ranging from nine-year-olds to secondary and postsecondary) making AR games? How can creation of AR games change youth perception of place and their sense agency within their community?

Three panelists, working with distinctly different populations and physical environments, shared their experiences facilitating groups of students creating AR games. Bob Coulter (Missouri Botanical Garden) described experiences facilitating summer and weekend workshops in which elementary and middle school students created their own STEM-themed AR games situated in a botanical garden setting. Juan Rubio (Seattle Public Library) has facilitated multiple groups of middle and high school-aged urban youth in after school and summer programs, in which AR games

served as a design focus for youth voice and youth investigation of local neighborhood settings. Chris Holden (Assistant Professor at the Honors College of the University of New Mexico) has worked with post-secondary students to create interactive AR games as a means to explore diverse areas ranging from language learning to community action, from classrooms to museums and community centers. The panel was moderated by Judy Perry (MIT Scheller Teacher Education Program), a project manager and researcher for the TaleBlazer AR game platform.

Session Format

The goal of this 60-minute session was to give the audience a feel for some of the opportunities and challenges faced when facilitating youth creation of AR games. Following brief snapshots of AR youth workshop implementations from each panelist, participants played a short, simplified AR experience. Participants downloaded the TaleBlazer app to their Android or iOS smartphones or tablets and then loaded the game. The game required participants to walk around the room to locate virtual characters who embodied issues typical of those encountered by youth creating games and the facilitators of such groups. Examples of characters encountered included:

- **Artsy Art**: *"I've never done any coding before, and I'm not sure I'd be any good at it. But I'm a pretty good artist. Maybe I can just stick with art and leave the programming to someone else?"*
- **Abyss Abby**: "*Hi, my name is Abby. I'm an instructor here and I am feeling frustrated. No one ever seems to actually play these games. I don't even have time to walk around outside to play them when I grade them."*
- **Ambitious Alice**: *"I wanted to make a choose your own adventure, but I can't get it to work. I've been trying for hours and we're running out of time. What should I do?"*
- **Madison Backstory**: *"What if the game takes place in Hollywood*

which has just been invaded by aliens! But there are these bad guys with lasers. Yes, the game is about invasive species here in Madison – we just have to figure out how to work that in!"

Discussion

After the game, the moderator facilitated discussion among panelists based on generalized challenges embodied in specific characters' narratives as well as questions from the audience.

Artsy Art: Student Comfort Zones

Given its interdisciplinary nature, AR game creation utilizes a wide range of skills, including brainstorming game concepts, integrating specific locations or objects, researching content, developing characters, writing narrative and dialogue, constructing game mechanics, creating art assets, programming and debugging the software, and play-testing and revising the game. Many students naturally gravitate toward (or away from) aspects of the AR game design. For example, Artsy Art was reluctant to program as coding intimidated him, and he would rather create visual assets. However, facilitators often view these "low stakes" opportunities as ideal for novices to try on new identities and develop new skills. In this way, facilitators are faced with the challenge: *Students are usually interested in one aspect of the program: coding, art, storytelling. Do you let them focus on one aspect of game design or rotate so they are exposed to more disciplines?*

Based on his experiences, Rubio, whose students have largely collaborated in large groups to make a single game, argued for having students specialize, yielding outcomes that are more productive and offer opportunities for students to iterate, fixing problems they've identified. Moving them around, he explains, removes the continuity. Coulter's model of youth game creation favors students working in pairs. Even when one student is stronger than another in one aspect of game design, the pair model allows for legitimate peripheral participation in which

students see that it can be done. Holden finds that students do find ways for legitimate peripheral participation, and that the process can allow student leaders to emerge, who are comfortable for example with the tool usage, and give other teammates ways to learn in non-traditional ways.

Abby Abyss: Purpose, Process, Product and Performance

Augmented reality games are an emerging genre. This can be problematic for game makers of all ages who, desiring a more public showcase for their games, don't readily have opportunities to share the product of their efforts with a larger audience. *How important is this for audiences and facilitators? Is there a larger goal for the creation of AR games, and if so, is it linked to the public consumption of these games?*

Panelists offered their thoughts on ways and reasons to give games an audience, as well as the relative importance of that as an end goal. Rubio described using games made by earlier student groups as exemplars, arguing that it makes a difference to students to see something that their peers did, providing the projection of possibility. He also felt that sharing the game could be a very empowering experience, citing the example of former students at Global Kids, Inc. who invited First Lady Michelle Obama to share their game during a visit. Coulter maintained that games did not need to have a long shelf life to be meaningful, but rather that offering an opportunity for parents and others to see a showcase of student work (e.g., as the culmination of a week long summer camp) provided a workable and specific goal and gave it meaningful purpose. Holden proposed that AR game creation provides a vibrant learning opportunity, fundamentally different from traditional assignments (e.g., writing a term paper), which is simply done because it is assigned. Holden voiced concerns that AR games might be relegated as a new form of term paper, missing a valuable opportunity to use AR as an engaging tool to think with. He emphasized that AR game creation is only not about the product (in the way that students

typically view term papers as merely a product), but about the design process as well.

Ambitious Alice: The Fine Line Between Focus and Flailing

Students making AR games hit brick walls. They struggle to turn a vague concept into a playable game or wrestle with scripting code to implement a particular game mechanic. Students flail and facilitators watch. Sometimes, the struggle compels students to creatively solve problems, take a step back, and redesign their work. Other times, these struggles become a wasteful and frustrating time sink. The challenge is deciding when to let students flail and when to provide guidance. *How do facilitators decide when and how to intervene?*

Coulter has seen students dive too quickly into game implementation, missing critical early design steps. The software, he notes, is not necessarily well suited for the initial brainstorming and envisioning game flow. He recommends instead utilizing a storyboarding technique to work out the flow of the game prior to jumping into the AR software implementation, helping students clarify and hone their ideas before worrying about the particularities of the software. Also, by having game creators work in pairs, Coulter's students naturally draw out tacit design attributes by explaining and clarifying their ideas to one another. Rubio commonly sees students generate overly complex game ideas, and finds it appropriate to step in at this key moment to attempt to help students simplify their ideas. It's important, he notes, to make this process transparent to students so that they note the need to step back and focus on the core aspects of their game design. By giving students a designated opportunity to provide feedback, so that ultimately the simplified game is still their creation. Holden, who typically works with older college-age students, utilizes enforced playtests as deadlines to compel students to "go into panic mode and get something done." Traditional educational settings, he argues, do not prepare students well in terms of time

and resource management. Creating AR games on a deadline compels students to practice these critical skills and find a way through these roadblocks.

Madison Backstory: Games Beyond Narrative

The narrative of AR games is often one of its most compelling aspects. While the genre of location-based AR games may be new to students, they are familiar with genres and narratives tropes. Students often channel their enthusiasm for a project into generating a rich backstory. However, teams often have a hard time moving forward from their first good idea into a more playable game design. *How can facilitators help them proceed? When do facilitators intervene with criticism? And how strongly should they push it?*

Holden sees his role as facilitator and helping students move from narrative to mechanics. The AR genre is still, he argues, an avant-garde genre. Using the narrative as a staring point gives the students a place to start and build from. Rubio recalls many times when students pitched complicated narratives. He relies on questioning students' rationales and prompting them to justify their choices. Also, by introducing basic story arcs (e.g., the hero's journey or hook-hold-payoff), students can begin to tune their narratives into games. Peer feedback also plays a key role. Students are developing their identity as a game designer and the facilitator explains that designers need to revise iteratively based on feedback. In this way, the feedback and revision process is a way for students to move toward a more cohesive, playable game design.

Conclusions

Panelists shared a range of models in which youth successfully created location-based AR games. They all maintained that a rich learning opportunity emerges when youth are given the tools to creatively explore this new genre. However, panelists also

noted that because the genre is still new and because generally students are not well versed in the design process, the role of the facilitator is critically important in helping students move through the challenges of creating a viable game.

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HE WAS THE MOST...HUMAN: ETHICAL PLAY IN DOKI DOKI UNIVERSE

Kenneth Rosenberg

Abstract

Doki Doki Universe is an adventure game in which players control QT3, a robot charged with the task of better understanding human nature. The narrative context of this game utilizes the modeling principle to teach players about prosocial behavior. Gameplay consists primarily of two systems: object-oriented, fetch-quest puzzles and personality quizzes. Players' ethical agency is limited to dialogue choices and answers to personality questions that do not affect the overall story, but the game aggregates data from player choices in both systems to craft a personality profile which can be reviewed and modified. In this way, the game teaches reflection on empathy, logic, and personality traits. Though the game does not afford players a strong degree of moral agency, the game rules and world are still ethically relevant because they foster reflective practice of prosocial behavior.

Overview of Gameplay

Doki Doki Universe (HumaNature Studios, 2013) is an adventure game in which the player controls QT3, a robot on a quest to understand humanity and become more "human." The player

is tasked with traveling between different planets in order to acquire objects and deliver them to people in need. Each planet suffers from one particular human flaw, like pride, bullying, or pollution. The game's narrative explicitly frames the play experience as a quest for benevolent self-exploration, and the procedural rhetoric (Bogost, 2007) of the explore-interact-resolve systems is congruent with this story. The game positions the player as a helpful-yet-naïve individual, a perfect role from which to perform identity work (Gee, 2007) concerning interpersonal communication—and the game world is characterized by a series of discrete environments that act as caricatures of important ethical failings in modern society. As the innocent outsider, players are asked to observe, help, and assess the denizens of these flawed planets.

Object-Oriented Interaction

As a genre, adventure games are videogames in which players guide an avatar through a virtual environment with the objective of interacting with non-player characters (NPCs) to obtain items and information about how those items can interact with the player, NPCs, and the environment. Typically, players are forced to obtain these items in predetermined succession, with a sort of bait-and-switch progression. Objects that can facilitate progression to the next environment are withheld by an NPC until their goal is satisfied, that goal usually being the acquisition of an item possessed by another NPC—which, in turn, wants something that can only be obtained by speaking with yet another NPC. In this way, players are forced to speak with all NPCs and use logical induction to understand the correct order of interaction and item acquisition; only then can players assist all NPCs and obtain the items and information necessary to complete progress in a given environment. *Doki Doki Universe* is an adventure game that faithfully adheres to this formula. The only exception is that, unlike most adventure games, the planets

(levels) are discrete gameplay segments which is the player is able to visit and exit at any time.

Most adventure games feature multiple-choice dialogue options alongside object-oriented interaction, as a method of communication with NPCs. Though *Doki Doki Universe* has a few instances of player-driven dialogue, the primary mode of interaction is conducted with Summonables, collectable objects that are stored in a menu-like repository, which are used to ask NPCs about their likes and dislikes, and to fulfill their requests (see Figure 1). Many objects have overlapping attributes with other objects, so many Summonables —a rainbow, flower, or peacock—could be used to satisfy an NPC's request for "something pretty," for example. The game's lead designer Greg Johnson notes that most characters' desires are for objects that have two attributes, such as "scary and disgusting," to make the matching "a bit more interesting" for players (personal communication, September 8, 2015).

This object-oriented mode of interpersonal interaction keeps the game accessible to a broad audience and fosters an embodied perspective in learning problem-solving skills, where players map solutions directly onto objects in the world. Since the game requires players to choose objects which will help people in practice, problem-based thinking is situated in the context of each mission, but can eventually be abstracted as players discover general categories of objects which satisfy similar requests. After completing all of the primary goals of a planet-based level, the player is congratulated and reminded of the lesson—that is, the prominent "human" trait which was keeping the denizens from being happy. The player is then asked to identify which characters exemplify that trait. Answering this question, as with the other dialogue choices, results in a pop-up notification with personality assessment based on the player's choice.

Figure 1: Summonables.

Gestural Greetings, Character Profiles, and Dialogue Choices

Players are directed to speak to all NPCs in every level. Each NPC offers a greeting, followed by some information about themselves or another NPC. Players are afforded three gestural greetings—bowing, waving, and blowing a kiss—with which to address characters. These gestures are performed by moving the right joystick in different directions. Each NPC has their own greeting preference and offering the correct greeting increases the NPC's satisfaction rating, while performing the wrong gesture decreases their satisfaction. Once learned, usually by obtaining the information from another NPC, this preference information is available in that NPC's character profile, which is a repository of character-specific information that can be accessed by pressing a button while selecting that character. These character profiles also include likes, dislikes, and other information relevant to satisfying everyone's needs and desires (see Figure 2). Sometimes, dialogue choices are available to the player, but they do not appear every time QQT3 approaches an NPC. When they do appear, there are also always icons next to choice, indicating their intention, like a smiley face, question mark, devil-like face, heart, sun, bunny face, or jester face. The circle with a star inside represents honesty. In one situation, the symbol sits next to the dialogue option, "Not a chance. Sorry, but he's dead."

Personality Quizzes

In addition to the mission-driven planets, the world map also features asteroids, each of which represents one of several dozen five-question personality quizzes. Each question is simple and indirect. Instead of asking whether you consider yourself extroverted or introverted, the game might ask which planet you want to visit or which alien you would most like to encounter. The choices are all crafted to represent distinct personality differences in relation to the underlying psychological concept. After completing each quiz, the game interprets the answers and tells the player about his or her personality in general terms. The next several pages of the results screen provide a question-by-question breakdown of the player's answers, elaborating on the issue at hand in each question and explaining more specifically what the player's choice reveals about himself or herself (see Figure 3).

Figure 2: Character profile.

The game saves the results of each quiz, but players are free to revisit completed asteroids at any time to review and change their answers. There is no penalty for changing answers, so players have the option to explore alternate answers to read the game's explanations for each choice. This is useful, since the "answers" to each question are in fact cartoonish drawings that represent abstract concepts, with varying degrees of success—so,

if the player misinterprets the intention of the designers' application of a given drawing, players can go back and select the choice which represents the true intent of their answer. The ability to revise one's answers is also fruitful from the perspective of Gee's practice principle (2007), which states that a good game gives players multiple opportunities to rehearse the same actions to reinforce a lesson. Practice is also reinforced through the conceptual overlap between quizzes. Even if a player never returns to a quiz, completing all the quizzes affords practice at interpreting the picture-based choices, as well as practice at self-reflection in order to answer honestly. The results from players' answers are aggregated into a personality profile. This system is the most direct form of teaching in the game.

Expression and Reflection, Not Decision-Making

This game serves as an example of one way in which game designers can craft an experience that fosters empathy and self-reflection, as well as exploration of personality traits and moral issues. Most videogames featuring morality components tend to integrate them into the conversation mechanics. In *Doki Doki Universe*, the morality components are built into the characters and environment, while the player acts as an observer with little moral agency. Where a game like *Mass Effect* (BioWare, 2007) asks players to enact their moral code, *Doki Doki Universe* asks players to express their innate preferences and tendencies in an attempt to show the player more about themselves. The flawed planets are not meant to be compelling as moral dilemmas, but as exemplars of moral issues. Instead of showing consequences through consequentialist, cause-and-effect branching narratives, the game's personality quizzes use players' intuitive responses to create a detailed personality profile to promote self-reflection.

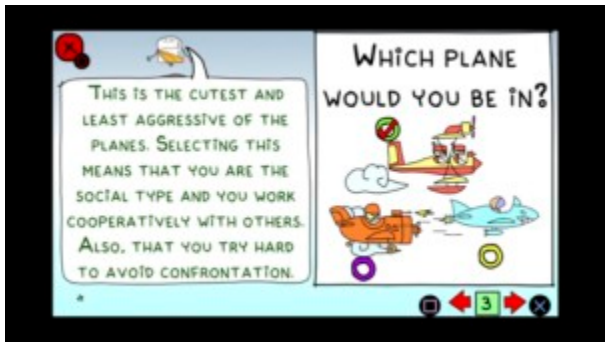

Figure 3: Analysis of personality quiz question.

Affording Ethical Play, But Not Moral Agency

Though the narrative context of *Doki Doki Universe* is ethical in nature, the game's rules do not afford any significant moral agency to players. They might choose the "naughty" response to a question, but while this results in some pop-up feedback about the personality trait revealed in such a choice, the significant actions in the main game, the only means of progression and achievement, are completing the item-driven fetch quests—that is, delivering the correct Summonables to the appropriate NPCs and helping them with their problems. Players can actually "pick up any character and repeatedly pound them into the ground, or fling them in the air or knock them over with an earthquake… [but] the only way to advance in the game was via positive ethical behaviors" (G. Johnson, personal communication, September 8, 2015). In order to make any progress on the planet-based levels, players have no choice but to fulfill the requirements of the narrative: to guide QT3 on his one-way journey to being a prosocial robot who learns to better understand humanity.

However, some item-matching solutions are open-ended enough that they "posed interesting ethical questions—for example, you were free to give the Eskimo woman or the African man a partner of the same gender and they accepted that" (G. Johnson, personal communication, September 8, 2015). But,

while this allows the player to create a pairing of their choosing, it simply opens up more options for players and expresses a particular ethical design framework, rather than posing a moral dilemma to the player. Zagal (2012) states that videogames can best encourage reflection on ethics and moral reasoning by creating dilemmas which force players to experience emotional tension, such as guilt or shame, and consider tough practical decisions, ideally in a sandbox environment which allows players to make a range of choices which are presented with ambiguity until the consequences are revealed. In this game, there are no tough decisions, nor are the levels constructed to be anything more than a superficial sandbox in which the player can manipulate only objects, not the ethical behavior of QT3—at least, not to a degree which encourages players to "consider the ramifications of alternative actions" (Zagal, 2012, p. 67). Still, even without moral agency, the game's content is ethically relevant because the narrative context and systems of play are designed to convey a message of prosocial behavior, and can be used by players to reflect on their own ethical viewpoints. When the little snowman is afraid to tell his father that he hates the cold, the player will likely identify with the NPC about the more general issue of being true to oneself while also respecting family tradition.

Procedural Rhetoric: Helping Virtual People

"The representational aspect of a computer game–its visual and narrative elements—is of secondary importance when analyzing the ethics of computer games. Games force behaviors by rules: the meaning of those behaviors, as communicated through the game world to the player, constitutes the ethics of computer games as designed objects" (Sicart, 2009, p. 23). The mechanics of *Doki Doki Universe* afford ethical play in context of the narrative but, stripped of its aesthetic shell, the abstraction of this game's rules and play are simply item acquisition and matching. Through the lens of Koster (2004), which defines a game's lessons

by its rules and systems, the game could be viewed as amoral. However, this perspective is overly reductionist and fails to account for the principles of interpersonal communication—the "meaning of those behaviors"—which bind the otherwise disparate abstract elements of objects and characters. When looking at the rules, behaviors, and emergent narrative through the lens of procedural rhetoric (Bogost, 2007), it becomes apparent that the social nature of the item-matching is inextricably linked to the abstract mechanics of the game. The procedural aspect of play might be described in terms of abstract relationships between objects, but the rhetorical aspect necessitates an understanding and appreciation of the NPCs as pseudo-social agents. Because it is impossible to effectively gain and match items without reading the dialogue and interpreting the needs and desires of the NPCs, the game's ethical framing cannot be ignored.

Players are embodied agents, bringing their perception of reality to bear on their conceptualization of virtual game environments. Sicart (2009) uses the example of falling in videogames, which we tend to consider a bad idea, unless the game (or genre) indicates otherwise. "This comparison [to the real world] implies that there are actually connections made between the real world and the game world in the mind of the player" (Sicart, 2009, p. 34), which he argues are on a deeper level than simply connecting the physics of reality to those in a virtual environment. Players also consider themselves embodied beings in the game world, having social agency–and responsibility–in the context of the game narrative. This is consistent with a communication theory known as the "media equation," which states that people naturally personify inanimate objects and that mediated stimuli are treated—on a subconscious level—the same as non-mediated stimuli (Reeves & Nass, 1996). Therefore, there is still prosocial behavior embedded in the rules of the game, even if there is not any strong affordance of moral agency. And, since prosocial behavior is the narrative and procedural focus of

the game, the play in *Doki Doki Universe* should be considered ethically relevant.

Ethically Relevant Play

According to Sicart (2009), it is essential in analyzing the ethics of videogames that scholars consider players not as passive audiences, but as empowered users of media who engage with the ethics of the game rules and world. Despite the lack of in-game agency afforded to the player, people are competent, reflexive, naturally ethically-minded beings who are able to interpret the subtext of a game just as well as its explicit narrative—and decoding play is part of the player experience. "Games can have ethical affordances because they are designed *and experienced* by moral agents immersed in specific cultural situations and times" (Sicart, 2009, p. 41). The player, explicates Sicart, is the missing piece to defining the ethical gameplay of a computer game. It is not enough to analyze the rules of a game to understand its ethical design; the researcher must also account for the ways in which players will interpret the rules, react to them, create new rules, and psychologically process the experience. In other words, it is not only the writers and readers of Well Played papers who are capable of analyzing *Doki Doki Universe* as a game with a prosocial ethical nature. Even the average player is acutely aware of the one-sided moral message in the game and is able to understand that message, while also negotiating the in-game identity with his or her real-world ethical framework.

Players are tasked with learning what NPCs like and do not like, and the basic ethical value of prosocial behavior is directly connected to gameplay progression. However, there is a light failure state in that players are free to pick up, toss around, and pound NPCs—or even create a small earthquake that leaves them dazed. So, the game allows for a degree of moral agency, but within a tightly constrained moral space that affords immorality only as far as is necessary to foster prosocial behavior. The

primary form of ethical play has little to do with exploring a full moral spectrum as an agent in the world. The ethical nature of play arises from how the game is designed and how players interpret and reflect on that design. Players are meant to enact a specific type of ethical behavior, then reflect on this behavior: how it mirrors their real-world behavior, what it means to perform such behavior within the game, and why the designers would encourage this specific type of ethical play. And, in this respect, the game succeeds in raising questions that foster reflection. Why does Samantha (the girl pictured above in Figure 2) prefer bowing but not being thrown around? Perhaps it has something to do with her love of "evil" things and a desire to be dominant in social interactions. Likewise, the NPC made of rock enjoys earthquakes; this more obvious connection makes it apparent that the game is designed to signal social cues that require interpretation. More significantly, the game itself is based on ethical belief that it is an essential part of being "more human" to know how to learn about the personalities and intentionality of others. As designer Greg Johnson noted, "learning what characters liked and didn't like was part of the game, and I suppose you could say there was a bit of a philosophical statement about the relative nature of morality behind that as well (personal communication, March 10, 2016).

What makes a videogame ethically relevant "is not about how we inhabit a world, but how that world allows us to inhabit it" (Sicart, 2009, p. 36).The world of *Doki Doki Universe* is as straightforward as its rules, focused entirely on a universe filled with planets of fallible people who would benefit from the good deeds of a helpful robot. Aside from minor transgressions—like choosing to wave in greeting when you know an NPC prefers a bow—the game world and the actions presented to the player do not afford any exploration of strongly antisocial behavior. It is not in spite of this rigidity of rules and the simplicity of the world, but precisely because of such rigidity and seeming unidimensionality, that this game is interesting from an ethical

perspective. "Ethically interesting games are those in which the existence of the rules predicts a game world in which ethical values can be deduced from the actual gameplay" (Sicart, 2009, p. 37). The ethical values of *Doki Doki Universe* are very easily deduced and, within the boundaries of such values, players are encouraged to explore and reflect.

Identity Work and Reflective Practice

The negotiation of the tripartite identity—the player, the character, and the player-as-character—is what makes *Doki Doki Universe* a tool for identity work (Gee, 2007) and transformational play (Barab. Gresalfi, & Ingram-Goble, 2010). Again, the game presents an overtly prosocial narrative, and players must read NPC dialogue and respond to their needs and desires by earning and presenting the correct Summonables to each NPC. In role-playing as a character who listens, empathizes, and helps, the game teaches players how to operate as a purely benevolent social agent. This is a departure from the real world, where even the most prosocial personalities must confront the dilemma of not having enough time or resources to help people as much as they would like—and, unfortunately, these and other extreme circumstances place "good apples" in "bad barrels" and force people to compromise on the ideal of perpetual and universal prosocial morality (Zimbardo, 2007). This is also a unique opportunity in terms of videogame worlds, since most games involve aggressive mechanics—like shooting—or at least selfish goals, like collecting every item in a game world. So, at least in the colorful and simple world of *Doki Doki Universe*, players can experience this morally-pure identity, incorporating it into their repertoire of experience while also comparing and contrasting it with their own real-world views and experiences.

There is a tremendous amount of feedback in *Doki Doki Universe*, from the "thank you" of an NPC when delivering the correct Summonable, to the results of the personality quizzes. Each NPC has a satisfaction meter which can be affected

positively by listening and helping, or negatively, by offering the incorrect greeting or by throwing objects at them. Not only is the constant stream of multilayered feedback a good example of the practice principle, one of the principles of good learning in good game design (Gee, 2007), it affords the player opportunities to learn in the moment and reflect before and after each gameplay session. This game fosters reflective practice (Schön, 1987)—not of moral agency, like in *The Walking Dead* (Telltale Games, 2012; Rosenberg, 2014)—but, simply, of empathy and logical problem-solving skills. Feedback systems have been designed to alert the player to how NPCs interpret various choices and actions, and to analyze the player's behavior and provide meaningful personality assessments.

Potential Applications for Education

Through each of its systems, *Doki Doki Universe* addresses empathy and reflection on many levels. The personality quizzes foster self-reflection, while the primary gameplay—problem-solving on planets—has players learning to listen and help others, while still being cognizant of their faults. The environments, the planets themselves, each suffer from one particular flaw in human nature, which is demonstrated by its name, design, and the NPC denizens who personify these flaws. The game's design addresses individual, interpersonal, and societal ethics—through quizzes, quests, and environments, respectively. As a console game designed for entertainment, prosocial learning is a secondary goal and does not fit neatly into any existent context of formal education. However, teachers might consider using this game in an informal learning session, perhaps in an after-school gaming group, where it could be used as an interactive text in a practicum-type setting, to teach children about empathy, logic, and prosocial behavior. In fact, the game's designers have "heard from quite a few parents that they've found it useful as a jumping off point for discussions with their kids" (G. Johnson, personal communication, September 8, 2015). For older players, *Doki Doki*

Universe is an opportunity to be reminded of those lessons and to practice them in a stress-free, winnable context.

Conclusion

Games are inherently ethical because players bring their ethical frameworks to bear on all experiences (Sicart, 2009), but this game explicitly integrates prosocial behavior into its narrative and gameplay, which means that the game isn't just ethical, it is *about* prosocial behavior (Bogost, 2007). The game is blatantly moralistic and this is both helpful and limiting when designing a game for ethical play. Since completion of the game is dependent on acting in a prosocial manner, players are not afforded moral agency and the game is therefore not optimally ethical in the way that Zagal (2012) claims games should be ethically compelling. The game presents opportunities for reflection, but player agency is limited to just one type of ethical behavior. However, for this reason, its potential as a tool for self-reflection and reflective practice is greatly enhanced. It has been shown that play in a virtual environment as a prosocial agent increases the likelihood of prosocial behavior in subsequent, real-world tasks (Rosenberg, Baughman, & Bailenson, 2013). The role-play in this game fosters identity work and aligns with the principles of transformational play and *Doki Doki Universe* should be considered an informal learning context in which players can learn to be more… well, human!

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PREPARE TO SUFFER WITH PAUL & MO: LET'S PLAY AS WELL PLAYED

Moses Wolfenstein, Paul Berberich

Abstract

This paper explores the premise that a written document alone cannot fully capture and convey what it means for a game to be well-played. It postulates that the Let's Play (LP) narrated video format is an optimal modality for documenting a well-played video game. The authors explore this idea through their own playthrough and LP of Dark Souls by FromSoftware. In addition, they examine how the LP can serve as a record of learning.

Form Meets Purpose

This paper begins from a simple premise: A Well Played paper like this one is certainly sufficient as a form for exploring and analyzing the meanings found in the experience of (video) game play, but a written document alone cannot fully capture and convey what it means for a game to be well-played. In the case of video games in particular, the last 7 years have given rise to a modality of expression that is uniquely suited to the exploration of the concept of a well-played game in the form of the Let's Play (LP) video. We further argue that in some sense every LP is a representation of a well-played game, and that in addition an LP can also be a record of learning. We explore these concepts

through the discussion of our own LP of *Dark Souls* (FromSoftware, 2012) that was underway at the time this topic was first presented at GLS 11, and is still ongoing at the time of this publication. First we will examine some of the particulars of the LP medium, but before that let's consider the history of the Well Played format in brief as experienced by Moses.

Moses's first encounter with the Well Played format happened in 2007 at the Games+Learning+Society 3.0 conference. At that conference, Drew Davidson offered the first such session at GLS and the first *formal* offering in the Well Played format with Well Played: Interpreting Video Games (Davidson, 2007), later to be published as Well Played: Interpreting *Prince of Persia: Sands of Time* (Davidson, 2008). The Well Played format has since become well established with 4 volumes containing 91 articles published in the *Well Played Journal*, and live sessions at 4 different academic conferences in 2015 alone (Davidson, 2014). However, at GLS in 2007, it's fair to say that the audience hadn't seen anything quite like a Well Played talk, especially in an academic setting. In particular, a talk that not only included an example of game play, but actually revolved around it was revolutionary. It fundamentally changed the nature of the discourse in the conference hall at the Monona Terrace that day by physically situating the talk around the play experience.

While the affordances of the conference setting allow for a particularly intimate engagement with both game and player, the ecosystem of contemporary media that includes video games provides opportunities for sharing the play experience and the player's perspective. Through sharing video records of play with player narration online, there are unique opportunities for players to express how their playthrough is well-played from their perspective, and potentially to receive commentary and critique from other players on the quality of their particular play experience. With this in mind, let's consider the Let's Play medium in brief before exploring the authors' current experience with this medium as they play through *Dark Souls*,

what the implications of this experience are for the Well Played format, and how an LP provides a particularly intriguing record of learning in the context of a well-played game.

The Rise of Let's Play

Despite the natural mapping between playing video games and digital video recording, the Let's Play phenomenon actually started out as text and image based posts on web forums. Although we could not find a definitive account of where and when the format originated exactly, there appears to be consensus that it was popularized on the Something Awful Forums around 2006 (Jong, 2011) using the term Lets Play (abbreviated to LP), and that by 2007 video based LPs began to appear on those forums (Fjællingsdal, 2014). The increase in the ability to both generate and view user created video content that YouTube and later Twitch.tv enable has since cemented video as the primary format for LPs. In order to provide a marker indicating the extent to which the LP genre has proliferated, a search we conducted using the compound term "let's play" on YouTube in late June of 2015 yielded over 18 million results.

The rise of LP videos as a medium has inevitably led to a corresponding rise in academic inquiry around the phenomenon of LPs. A preliminary review of current work indicates that researchers have taken up the topic of LPs to further an understanding of identity (Jong, 2011), the position of LPs as paratexts (Mukherjee, 2012), the experience they offer their viewers (Glas, 2015), their position in relation to other formats of streamed gameplay (Smith, Obrist, & Wright, 2013), and the opportunities they present to the field of media studies and the practice of game development in general (Fjællingsdal, 2014). However, none of the work we found explores the two themes that we discuss here of how each LP is fundamentally an attempt from outside the academy at presenting a well-played game, and how the LP can stand as a record of the player's learning.

Dark Souls: A Proving Ground of Suffering

Having disposed of the matter of historical context surrounding both the Well Played and Let's Play formats, we can now get down to the exciting part of this inquiry: the experience of a well-played video game. As noted at the start of this paper, the game in question is *Dark Souls*, by From Software (2012). It has been described by reviewers as "…a thoughtful, atmospheric, and mysterious role-playing adventure that challenges your mind and your mettle." (VanOrd, 2011), "…vicious and unforgiving in the challenge it presents." (Zimmerman, 2011), and, "…Groundhog Day but in the ruins of a fantasy realm…an exercise in self-abuse and language lessons, the eventual player commentary an inventive catalogue of insults and blasphemy…Zelda in Hell." (Smith, 2012). In short, *Dark Souls* is an extremely difficult game.

You might have noticed that the last delightful snippet of reviewer commentary is dated a year after the previous two. This was not simply because Adam Smith at Rock, Paper, Shotgun was late to the party, but because the version of the game he was reviewing (*Dark Souls – Prepare to Die Edition*) was the version released at a later date for Windows. This is the version of the game that we have played for our LP, or more precisely, the version of the game that Moses has played while Paul has served as host, commentator, peanut gallery, and sometimes guide, having already beaten the game himself. The version of the game has some bearing in regard to the history of each player with the game, and it had direct implications for the GLS 11 conference presentation and for this paper as discussed below under "A Playthrough in Process".

In terms of game genre and game mechanics, *Dark Souls* can comfortably be described as a third-person action RPG. The player creates a character at the game's start that technically has a character class (e.g. fighter, sorcerer, etc.), however unlike in many RPGs the player is not ultimately limited by this initial

choice in terms of the capabilities the character can develop. Rather, the player has the opportunity to invest one point into various character statistics at each level, and these points in turn serve as the basis for the character's ability to wield various weapons and magics, all of which are available to the character if they have sufficient attributes and if the player is capable of tracking them down in the game world.

Souls

Levels in *Dark Souls* are attained through the expenditure of the common currency of the game which are the titular souls. With each level attained, the cost of the next level increases, preventing the player from simply optimizing the character by equally distributing points across stats. In addition, it is noteworthy that souls can be spent on other things in the game including durable and expendable items that can be purchased from merchants, training of certain skills by specialized NPCs, and upgrading weapons and armor with blacksmiths.

There are two basic sources for souls in *Dark Souls*. The most common source is a temporary form of the currency which is attained through killing enemies. We refer to this source as temporary due to the fact that if the player's character dies prior to investing these souls, the earned souls are left at the "bloodstain" (i.e. the site of the player's death), and if the player dies again prior to retrieving their lost power, the accrued souls are lost as well. Souls can also sometimes be found as items distributed in the environment with distinct names (e.g. Soul of a Nameless Soldier) depending on the quantity of souls they contain. These are kept in the character's inventory, and can be accessed by the player at will, although doing so causes them to release their contents such that they can be lost if they aren't spent before the player dies.

Humanity

In addition to souls, *Dark Souls* has another form of currency called humanity. Humanity also comes in two forms in *Dark Souls*. It can be found as a durable item on some enemies, and it can be attained in a temporary form much like souls by killing certain enemies (this is referred to as "liquid humanity"). Humanity plays a specific role in the game. The player's character exists in a state of undeath referred to within the game's lore as "hollowed". However, while the character is never truly human, it can become externally human by expending the relatively scarce resource of humanity.

Being human in *Dark Souls* confers certain benefits and carries a specific risk. When human, the multiplayer function of *Dark Souls* becomes active. This allows players to "invade" one another's games. When a player's game is invaded, the state persists either until one of the two players is dead, or until the invading player decides to leave in the event that they give up on attempting to track down the invaded player. The invaded player cannot leave the particular zone they are in so long as the invader is present thereby preventing further progress. In addition to the multiplayer mechanic, being human provides the player with a better chance of getting useful items to randomly drop off of enemies.

Bonfires

Humanity also plays a role in relation to bonfires, another essential mechanic in *Dark Souls*. Each area in *Dark Souls* has a bonfire that serves as a respawn point for the player. The player doesn't respawn at the closest bonfire, but rather at the last bonfire they rested at. Certain resources are restored to the character each time a player rests at a bonfire. Specifically, after resting the character receives a full supply of Estus Flasks which are the game's health potions, and also a gets a refill on all magic spells the player has gained the ability to cast. However, enemies

in the area also respawn when the character rests with the exception of the bosses and mini-bosses who remain dead after the player has successfully killed them. In addition, a player can expend a humanity in order to "kindle" a bonfire which results in an increase to the number of Estus Flasks restored by resting at that particular bonfire. In order to kindle a bonfire, the character must first expend a humanity to become human if they aren't already.

Lordran

While there are many aspects of *Dark Souls* that we could easily spend numerous pages describing, including the ostensible goal initially presented to the player (to ring the two Bells of Awakening), there is one final characteristic of the game that is worth mentioning before discussing our LP and how this particular playthrough can be regarded as a well-played game. The setting of *Dark Souls*, known as the Kingdom of Lordran, is in many ways a uniquely designed game world. On the one hand, the scaling difficulty of encounters over the course of the game certainly carries it's own special quality. However more importantly, as Lordran unfolds, it is a fundamentally connected space. That is to say, as the player progresses further in the game, the various zones are not so much discretely designed levels as they are part of a larger geography. New locations in the game will frequently offer new perspectives on locations the player has been previously, as well as glimpses of the possible locations that lie ahead. In this respect, the process of discovering the Kingdom of Lordran in *Dark Souls* is fundamentally different from the more typical experience of exploration in a game where a new zone or level certainly holds new perils and promises, but also carries with it a feeling of being a fundamentally separate place from the player's prior location.

A Playful Pairing

In *The Well-Played Game*, Bernie DeKoven addresses the topic of the play community and its essential role in ensuring that a game is well-played. In contrasting a play community and a game community, he writes, "The nature of a play community is such that it embraces the players more than it directs us toward any particular game." (DeKoven, 2013). Moses and Paul have been part of such a community more or less since they first met in 2007. The community of play they belong to is locally defined, in large part because it embraces both analog and digital games (the former requiring physical co-presence). Its membership has fluctuated over time, and at times it has intersected with other play communities, but it has retained at least three players at its core including Paul and Moses for the duration of its existence. Currently it consists of over a dozen members, although it is rare for all of the active members of the community to play a single game together at the same time.

Embracing players and supporting a mutual enjoyment of whatever games it takes up has been an unspoken rule of this play community, even though neither Moses nor Paul had read DeKoven's work until 2014 and 2015 respectively. This has led the community through a wide range of games across an array of platforms. The only genre of games the community hasn't picked up directly is organized sports, although members of the community do intersect directly with the specific game community of the Mad Rollin' Dolls flat track roller derby league. All of this is to say that Paul and Moses have always engaged in playful activities together with the sort of intentionality and willing attitude that DeKoven describes, and that our foray into both *Dark Souls* and LPs can be characterized in this manner.

Nested Play Communities

In the context of producing an LP of a single player game, the

nature of both playing well and of the play community are fundamentally changed. Playing single player video games does not require active membership in a play community, although as James Paul Gee (2003) asserts, membership in an affinity group where practices of play are shared has long been a hallmark of video game play. In the context of our LP Prepare to Suffer with Paul & Mo, Moses and Paul have entered into a broader affinity space around *Dark Souls* that Moses has previously theorized as a nested community of practice (Wolfenstein, 2011) in that video games, LPs, and *Dark Souls* can all be considered as connected affinity spaces, some of which can be characterized as play communities. Considering both players and audience of an LP as members of a play community certainly squares with DeKoven's construction of the idea, and furthermore Smith, Obrist, & Wright (2013) have specifically explored both performer and viewer as co-participants in streaming gameplay with each role benefiting from unique incentives.

While we cannot directly speak to the experience of any of the small number of viewers of our channel who are not us since we have only spoken with one audience member who began viewing the series following the GLS 11 presentation, we can speak to the composite play activity which is recording an LP of a game. There is no doubt that play in the context of an LP consists of both actual gameplay and commentating as Smith, Obrist, & Wright describe. In fact, Paul's playful engagement with the activity is built almost entirely around engaging in speculative commentary, offering color, and in certain moments offering advice to Moses. However, by both explicit and tacit agreement between us, advice given by Paul has been extremely limited, as part of our mutual consideration of what makes a first playthrough of a game like *Dark Souls* well-played is severe gating around the player's knowledge of what lies ahead, and limiting reliance on external sources for strategy and guidance except under relatively extreme conditions. At the same time, since an LP is fundamentally performative and designed for consumption

by an at least theoretical audience, Paul has intervened to offer advice on a number of occasions to either make sure Moses explores an opportunity that might only be accessible in an extremely limited way, or simply to prevent him from wasting an inordinate amount of time such that it would be frustrating for both us and our viewers.

A Playthrough in Process

For all of these reasons, Moses does not currently know how much of the game still lies ahead. For those familiar with *Dark Souls*, as of the last LP recording session the character Johnson has scaled Sen's Fortress, but has not yet beaten the Iron Golem guarding the gate at the top. Prior to this point, Johnson was stuck for a significant period of time in Blighttown, including at the time of the GLS 11 presentation. However, not long after the conference, Johnson defeated Chaos Witch Quelaag and rang the lower bell of awakening. In addition, Paul and Moses have noted that the time Moses has spent playing *Bloodborne* (FromSoftware, 2015) has clearly transferred into increased skill in playing *Dark Souls*. That said, there is no guarantee that Moses will actually finish *Dark Souls*, as he may potentially quit the game in frustration, or "go hollow" to use the parlance of the broader *Dark Souls* community. However, Moses has shown perseverance in prior difficult games (Wolfenstein, 2012), and has in no way tired of the repeated deaths of his character Johnson. Paul believes that based on his progress thus far, Moses stands a reasonably good chance of completing the game, given the perseverance he has shown in guiding Johnson through Blighttown and Sen's Fortress.

Gating of information is certainly a key characteristic that has gone into Paul and Moses's consideration of this playthrough as well-played, but it is not the only one. Another essential consideration in the analysis of this particular playthrough of *Dark Souls* as a well-played game is the pacing of the play sessions. This has varied significantly from the manner in which

video games are more commonly approached. Paul has hosted all play sessions, and the saved game that Moses is playing is attached to Paul's Steam account. As such, we have met exclusively at Paul's residence (with the exception of the sessions recorded live at GLS 11) and have played by and large once a week. Moses has avoided purchasing a copy of *Dark Souls* for himself despite his deep excitement about the game, which has provided him with no additional opportunities to practice the game, and no chance of playing past the furthest point we have reached in recording Prepare to Suffer with Paul & Mo. As noted above, due to the release of *Bloodbourne*, Moses has gained an opportunity to practice some of the core skills of the game since both games use a very similar control scheme, but they are also distinct, and the designed challenges of both the levels and boss fights are also by and large unique even if some general principles apply to both (e.g. locked strafing, conserving stamina, etc).

Drunk Souls

Finally, we would be remiss if we did not note that one regular (although certainly not constant) feature of our local community of play is the consumption of alcoholic beverages, especially craft beer, while gaming. Our engagement with *Dark Souls* has not strayed from this tradition of our play practice, and while the significant majority of LP sessions have begun in a sober state, beer has consistently been consumed most evenings, and in some instances play has taken place in a mild to moderately intoxicated state. This has led to the impromptu labeling of some LP sessions as "Drunk Souls" when it becomes clear that the play, commentary, or both have become impacted by alcohol consumption. Perhaps needless to say, drinking while learning to play a game can impact both the learning curve and the performance.

A Record of Learning

We began recording Prepare to Suffer with Paul & Mo in mid September of 2014. We've recorded between one and six episodes on any given evening with a mean of 2.45 recordings on a given day. As of the submission of this paper for publication, 36 of the 46 play sessions recorded between the start of the LP and early December have been posted to the Prepare to Suffer with Paul & Mo YouTube channel. 10 of the episodes recorded during that time were accidentally recorded without sound, and 1 was recorded without video. While one of the episodes without audio has subsequently been dubbed over and added to the channel, the other nine have been reserved for analysis and potential future use. In addition, Paul and Moses have continued to record LP sessions since then (although the recording schedule has been somewhat hampered due to scheduling), and have a this point recorded well over 100 episodes in total including two episodes recorded at GLS during the Well Played talk, and two episodes recorded as a "side story" for the special Well Played video issue currently in preparation in which Paul plays through the early portion of the game and Moses provides commentary.

Prior to GLS 11, we were definitively the primary audience for our own LP as Paul remarked in one of the earlier episodes, and as we have discussed both when the microphone has been on, and when it has been off on numerous occasions. However, this in no way diminishes one of the key points of this particular paper in considering the value of an LP as a representation of a well-played game in relation to learning. Although we have only barely begun analyzing "the tape" with performance analysis conducted across the first 28 recordings, one thing that has become immediately evident is the manner in which this record serves as an opportunity to chart Moses's progression in understanding the game systems of *Dark Souls* in terms of combat mechanics and strategies, the underlying models of the

game as expressed through its statistical systems, and the geography and lore of Lordran.

One example of the analysis enabled by use of LP video as a record of learning can be found in coding the number of deaths that befell Johnson in each episode. Over the course of the first 28 recordings, Johnson died an average of 1.79 times per episode. However, it's particularly notable that while there is no direct correlation between character deaths and general indicators of progress such as encountering a new zone or encountering a boss for the first time, recordings where Johnson dies a lot (4 or more times) do tend to be connected to activity in certain areas which are either known to be difficult (e.g. the Gargoyles fight), or presented unique challenges to Moses based on his early play style which incorporated rolling too frequently (e.g. the lower exit from the bonfire in the Lower Undead Parish) that resulted in Johnson's falling to his certain doom. It is also worth noting that there is no clear correlation, at least in the earlier recordings that have been analyzed, between sobriety level (scored on a 3 point scale from sober to moderately inebriated) and character death.

While tracking frequency and even types of character deaths in relation to things like map locations represents one fairly direct way in which an LP can serve as a record of player learning, Prepare to Suffer offers some additional data that provides an interesting example of an artifact being used for this type of analysis. While it has been fairly rare for Paul to provide Moses with bigger tips or suggestions, the provision of small tips during play has been a staple of interaction that has proven easy to track. In the early recordings, Paul would regularly remind Moses to make use of Johnson's pyromancy skill and to wield a weapon with two hands when he was trying to focus on melee combat. A quick glance shows that Paul began reminding Moses to use pyromancy early on starting in episode 5. These reminders happened an average of 1.25 times per recording across the first 28 recordings. Paul didn't begin reminding Moses to two-hand

weapons until significantly later, and unfortunately the specific point is impossible to determine as it happened some time between recordings 17 and 26 for which the audio was lost. That said, as analysis of the recorded video continues, we will expect to find a rise in reminders to two-hand a weapon while pyromancy reminders are likely to remain at a similar level until episodes recorded in late 2015 after Johnson had been through the cruel lessons of Blighttown. After that point, this lower level coaching has become extremely rare, and instead the topic sometimes serves as an inside joke in later episodes with Moses providing the verbal "reminder" if he catches himself playing without attending to these core tactics.

Overall, in watching and analyzing episodes of Prepare to Suffer with Paul & Mo, we have observed Moses make clear and distinct progress, and at times regress, over the course of play. Especially early on, the time delimited nature of play sessions contributed directly to back sliding between the end of one evening's play, and the start of play the following week. In fact, Moses can in some instances be seen to regress and advance in his competency as a player over the course of a given evening, sometimes demonstrating less ability as the night progresses, sometimes improving steadily as the evening proceeds, and in still other instances alternately improving and declining in performance.

Live at GLS 11

The session at GLS 11 consisted of three parts. First we provided some minimal background on the topic of *Dark Souls* and engaged in an abbreviated review of the LP videos on YouTube, tracing Moses's progression through the game thus far, and highlighting some key moments in his learning as he has negotiated the Kingdom of Lordran. Following this, we conducted a live recording of a new episode of Prepare to Suffer with Paul & Mo. To conclude the session, we opened up the room for discussion. Since we accidentally started the session

half an hour early, we recorded an additional episode for the LP after our conversation with conference attendees had come to a natural conclusion.

In the session, we explored the details of Moses's progress through *Dark Souls* up until the current point in the game. Topics discussed included: learning the controls, *Dark Souls* combat tactics, understanding the weapons system, and development of geographic awareness in Lordran. Particular attention was given to the dynamic of game discovery and what it meant for Paul and Moses to look at this LP as well-played through the lens of DeKoven's *The Well-Played* Game, and in the context of their shared experiences with other games. One audience member also asked about more traditional narrative lenses for giving a game a close read. Paul noted that reading the literal narrative of *Dark Souls* is somewhat complex since there is very little direct exposition in the game, with the story embedded instead in item descriptions, snippets of optional dialogue, and the character of the environment itself. This is point that has been mentioned numerous times over the course of the LP as moments of discovery have given rise to brief conversations about the story From Software is trying to tell, and even some limited speculation on the relevance of this story to the gameplay experience. We also provided an example of how Paul provides a soft form of coaching during play, pointing to this sort of game-play as a type of distributed cognitive activity. In the first live episode, Paul suggested that Moses explore the area around Firelink Shrine for a potential path back to the Northern Undead Asylum, primarily because the lighting in the theater made it somewhat difficult to make out key details in some of the darker areas in the game like Blighttown, but also because he recognized an opportunity for this form of exploration that Moses might otherwise not have stumbled upon.

The Suffering Continues

As we alluded to above, Prepare to Suffer with Paul & Mo has

continued steadily since GLS 11. Over the course of that time, Moses and Paul have suffered joyously through Johnson's return adventure to the Undead Asylum, his meanderings through (and ultimate victory in) Blighttown, several humorous encounters with a hydra that ended in its demise, and of course the traversal of Sen's Fortress. It's worth noting that at the beginning of both Blighttown and Sen's Fortress, Paul uttered something to the effect of, "This is where the real *Dark Souls* begins." This has left Moses wondering whether he has as of yet actually started "the real "*Dark Souls*", or if this ultimate beginning is simply continuing to retreat in Zeno like fashion as he progresses through the game. Kidding aside, while Moses doesn't know exactly how much of the game lies ahead of him, Paul has provided him with the sense that he has likely passed the halfway point. Perhaps more importantly, Paul stated at the outset that his character went hollow on his first playthrough of the game on Xbox 360, and that should Moses successfully complete that challenge, he will let him know what it was. In this regard, Moses knows that at least one challenge still lies ahead of sufficient difficulty that it could well cause their suffering to end in failure. In the meantime however, due to the technical limitations around uploading videos to YouTube from a standard account with an ISP, there remains a significant mass of Prepare to Suffer that has yet to be viewed by anyone other than us. As such, whatever fate awaits Johnson, any viewers of Prepare to Suffer willing to endure the ongoing travails will eventually have the opportunity to view numerous sessions as we slowly make them available on YouTube as time and bandwidth permits.

As an addendum, it is worth noting that our live recording session and conference talk at GLS 11 seems to have had some unanticipated consequences. On the one hand, Prepare to Suffer with Paul & Mo went from 7 subscribers to 13 after the conference. Individual videos have also seen a spike in viewership at the time of and since the conference in excess of the numbers that the subscription increase might indicate.

Perhaps more interestingly, Paul ran into one of the session attendees since the conference and was informed that our session inspired them to start a let's play of their own. We find this last phenomena particularly interesting in that we believe it unlikely that the existence of our LP in its own right would have been likely to inspire anyone to make one of their own. Rather, there seems to have been something transformative about the practice of giving a well played talk that reframed what the activity of doing an LP might be like, at least for one individual. We can hardly think of a more gratifying result of playing a game and recording an LP than inspiring others to participate in this same playful activity.

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"ANY% NO SKETCH GLITCH": SPEEDRUNNING FINAL FANTASY VI AND EXPANDING "WELL PLAYED"

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Abstract

This paper seeks to look at expanding the idea of well play in a community that gathers around a game and redefines the goals of the game for themselves in competition. Focusing specifically on *Final Fantasy VI* (*FFVI*), we can see that the practice of speedrunning reflects deep gaming literacies, the commitment to community goals and norms, the creation of new games out of the elements of existing ones, and a transition from casual to serious leisure activity. Speedrunning *FFVI* reflects redefinitions of the boundaries of what we consider the games we put under study, as well as the role of "well play" in our understanding of them.

Introduction

Historically, the "Well Played" format has focused on the ways we can understand the "well play" of a single game through an analysis of its design and how players experience it. Understanding different *kinds* of "well play" have thus been secondary issues for this community, and often sidelined in favor of discussions of the gaming artifact and the designed nature of

it. In this paper, we wish to shift this discussion somewhat, and look at a type of well play that spans hundreds of games, systems, and genres: The "speedrun." A speedrun is a form of play where the player attempts to complete the game, from beginning to end, in as short a time as possible using various tricks, glitches in the game, and efficiency tactics.

In speedrunning *Final Fantasy VI* (*FFVI*), we can see an expansion of well play that illustrates a dedication to learning through productive failure (Kapur, 2008) and a commitment to "serious leisure" (Taylor, 2012). The social task of speedrunning is one wherein players compete to take apart a "well' designed game, and remake new competitive play experiences from it. As players fail productively and in a persistent social context, they illustrate that members of a game's participatory culture (Jenkins, 2006) are able to redefine what counts as "well play," and can give us a window into how gaming literacy evolves in a productive, appropriative social context. Speedrunning also gives a window into the practices of a group of players that value competition and collaboration equally as part of engagement with games, and, we suspect, as part of process of learning with games. As we will show through an analysis of speedrunning in *FFVI*, speedrunning captures an exciting tension between the designer(s)'s original presumed intent and the active engagement of game players as well as the movement from a casual pastime to a serious leisure activity that for some even becomes a primary vocation.

(A note for the reader on the use of first person and the joint-authored nature of this piece. "I" will refer to the first author (Cook) and their experiences playing, watching, and learning how to speedrun *FFVI.* The second author (Duncan) contributed to the piece by contextualizing the experiences of Cook in a broader landscape of research and the relevance of these experiences.)

Final Fantasy VI

Final Fantasy VI is a game that I have been playing since its US release in 1994. I was totally enthralled by the storyline that was far beyond the story of any games I had played to that point, which had mostly consisted of simple goals such as; save Princess Peach (*Super Mario Bros.*), or defeat the evil wizard, Werdna (*Wizardry*). In *FFVI,* the game starts with the play in control of Terra, a Magitek soldier of the empire searching for a magical being called an "esper" in the town of Narshe. The town resists fighting you every step of the way. Finally, when Terra and her two solider mook (low level soldier) companions reach the esper, the soldiers are killed while Terra interacts with the esper in an unknown manner. She wakes up in a house in the town, where she is helped to escape by a treasure hunter Locke. From there the story spans into a rebellion versus the empire saga, with the player's party traversing the world in order to save it. The part that sealed the deal in terms of the game's longevity and significance for me was that after beating the Atma Weapon on the Floating Continent, one did not get to face Kefka, the presumed final boss, but instead has to *run* from him as he upsets the balance of the world and destroys most of it with fire and lasers. The second half of the game focuses on one's band of companions trying to find each other in order to take one last fight to Kefka, as the world lays in ruins around them.

While *Final Fantasy VI* is neither the first game to be speedrun, nor is it the most often speedrun, it serves as a useful game to look at with speedrunning in mind. It offers many categories of runs that showcase different features of the game and different understandings of various mechanics and glitches. Furthermore, *FFVI* offers insights into how games are routed, and how the community works together to not only push the limits of the game, but to form a deep understanding of how and why various glitches, bugs, and sequence breaks work at a technical level. This allows the runner to apply knowledge of one bug in a different

situation because of the technical understanding that is not present in some other games. As a long time player, I was at least familiar with some of the programming issues with the game. As will become significant for this analysis, I was aware of a significant glitch around the skill "Sketch," that I had never explored since it had the possibility of erasing my save files. The transition from being an expert-casual player to one who is dipping into the world of speedrunning is marked by my changing understanding of the game. I went from knowing that there are certain bugs in the game, to understanding the bugs at a technical level and being able to exploit those bugs in ways that are advantageous to my play.

Learning to Run *FFVI*

Two years ago, a friend turned me on to an online charity event "Awesome Games Done Quick" (AGDQ; https://gamesdonequick.com/), and Summer Games Done Quick (SGDQ; see Figure 1, below). During these events, speedrunners run their games live in order to raise donations for charity. Games Done Quick's mission is to bring together high level speedrunners to raise money for the Prevent Cancer Foundation and Doctors Without Borders. I had never encountered speedrunning, and had not yet experienced communities of speedrunners with personalities running the games. I saw that they were running *FFVI* as the capstone game for the event and watched the entirety of the six hour run. The thought that the game could be beaten in six hours was a completely alien idea to me, and as a consequence, I started watching the *FFVI* speedrunners on their Twitch.tv channels and studying how they could beat the game in such a short amount of time.

Figure 1: A screen capture from the YouTube broadcast of the SDGQ 2014 finale game, FFVI. The runners are known as "Essentia" (second from the left) and "Puwexil" (third from the left). (Image taken from https://www.youtube.com/watch?v=JsZELoI33T4)

While watching, I noticed several practices that speedrunners participate in that may help them push games to their limits. First, they clearly *collaborate* with each other, sharing notes, having open practice sessions where they invite each other to watch, and giving each other advice. Second, they often try to *experiment* with new strategies, new routes through the game, and new ways to use glitches within the game. They rely upon *shared knowledge* about the mechanics and details of the game which allows them to understand how to best use the various exploits and glitches within the game. These clearly overlap, but also present distinctly different community practices, activities, and resources that inform the learning of how to speedrun *FFVI*. Finally, at the highest levels of speedrunning there is competition between runners that serves to push the runners to perform at their highest levels and does not display, in my experience, the same degree of toxic interaction that I have found in other competitive environments.

These speedrunners view the game differently, no longer is the game a simple form of leisure or escape, it is now more akin to serious leisure that T.L. Taylor discusses in her 2012 book

about the professionalization of e-sports. While speedrunning has not achieved the general recognition or professionalization of e-sports many of the practices are similar. While it is unlikely that a game like *Final Fantasy VI* may become more than just a game or make a living, and it is regardless a venue for competition with some similarities to commercial e-sports. The game becomes less a idle recreation, and more a series of challenges that need to be overcome as quickly, and more importantly, as safely, as possible. Speedrunners show similar levels of dedication to professional e-sport athletes, in that they practice for hours each week, and are dedicated to honing their craft.

I decided to try my hand at speedrunning *FFVI,* and, as of this writing, I have yet to complete a full run of the game. I have failed close to a hundred times, with each failure teaching me something new. As Kapur (2008) posits, each failure has been productive and taught me something new and added to my skills and prepared me to handle other situations that arose later in the game. In Kapur's (2008) study, he found that those students who had been given ill structured problems to begin with had greater persistence on later ill structured problems than did students who just received well-structured problems. The speedrun itself is certainly an ill structured problem when compared to regular play of the game — according to Kapur, the more one works on ill structured problems, the more strategies and more success one has in further ill structured problems. While there is a linear storyline that must be followed in *FFVI*, there are many parts of the game that are skipped, avoided, or otherwise ignored by speedrunners. When learning this run, I have relied heavily upon videos of runs from other more experienced runners, as well as written notes that elucidate specific equipment and magic choices.

The first time I attempted a run, I failed on the very first battle, but did not realize I had failed for at least 20 minutes. For the first few battles, the goal is to have Terra gain all of

the experience from the battle. One does this by exploiting the runaway mechanic and having the two soldier mooks in the party run away. These battles are basically un-losable; however, if one does not win in the correct way, the rest of the run is affected. When I failed at this, I didn't think about how much that one mistake would snowball into wasting a significant amount of time about fifteen minutes later in the run when I was not able to kill certain enemies because I was at too low of a level. I had not even considered the impact of a battle that I had not given conscious thought to since the first time I had played the game. For each battle, there is a set amount of experience points that are distributed evenly among all of the party members that are still alive and in the battle when it ends. There is a way to get the two mooks to run away from the battle leaving Terra alone to get the full amount of experience points. I started to look at the game itself differently. No longer was it just one of my favorite games that I could play on autopilot for simple enjoyment and nostalgia. Now it was a challenge that I had to overcome. I came to understand the game in a deeper and more complex way. Battles required a conscious decision to fight or not. Do I need the experience points or should I save the time? Do I really need to take the minute it would take to go into town and shop for the new armor or should I skip it? When should I go into the menu to make changes? All of these were choices that had not been conscious choices in my play before, but now I now recognized as essential.

I reset the game. The next time I reached the first battles, I tried to use the runaway mechanic, and failed. I reset again. I took a moment to watch a video of a run before I went back to make another attempt. The third time, I successfully ran away properly and Terra gained the experience points she needed. This moment showed me that there are reasons behind certain choices that I didn't fully understand at first and my *failures* helped me to understand the runaway mechanic to a depth I had never achieved before. After the initial stumbling blocks

around the first three battles, I hit fairly smooth sailing for about two hours. I was not on a particularly good pace, nor was I embarrassing myself. I even had a couple of people watching me stream on Twitch.tv. I started to slip back into my old mindset of complacency. I know this game, I have this under control, though I suspected I was about to fail again.

The next major boss, a battle against two cranes, was coming up, and I feared that I was going to fail again. This battle requires performing a trick to manipulate a set of spinning slot reels to get a certain combination (7-7-7) which kills all of the enemies on screen instantly called "Joker Doom." This was a trick that I had the declarative knowledge to understand (had seen performed many times, and could explain the set up) and ostensibly knew *how* to perform, but had never done so. To the shock of no one at all, I failed again and had to reset as the cranes killed me before I had a chance to try the trick again. I tried this battle ten times that day before I decided to stop, realizing I needed to practice this one particular trick many times.

What was beginning to change for me was my depth of understanding within the game. No longer would being a casual player who could play through the game automatically be enough. I needed to understand the game and how the various systems within the game interact with each other. For example, understanding that (7-7-7) would kill the enemies and that if I used a certain item (echo screen) in battle that I could set up the trick was enough. I needed now to know why it worked. Using the echo screen in battle advanced the random number seed in the game by 28, which was the number that is needed to allow Joker Doom to happen. However, failing at the slots advances the random number seed as well. Now I need to understand what seed I am on, how to manipulate that seed and why certain actions are performed if the trick is missed. My understanding moved from I can tell someone how to do this trick, to I can perform this trick and explain the systems behind it as to why it works.

It is not simply adequate to have some abstract understanding of the game, or some static gaming literacy and knowledge to be a successful speedrunner. It takes a deeper understanding of the mechanics of the game that are often hidden or otherwise obscured. Nowhere in the game is it explained that Terra's level has an impact on the level of the next characters to join your party. Nowhere in the game is the random number seed explained or even visible normally. Speedrunners experiment and fail often to figure out these hidden rules of the game in order to be successful, and through this experimentation and failure gain access to the code and systems behind the game's playable exterior

Glitches, Bugs, and Exploits

As an example of understanding *FFVI*'s systems, there are four times when the cast of characters is broken up into more than one group that the players can switch between to complete the dungeon, or guard their leader. Switching between parties in the game is instant, and can be triggered as a character is moving from one tile on the map to another. However, when one combines this with the fact that certain tiles are coded to trigger certain events (such as boss battles or cut scenes), one can skip those events, or walk through non-player characters by switching groups as one is moving onto the trigger tile. When one switches back to the party on the trigger, the trigger does not fire as it is coded to fire upon entry of the tile, not upon standing on it or exiting the tile. This combination of an understanding of how characters move along the map tiles along with the understanding of how certain tiles are triggers for events came together for the community recently and allowed for two major bosses to be skipped that previously were thought to be unskippable.

And so, we can see that one of the most critical elements of a speedrun is the sophisticated use of exploits, glitches, bugs, and mistakes that made it into the final game. These can capitalize

on the interaction of multiple gaming systems (as in the above example), as well as the exploitation of outright bugs in the game. When I played *FFVI* as a child, I read in *Nintendo Power* and other gaming magazines that one should *not* use the ability Sketch because it could break the game and erase my save files — certainly, the worst fate for a kid who has dedicated hours upon hours to the game! However, in the era of game emulators, players of *FFVI* have honed their understanding of this glitch through repeated safe failure finding the ways that previously disastrous glitches could serve a useful purpose for players attempting to speedrun the game.

In particular, glitches can be used to help redefine paths through a speedrun, but also how they illustrate collaborative community practices in doing so. Speedrunners have taken a certain glitch in *FFVI* — the "Sketch glitch" — and spent a great deal of time and effort cracking it open. As a glitch is an uncorrected bug wherein the game executes code that it was not intended to, this can lead to a variety of situations including hard locking or freezing, "soft locking" where the game is stuck and cannot go on but the player can still interact with the game, or other unintended consequences. It is the unintended consequences that are most exploited by speedrunners.

For instance, in *FFVI*, using the skill Sketch, an effective speedrunning approach is to insert a certain spell in the 28th slot of the magic menu that causes the game to execute code that can fill your inventory, or transport you to different locations within the game. With careful manipulation, this glitch can bring a player past several dungeons and bosses, saving a great deal of time on a potential speedrun. Using emulators, players were able to iteratively test the glitch dozens of times, changing one aspect at a time in order to determine what aspects of the game affect the glitch, then shared the results online with other runners. There are dozens of trial and error moments that helped to determine that it was, in fact, exactly the 28th slot of the magic menu that impacted the glitch, not the 15th item, 4th item, or

an item one's inventory or another factor. The Sketch glitch is a bizarrely specific glitch, but one that led to significant impact on the *FFVI* running community. This is perhaps the most "differently well" form of play within the *FFVI* speedrunning community, insofar as the runners are taking a glitch that for many people ruined their casual play experience and using their understanding of it to improve their own play.

In speedrunning communities there are several categories for running, which illustrate the impact that this single glitch has had on the competitive practices around speedrunning the game. These come from a deep understanding of the game and community debate and discussion about what should and should not be allowed for a given run. Since some glitches or bugs so fundamentally change the gameplay experience and route through the game they have crafted different categories of speedrun. For *FFVI,* these include runs that allow or disallow the Sketch glitch and require different amounts of completion of the game. "Any%" is a category where the runner completes the game however they can getting only what they need along the way, and there is no restriction on how much content of the game may be skipped. This is further broken into two categories: With and without the Sketch glitch. Atop this, there are 100% versions where one needs to recruit all characters and gather all of the magical stones called espers. There are also glitchless versions of Any% and 100% runs, which disallow any forms of glitches. This allows for several different possibilities for a run, and allows for choice when it comes to which skills or set of skills will be used.

In Mia Consalvo's *Cheating: Gaining Advantage in Videogames* (2007), we see that gamers often use knowledge of gaming exploits and "cheats" as ways to broker participation in gaming communities. Gamers employ such knowledge as "gaming capital," akin to Bourdieu's social capital. In the community of speedrunners of *FFVI*, the knowledge of cheats, bugs, and glitches is a form of legitimate gaming practice and, we argue, problematizes how perspectives on these subversions of the

design of the game can transform our understanding of what constitutes the "game" here. Where is the "game" in the speedrun of *FFVI?* Is the game *Final Fantasy* itself, or the attempt to get a quicker speedrun, or the experimentation that leads to the finding of new glitches? Or is it the social enterprise that drives the entire community of speedrunners to probe, prod, and further break apart the "well played" *Final Fantasy VI* toward new aims?

As the speedrunning community creates categories for competition as long as competitors adhere to those rules, we argue that they self-organize around *multiple* forms of "differently well play" — completing 100% of the game, completing the game with the Sketch glitch, or completing the game without the Sketch glitch, just to name a few. Speedrunners impact other players and the social community of the game when they find a new trick or a new glitch, and can radically alter the route through a given dungeon or the entire game, and thus redefine what *FFVI* is for multiple groups of players, and multiple skill levels.

And, there are some interesting contrasts with Consalvo's work here. Specifically, Consalvo (2007) argues that speedrunners "cheat" to achieve time compression, focusing on the goal of the player to simply complete a game in the context of a presumed form of "well play" (defined by the presumable goal of the game, defined by its designer). People play games, in Consalvo's framework, in order to complete a designed system, and experience "the game" as it was intended to be played by whomever created it Speedrunners are clearly not exploiting glitches for the same reasons, or at the very least, these forms of time compression have very different social consequences. Speedrunners of *FFVI* are not compressing time to get to the story faster, or to see what happens next — they already know what happens next. They compress time for the express purpose of compressing time in a *"secondary game"* of sorts (the speedrun), which reframes ostensible "cheating" in that they are breaking

the rules of the game as defined by the game's designers, toward the competition a new game that serves the social purposes of the speedrunning community. They are sidestepping the intended and expected rules of playing the game as defined by the designer in order to redefine the goals of the game for their own purposes as a community.

The Social Context of Speedrunning

Speedrunning can thus be looked at as the product of a deep gaming literacy born out of engagement within a gaming-related community. Zimmerman (2009) refers to gaming literacy as the understanding of systems, play, and design, and clearly these forms of gaming literacy are put into practice by effective speedrunners. The runners of *FFVI* spend time playing the game, but also watching and discussing the game and strategies with each other. They work together — and compete — effectively to further their gaming literacy and the meaning(s) that they construct out of these game activities revolve around how to complete it the fastest within a given category.

Not only do speedrunners work individually to develop their own gaming literacy practices, they share this information with other runners, as well as their viewers who may become runners. Many speedrunners do not see their viewers as simply observers or audience members to interact with (and for some actually a source of income), but as potential fellow runners and future participants. The audience is not simply passively taking in the experience that the runner shows them, but are actively interacting with the runner and the other audience members. For example, in the winter of 2014, a major speedrunner of *Final Fantasy* games (known online as "Puwexil") hosted an event that was a relay race between four teams to complete three *Final Fantasy* games as quickly as possible (Puwexil, 2014a). During this race, there were many viewers who participated in the stream by watching and talking. Later that year, in the fall, Puwexil hosted another relay race between four teams and the

same three games (Puwexil, 2014b). While some of the runners were the same, there was at least one runner who saw the first relay race and decided to take up speedrunning and was able to participate, and do quite well, alongside several current and former world record holders.

How they evince gaming literacy is shown by the speedrun itself. *FFVI* is a game designed to be played over many play sessions and many days and to take tens of hours. The speedrunners play with the rules and expectations of the game, and turn them on their head, with multiple potential intents, including social affiliation with others in the speedrunning community, and perhaps other subversive goals. By finding the most efficient ways to go through each dungeon, and defeat each boss and in some cases, avoid them entirely, they are playing the game in ways that may not have been originally anticipated.

Finally, we should note that speedrunners exhibit game *design* literacy, in part in how they construct various categories for their runs. Since these are all user defined categories they have to choose what constitutes completing the game, and when to start the timer as well as what bugs or glitches can and cannot be exploited within the run. In a way they are creating a new game for each category of run. There are potential differences in gameplay, both in terms of how long, and in terms of what parts of the game are experienced between an "Any%" run and a "100%" run, to the point that they are nearly different games. When a new glitch or bug is found the community is faced with deciding what category the glitch should feature in: Will it be allowed in established categories or does it change things enough that it gets its own run category? This is how distinctions between "Any% No Sketch," and "Any% Sketch" came about and there is the possibility that new categories will be created in the future.

The community of speedrunners around *FFVI* supports each other in their productive failure efforts. Not only are runs that are going well streamed online for an audience, but also practice

runs, and a great number of failed runs as well. The audience has come to expect that sometimes the runner fails, and that this is acceptable and a part of the learning process. Runners watch each other, both as a way to learn and try to refine their own practice, but to also support their fellow runners during their potentially-productive failure. Sometimes, it is the audience who is interacting with the runner via text chat that will point out aspects the runner may have missed. Not only do they support each other, many of them compete with each other for the world records in various games and categories.

Often, when a runner is done streaming for the day, they may encourage their current viewers to "raid" the stream of another runner to show support for the other runner, while potentially also providing a show of one's fanbase reach. It appears that while there is competition for the record there is also a sense of collaboration to see how far the game itself can be pushed. At the end of a recent world record run, the runner "TheLCC" discussed with his viewers where they should go next, stating that "once we soft lock the ending we will go there [to watch another stream]" (TheLCC, 2014). Even after setting the world record for *FFVI,* TheLCC brought his viewers to another runner's stream, bringing the popularity of his stream as a world record holder in a popular game with other streamers, while also perhaps displaying in a new venue one's impact as a streamer.

Conclusion

Speedrunning video games is a space where a community has gathered and redefined the very nature of what it means to play these games. The communities of speedrunners have created rules, structures, and competitions to support a multitude of goals, elevating the game to "serious leisure." These players illustrate a large and deep gaming literacy, as well as a commitment to productive failure and collaboration, creating spaces where not only is competition a potential motivator to improve, but it is also something that brings people together.

Speedrunners, we argue, have taken a single player game and made it into a communal experience rife with performance, with the subversion of original design goals, and deeply imbued with gaming and computational literacy.

Finally, we wish to note that the practice of speedrunning illustrates that there is more than one way to play a game "well," and to push this community to consider how speedrunners problematize the notion of "well play." Speedrunners have crafted and refined a different form of "well play," one that privileges their community goals and norms over the narrative, mechanics, and dynamics of the original game's designer(s). Speedrunners share this revised sense of "well play" with others in their communities, work on demarcating and categorizing its different forms collaboratively, and use their play not only for entertainment, but also as a vehicle to enact change upon the world through fundraising (the "Games Done Quick" events). Speedrunning has not only helped players rediscover old favorites, but to potentially motivate players to improve upon their understandings of game mechanics, bugs, glitches, and exploits both within *FFVI,* but also within other games as well.

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INGRESS WELL-PLAYED: CITY AS MMO

Elizabeth Lane Lawley

Abstract

This paper describes player experience for *Ingress*, a geo-local, mobile augmented reality game created by Google's Niantic Labs. *Ingress* incorporates aspects of both pervasive, alternate reality (ARG) and massively multiplayer online (MMO) games. However, unlike many ARGs, *Ingress* is not focused on a specific time-limited period, or linked to a single real-world event or location. And unlike a typical MMO, play in *Ingress* is geo-spatially limited; players must be physically proximate to game elements in order to interact with them. Using game mechanics similar to those of many MMOs, *Ingress* provides for a range of gameplay, based both on user play preferences and level of experience and achievement. with a focus on the importance of social, community, and collaborative aspects of the game. Participants in this session are encouraged to install the *Ingress* application on their iOS or Android phone so that they can participate in a live gameplay session.

Introduction

It is difficult to assign *Ingress* to a specific genre, since it incorporates aspects of alternate reality games (ARGs), massively multiplayer role playing games (RPGs), mobile augmented reality games, and pervasive games. Developed by Niantic Labs, a team

within Google, *Ingress* was released as a closed invitation-only beta on the Android platform in November of 2012. After a full year in beta, *Ingress* was made publicly available on Android in November of 2013, and an iOS client was released in July of 2014. While Google has not released specific player numbers, in May of 2013 there were estimates of approxiately 500,000 players (Schmidt, 2014), and by September of 2014 a *VentureBeat* article estimated the number of players worldwide at approximately seven million (Takahashi, 2014). As of the writing of this article, the Google Play store shows over five million downloads for the game software, which does not include downloads by iOS users via iTunes. It is unlikely that all downloads of the game have resulted in long-term active players, but it is definitely the case that the game is actively played in communities across the globe, from large cities to tiny villages.

For most players, the first introduction to the game comes from the website at *Ingress*.com, which contains only links to download the mobile client, and a video that provides a teaser for the ARG narrative behind the game. The video describes the presence of "portals," located primarily at artistic and cultural sites, which emit a new form of energy called "exotic matter" (XM). Only with a "scanner device" (a smartphone running the *Ingress* software), can humans see the presence of these portals. Minimal information is provided to potential players beyond this broad-strokes backstory, and while a link to a tutorial video is buried at the end of the initial video introduction, the relatively small number of views on that video (~320K at the end of February 2015) would indicate that it is not a primary source of information for many players. The design of the main *Ingress* site, which has no links to other resources, makes it clear that the next expected step is to download the client software.

The New Player Experience

Upon launching the *Ingress* client software, the player is asked to log in using their Google acccount; no other login options

are allowed. The terms of service for *Ingress* very clearly limit users to a single account, which must be linked to their Google account. To get full access to inventory space in the software, users must also verify their accounts via email, but basic play is enabled as soon as the user enters their Google credentials.

Once a new player has logged in, they are presented with a series of introductory screens that provide a simple introduction to the underlying game concept, and then require the player to select one of two factions in the game (see Figure 1). The faction descriptions provided are minimal, but players nonetheless must select one knowing that their choice is, as the interface tells them, "final." In fact, it is possible to change factions after beginning the game, although players are limited to a single faction change, the process takes several weeks, and players switching factions are returned to level 1 status, losing all activity points gained. ("How do I change my faction or my codename?," n.d.)

Figure 1: New Player Faction Choice Screens

My faction choice in *Ingress*, as in most MMOs I have played, was based on my desire to play with a friend (a member of the Enlightened faction), rather than on an assessment of the ideological descriptions provided. An informal survey of *Ingress* players done in early 2013 seems to indicate that I was in the minority in that decision, but it is also possible that as the

number of *Ingress* players has increased over the past two years, the influence of existing social ties on faction choice has grown.

> Half of players chose a team based on the in-game storyline, and the other half deferred to other more practical determining factors. There seems to be a Nash equilibrium of sorts here, which keeps the two teams on an equal footing (in numerical terms anyway). The 23% of people who purposely chose to join the losing team (locally or globally) have a highly balancing effect. The 15% who chose at random would also contribute to equilibrium. Only the 14% who joined the same side as friends have a destabilizing effect. (Lui, 2013)

The two factions are functionally identical, and the game focuses on a struggle between the two. Players are encouraged to claim locations in the game and defend those locations from attacks and reclamation attempts by players on the opposing faction.

New players receive a brief tutorial in the use of the game software (referred to as a "scanner," since it scans the local area for portals and XM) (see Figure 2). The tutorial is displayed on top of the live scanner interface, which shows a very simple map of local roads, with the player represented by a triangle on the map, surrounded by a circle representing a 40m radius around the player's location.

Figure 2: Initial Player Tutorial

Players can only interact with items that are within the marked

circle on the map, including portals, XM, and items that may have been dropped by other players. The initial tutorial walks a player through the process of approaching the nearest portal, tapping it to interact with it, and then "hacking" the portal to receive game supplies. This first hack supplies the user with several resonators (which are used to power up a portal) and XMPs (weapons used to destroy portals controlled by the opposing faction). At that point, the mandatory tutorial is complete, and the user is dropped into the live game world.

There are additional tutorials built into the program, but they are not immediately obvious to a new player; they require the player to access the "OPS" screen, and then scroll the menu until "Training" is revealed. The tutorials walk the player through a series of common game actions, including:

- Collecting XM: This is the energy necessary for all other game actions. XM can be collected by walking near portals or through densely populated areas.
- Neutralizing an enemy portal: Using XMP weapons to destroy resonators on an enemy-controlled portal.
- Capturing a neutralized portal: Placing resonators into slots on an unclaimed portal. Placing one resonator gives you credit for "capturing" the portal, but to fully activate the portal's play capability, each of its eight slots must be filled with a resonator from your inventory.
- Creating a link between two portals: Hacking a portal will frequently yield a key to that portal. You can link from a portal in range to other portals for which you have the key.
- Creating a control field: Linking three portals into a closed triangle creates an XM control field, and the space within the field is shaded in with the color of your faction. Creating a field results in your faction receiving points for "mind units" (MU) contained within the field, based roughtly on the

population density of the geographic area the field covers (see Figure 3).

Figure 3: Control Field Tutorial

There are a number of restrictions on linking that are not immediately obvious to a new player, and that are not discussed in the tutorials; these include the fact that creating a link to a portal consumes the key to that portal, requiring you to hack and collect another key in order to create additional links, the inability for links between portals to intersect at any point, and the inability to link from a portal that is already inside of a control field. These restrictions on creating links tend to generate the most common questions from new players. ("Why can't I link to this portal?" is a frequent refrain.)

The primary Ingress.com website offers nothing in the way of links to documentation, which leaves users to fend for themselves in terms of learning anything beyond the basic mechanics. However, an informal survey of high-level players in my local metropolitan community, found that very few had viewed official video or written tutorials, and instead had relied primarily on more experienced players to help them learn how to play. This was echoed by players responding to a query in the /r/Ingress subreddit, many of whom said they learned basic play from searching online for resources, but that most of their learning came from peer mentoring in their community.[1]

Ingress Communities

While I was aware of the launch of the game in 2012, and its transition out of beta in 2013, I did not begin playing myself until the release of the iOS client in 2014. My first experience with *Ingress* was a frustrating one, as I found that the user interface—even in the tutorial mode—left much to be desired. I knew only one other active player at the time, who was still a relatively low-level player, and while he was able to show me the basics of capturing and linking portals, neither of us had a good sense of the game as a whole, particularly in terms of strategy. As in many MMOs, early play is primarily solo, but as you begin to level up in the game, interaction with other players is both inevitable and necessary. Unlike most MMOs, however, *Ingress* play is geographically bounded, and as a result, communities of players are generally based on location.

Each time a player captures a portal, or creates a control field, that action is reported in the COMMs section of the game software, and is visible to players within the local area. This allows local players to see when a new player becomes active in a region, and to reach out to that player with information about local community activity.

As players in a moderately large city, we were quickly contacted by other players in our faction via the in-game communication channel, and invited to join a G+ community and Google hangout for local Enlightened players. In our metropolitan area, the Enlightened community maintains a G+ site, but it is used primarily for announcements. There are also two G+ hangouts for Enlightened players, which is where most communication takes place. One is open to all players, but is

1. An online search in February 2015 for "Ingress tutorials" yielded a growing number of tutorial sites, including an official "Help Center" set of tutorials (https://support.google.com/Ingress/), an unofficial set of graphic tutorials that are widely linked to by local groups (https://plus.google.com/u/0/photos/+AlexaMayer/albums/6069486745282199137), a very active subreddit, (http://reddit.com/r/Ingress), and a popular website called DeCode Ingress (http://decodeIngress.me).

focused on welcoming and mentoring new players while they work their way up to level 8. The other is only for players at level 8 and above. The level 8 distinction is important, because after level 8, progression is based on the acquisition of badges rather than simply activity points (AP). The separate hangout for new players also provides a bit of a proving ground, to help reduce the risk of adding players who might accidentally or intentionally reveal information about planned operations to members of the opposing faction. Both hangouts include a significant amount of "off topic" chatter, which ranges from humor to technical support to personal updates. This organization of the social tools is specific to our community and our faction, however, and each regional area varies in the way that it engages new members and structures ongoing participation. There is also speculation among *Ingress* players that the lack of a strong communication infrastructure within the game is intended to encourage more use of Google's G+ and Hangout tools.

The role of MMOs as "third places" for both socializing and learning has been explored by a number of researchers (Nicolas Ducheneaut, Moore, & Nickell, 2004; Moore, Hankinson Gathman, & Ducheneaut, 2009; Steinkuehler & Williams, 2006). *Ingress* implements this in an interesting pervasive way, with players meeting and socializing in real-world contexts as well as through online community tools. Additionally, these local *Ingress* communities share a number of similarities with MMO guilds, many of which have strong outside-of-game presences (N. Ducheneaut, Yee, Nickell, & Moore, 2007; Rossi, 2008; Williams et al., 2006). Because *Ingress* is a pervasive game rather than a virtual online world, however, the lines between game and real-world activity are much less distinct.

> Pervasive games consciously exploit the ambiguity of expanding beyond the basic boundaries of the contractual magic circle. This often leads to the point where the game interface is completely ambiguous: Any action could be a game action, and any sensory

> observation by any participant could be seen as part of the game. (Montola, 2005)

This is where *Ingress* diverges from most clearly from virtual world MMO guilds and social spaces—everything from weather forecasts to commuting challenges to vacation plans has a direct impact on gameplay, and is likely to be discussed in the game communities. Traffic jams, for instance, offer opportunities for drivers to hack portals on their route, weather can facilitate or prevent access to portals in remote locations, and vacations offer an opportunity to visit (and hack, and capture) portals in new locations.

Game Objectives

The designers of *Ingress* have implemented a number of explicit individual objectives in the game mechanics and elements. For beginning players (up to level 8), the primary emphasis is on accruing activity points (AP). This can be done through hacking enemy portals, capturing and populating portals, and linking and fielding between portals. Once a player reaches level 8, AP is still required for leveling, but it is also necessary for the player to acquire badges, which involve reaching specific numeric goals related to game activities. These include the Explorer and Pioneer badges, obtained by visiting and capturing many different portals, the Purifier badge for destruction of enemy portals, the Builder and Engineer badges for creating and modifying portals, and the Trekker badge which rewards distance walked while playing the game ("Badges," n.d.).

The goal of increasing players' physical activity underlies much of the game design. The tag line on the initial login screen for the mobile app says "It's time to move," and that line appears frequently in official communications to players from Niantic Labs. Players also learn, either from their communities or through trial-and-error, that moving between portals at a speed above ~50 km/hour causes the software to "speed lock,"

preventing player action—a strong incentive to play *Ingress* on foot rather than from a moving vehicle.

Another implicit objective of the game is to familiarize players with local sites of historical or cultural significance; new portal submission requirements ("Candidate Portal criteria," n.d.) specify that a location must meet one of the following criteria:

- a location with a cool story, a place in history, or educational valeu
- a cool piece of art or unique architecture
- a hidden gem or hyper-local spot
- a community gathering place
- a point of interest that facilitates discovery/exercise

Ingress players often report becoming more aware of historical and cultural information about their local city or region through their gameplay, as well as finding that they develop a better sense of geography and navigation. However, most *Ingress* gameplay encourages players to focus on their scanner rather than the world around them, and *Ingress* players are thus more often gazing at their phones than at the artwork or architecture in front of them. This is something that could potentially be addressed through gameplay mechanics; some efforts on this front are noticeable in the new player-created missions built into the game, which allow mission creators to prompt players to take photographs or answer questions about the portals they encounter ("Create Ingress Missions: the basics," n.d.).

As players level up, the need to work collaboratively becomes more apparent. Higher-level gear becomes available to players at each level up to 8, and can only be obtained by hacking portals at those higher levels. However, there are limits on the number of high-level resonators that a player can place on a single portal. A level 8+ player can place only a single level 8 and/or level 7 resonator on a portal (as well as two level 6, two level 5, and

four level 4). Portal levels are calculated by taking the sum of the values of all resonators, dividing by 8, and rounding down. This means that a level 8 player cannot create a portal higher than level 5, and that creating a level 8 portal requires eight level 8 players to each visit the portal and place a resonator on it. To gather supplies of high-level weapons and resonators, therefore, it is necessary for level 8+ players to coordinate on the capture and populating of portals, often working together to create "farms" of level 8 portals for harvesting of resources. Since there is strong incentive for the opposing faction to destroy those portals, these farms are often short-lived, and thus require collaborative planning to maximize yield.

Understanding this part of the game typically requires either guidance from more experienced players or fairly extensive online research, as it is far from self-explanatory. The first two screens in Figure 4 show the global and regional (cell) MU scores, respectively. Globally, players have estimated that there 24,576 cells, which on average are approximately 21,000 square km in size. The scores are calculated over a 150-hour cycle (a "septicycle"), broken down into five-hour checkpoints. The third screen shows a leaderboard of individual player MU scores within a cell. Only MU currently contained within a faction's control fields at the five-hour checkpoint are included in the regional and global score. Individual player scores on the leaderboard, however, represent all MU captured during that cycle. For many experienced players, timing the creation of fields to coincide with checkpoints, as well as jockeying for position on the leaderboard, become an important aspect of the game. ("Regional Mind Unit Scoring," n.d.)

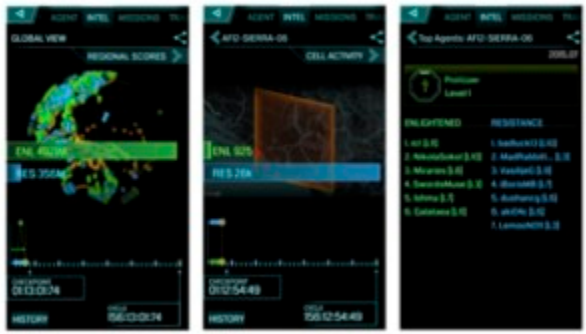

Figure 4: Global and Regional MU Scores

The very uneven global scores shown in the first screen of Figure 4 reflect the results of a large, multi-layered field over much of the Indian subcontinent that was created by Enlightened agents on 28 February 2015 (kheaz, 2015). These large fields are extremely challenging to implement, because the links between portals cannot cross any other links. The operations behind the creation of these fields bear many resemblances to MMO raids, with pre-planning by players before the implementation of the field (to determine optimum anchors for the corners or anchors of the field and recruit players to travel to those locations at the set time), and ongoing real-time communication before and during the actual field creation, because players must remove any blocking links along any side of the planned field before it can be completed.

Unintended Consequences

In addition to the actual gameplay, *Ingress* has had some interesting unintended consequences, both for players and for communities. One of these is the extent to which the game leads to breaking of laws. An informal survey of *Ingress* players found that "[a]lmost one in three players have skirted around the law: 16% said they had 'knowingly broken legal or local regulations

in order to play *Ingress*' and a further 15% ominously said 'maybe'." (Lui, 2013)

It is likely that this lawbreaking involved either use of mobile phones while driving, or trespassing in order to reach portals—ranging from minor transgressions to potentially serious breaches. While the *Ingress* portal guidelines require that portals not be located on personal private property, they do allow for portals on public lands and commercial private property, and these areas often limit their access. Public parks and cemeteries, for instance, frequently house portals, and also tend to limit access to daylight hours. Portals can also be found in places that require admission fees, such as amusement parks.

In order to reach a range of portals, and particularly in order to create or defend control fields, players may end up in deserted parking lots late at night, or lurking at the edges of commercial or government buildings during off hours. This has led on more than one occasion to players being stopped and questioned, or even arrested, by local law enforcement. (A web search on "*Ingress* law enforcement" yields a number of stories about encounters between players and police.) This also raises interesting questions about how real world identity aspects such as race, class, and gender can directly and/or indirectly influence a player's access to game resources.

Conclusion and Directions for Future Inquiry

Ingress, with its unusual combination of pervasive gaming and MMO mechanics, offers a rich environment for those interested in the study of games and learning. This paper provides only a basic description of *Ingress* mechanics, gameplay, and community. There is fertile ground for deeper inquiry into the game's influence on players' physical activity levels, on their knowledge of local history, culture, and geography, and on their engagement in informal peer mentoring. It also raises interesting questions about how merging real-world spaces with gameplay results in issues related to real-world identity and access. This

paper attempts only to open the door to greater awareness of the game, and to pave the way for further and more detailed research into a variety of aspects of *Ingress* play.

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FINDING THE BEAT: CYCLES OF EXPERTISE IN RHYTHM GAMES

Kevin Miklasz

Abstract

I have experienced an interesting puzzle when playing rhythm games: gameplay on a song usually proceeds from being so complex that I don't even know what I'm doing wrong, to being so fluent that I can play the song without conscious effort. Thus, I get better at the game without knowing how that improvement occurs or what it looks like. To better understand the development of my own rhythm game literacy, I downloaded four songs on the popular rhythm game *Jukebeat*, and recorded all of my gameplay on those four songs over a period of nine months. From this recording I observed how quantifiable measures of my performance and improvement in the positioning of my fingers and compared with my self-perceived gameplay skill. It was found that I regularly underwent unconscious experimentation and improvement that showed disjointed but gradual progress over time, and was generally misaligned to my self-percieved efficacy. Along with observations and reflection of my gameplay recordings, I also present a theoretical framework for understanding the development of rhythm game literacy.

Introduction

Literacy is a fundamental aspect to learning. Literacy takes many forms, but generally involves interpreting meaning from sensory inputs. The process of interpreting meaning can be quite complex: it often involves more than just knowing definitions, but rather having a situational or systemic knowledge (Gee 2007). Literacy thus involves "embodied intelligence," or having a well developed understanding of the contextual nature of symbols developed through actions, or embodied experiences. Embodied intelligence is built up from multiple sessions of practicing and reflecting on that practice, or what can be referred to as cycles of expertise (Gee 2007). Squire goes so far as to describe game literacy as particularly embodied in the interactivity of a game, and thus is most directly represented as performance expertise (Squire 2008).

Rhythm games are often considered to involve practice with musical literacy. Musical literacy generally involves understanding the timing of notes in meter and beats as described in Lerdahl and Jackendoff's Generative Theory of Tonal Music (Lerdahl and Jackendoff's 1996). Professionally trained musicians are known to perform better than non-musicians in understanding and interpreting the timing of both visual and auditory signals (Ramsayer et al. 2012). Of additional interest, coupling physical movements to beats have been found to increase musical literacy (Manning & Shutz 2013), indicating that movement is useful in developing musical expertise and there is a potential use for rhythm games to develop genuine musical literacy. On the other hand, rhythm games do not offer an exact parallel to the way music is performed (Miller 2009, Arsenault 2008) and evidence that skills transfer from rhythm games to general musical literacy has not been found (Gaydos 2010). Emergent timing and event timing are recognized as two distinct skills, the former involving the coordination of fluid and continuous movements and belonging to the realm of the

athlete, and the latter involving discrete and regular events and belonging to the realm of the musician (Janzen et al. 2014). In this light, games are more similar to sports than music performances, potentially explaining why attempts to show increases in event-timing musical literacy from gameplay have been unsuccessful. This paper will mostly avoid this tricky issue by recognizing that game-based musical literacy is increasing (i.e. a player's scores in rhythm games increases over time with practice), and concern itself with understanding how this game-specific literacy develops– whether or not a more generic and transferable music literacy is also developing. In this way, rhythm games are simply treated as a convenient case study for understanding the development of a specific, context-dependant expertise.

For that purpose, rhythm games are a particularly useful case study for several reasons. First, rhythm games have clearly defined cycles of practice, namely replaying songs. Second, the game offers a clear mode of performance to express the mastery gained, thus providing an embedded assessment of mastery (Shute 2013). Third, a player's score in a rhythm game can be considered a close analogy to a quantifiable measure of literacy.

This well-played example plans to investigate a simple issue-how does literacy expertise develop over repeated cycles of gameplay? To answer this general question, I focus specifically on rhythm games. I have noticed from my gameplay that the development of such literacy seems to be far from a regular, linear process. It involved the development of several, functionally separate literacies, which each seem to develop in jumps and spurts. The end result is that gameplay on a song usually proceeds from being so complex that I don't even know what I'm doing wrong (i.e. lack of literacy) to being so fluent that I can play the song without conscious effort (full literacy through embodied intelligence). The transition between these two states happens so subtly that I am not quite sure when and how the transition occurs, nor am I able describe what exactly

changed in my gameplay to cause this increase in performance. This well-played session is a conscious investigation into how exactly this unconscious transition from low to high literacy occurs in rhythm games. This is achieved through analysis of video recordings and journaling throughout several months of my mastery of four new songs.

Methods

Author background

I am relatively experienced in several forms of the rhythm games genre, including *Dance Dance Revolution*, *Elite Beat Agents*, *Guitar Hero*, *Rock Band*, *Osu Stream*, and *Jukebeat*. In all of these games, I progressed from a beginner to some moderate to high level of expertise. This study focuses on *Jukebeat* which proved one of the easier games to record and analyze, but I believe that the patterns described for *Jukebeat* likely also hold true for other rhythm games. I can currently pass most songs on *Jukebeat* at a level 9 difficulty, but have yet to pass any songs on level 10 difficulty. Thus I am at an advanced level of literacy in *Jukebeat*, but still have room to grow in expertise.

Description of Jukebeat

Jukebeat (Konami 2011) is a freemium game available on the iPad and iPhone. It comes preloaded with three playable songs, but has many "4 song packs" available for purchase through the in game store. Each song has three levels of difficulty, and each level has a further rating from 1-10 allowing for a more absolute metric of difficulty that can compare various songs to each other.

Songs are played on a 4×4 grid of square buttons. Players press one or more of the buttons in sequences as a song plays. A visual cue appears about one second before a player is suppose to strike the button, cueing them into the intended timing (Figure 1). One of three feedback animations occurs after a player hits a

button, to indicate whether the player hit the note in perfect, near perfect, or far from perfect timing (Figure 1). Players are not penalized for taps on empty buttons. Notes can occur individually or in groups that must be pressed together. A typical Jukebeat song on a high level of difficulty involves coordinating the movement between 3-4 fingers on each hand.

Like most rhythm games, the point system awards more points for the closer you are to the beat, but also weights the score for each note by your "combo," or the number of consecutive prior beats hit in perfect or near perfect timing. Thus the score accounts for both individual accuracy on a note, and repeated accuracy across notes. Individual notes are worth different points on different songs, such that the more notes a song has, the less points each note is worth to ensure the maximum possible score on any song is 1,000,000. Thus the system is weighted in such a way that scores between different songs feel comparable. The game also awards a letter grade for various final scores: less than 700,000 is an F, above 700,000 is a C, 800,000 is a B, 850,000 is an A, 900,000 is an S, 950,000 is SS, and 1,000,000 is SSS. Typically the only way to score an SS or higher is to get a full combo on a song. This scoring system also seems as though a fair way to quantify skill in a song in the game, and so I adopted end-song score as a quantifiable measure of my expertise with the song.

I rarely get scores above an A on any particular song- at the point where I can regularly achieve A's on a song, the song tends to lose my interest. I am most engaged and interested in a song when trying to move my score from an F to a B.

Setup and analysis

In June 2014, I downloaded four new songs from *Jukebeat*'s store. These were songs I had never heard nor played before. The songs also captured the range of my current skill levels: three were ranked at level 9, and one was ranked at level 10. Based on my

current expertise level, I would expect to master three of the songs and struggle with the final one.

I built a device to record my hands and the screen as I played *Jukebeat* (Figure 1). I did not use screencapture because I was interested in the motion of my hands and fingers in particular, and if they might show any subtle changes over the cycles of practice. I recorded every playthrough of the four downloaded songs, over a period of nine months. I did play more than just those four songs, but only recorded playthroughs of those songs. I continued my natural play cycles with the game, which usually involved playing the game intensely for a few days to weeks, then putting it down in favor of other games for a few weeks to months, then returning again.

I also wrote down thoughts in a journal as I played the songs, to capture my current understanding of my gameplay. In the journal, I would pay special attention to noting which portions of the song I felt as though I was struggling with most, what in particular was causing me to struggle, and when I felt that I had overcome the difficulty. This would allow me to correlate my self-perceived progress with my actual progress as measured in my gameplay videos.

I analyzed several features of my play in the recorded videos. These include easily quantifiable things like total song score and scores during particularly challenging sequences of notes. Each song also had a progress bar at the top of each song (Figure 1). This progress bar was shown as a series of grey boxes initially, with each set of boxes corresponding to one meter in the song and the number of stacked boxes corresponding to the number of notes needing to be tapped in that meter. If all notes were hit with perfect timing, the stack of boxes would turn yellow. If all the notes were hit with perfect or almost perfect timing (as measured by the game), the stack of boxes would turn blue. If at least one note was hit with less than almost-perfect timing, the stack of boxes would turn black (or transparent against the background). At the end of a song, the image of this progress bar

could then be used to measure how well I was playing at different moments in the song, providing a nice quantifiable measure of detailed performance.

My analysis also includes more qualitative information about which fingers were predominantly used both during the song as a whole and during particularly challenging sequences (Figure 1). I developed a coding scheme that recorded which fingers were used to hit certain groups of beats in the song. I observed what caused me to miss sequences of beats, whether I was moving my fingers in the wrong positions, or moving them at the wrong timing. The coding scheme and analysis emerged naturally as I identified parts of the song that seemed difficult, and in which I noticed changes in my gameplay over time.

Theory

Categorizing literacies

In thinking about my gameplay over the years, I believe that there are three primary skills involved in doing well at any rhythm game. The first is literacy, or making sense of stimuli acquired through senses. Second is coordination, which involves translating inputs into outputs. It still involves a sense-making activity, but involves coding inputs from one or more sources into a suitable output, usually muscle movement. "Muscle memory" is another word for this. Third is physical finesse, and involves the physical action required to complete the desired output. Conceptualizing the motion that you would like to take is not the same as actually achieving that motion and the desired end result, which describes the difference between coordination and finesse.

Although these three skills were described based on reflections of my own gameplay, there are clear parallels with the conceptions of musical literacy described in the introduction, particularly in the conception of emergent timing skills of professional athletes (Janzen et al. 2014). Also, Squire's concept

of game literacy as being a performance expertise (Squire 2008) encompasses all three of these skills as part of a single game literacy, as all are required to exhibit performance in the game.

In rhythm games, I believe that for practical purposes, we are not being stretched to the limits of finesse. Besides *Dance Dance Revolution*, most rhythm games do not require a vast amount of physical exertion, and do not require movements that the average person is incapable of performing. What we lack is the coordination, or the muscle memory, to execute these movements fast enough, or the literacy required to accurately read visual and audio cues.

Literacies in Jukebeat

I will now refer to *Jukebeat* in particular, though these same literacies would likely apply to most rhythm games. In *Jukebeat*, there are three primary skills that must be perfected to advance one's performance: Visual literacy (VL), Tactile Coordination (TC), and Audio Literacy (AL).

1. *Visual literacy* is about being able to make sense of note patterns as they come up. It's the earliest skill learned in the game- you need to be able to understand notes before being able to respond to them. This literacy has different levels of competency- the notes become harder to read at more difficult levels both because there are more notes and because they move faster, requiring you to improve your VL. Once VL is attained at a particular level of difficulty though, it is easily transferred to other songs at that same difficulty level.
2. *Tactile coordination* is the reflexes and finger agility required to respond to particular note patterns. It involves making sense of visual and audio clues to produce muscle movements. TC can actually be viewed as a series of different minute skills, rather than one big skill. Being able to hit different types of sequential patterns requires

different motor actions, and therefore each sequence requires it's own TC. This is akin to being able to read the letter "A", but not yet understanding the letter "B." Additionally, being able to string multiple sequences together is an additional skill, just as being able to recognize the letter "A" is different from being able to read the word "ant". Understanding where one finger leaves off in one sequence and how to connect it to the first note of the next sequence is an additional level of TC. Based on my experience, TC's seem to be highly transferable- a discrete TC gained for one sequence in one song readily applies when that same sequence is played in other songs.

3. *Audio literacy* is about being able to read the metrical structure of a song. This is actually one of the last skills needed to play the game well, despite being the one most commonly associated with the game genre. At higher level songs, VL informs *where* you should move and AL informs *when* you should move (with your ability to actually move in the desired sequences determined by TC). AL is on the one hand extremely song specific. AL gained for lower levels on one song often travels up to and improves performance on higher levels of that same song. In general though, AL is its own higher-order skills that develops over time across many songs, and can allow you to grok the beats of new songs faster. But, a part of it is always song specific, and your song-specific AL will typically improve the more that you practice a particular song, no matter how much of an expert you are.

Cycles of Expertise

Rhythm games offer multiple opportunities for repeated cycles of practice. First, any given song repeats certain sequences of notes throughout the song, which gives you a chance within a song to practice that sequence multiple times. Second, the songs themselves are clearly meant to be replayed, giving the

opportunity repeat that song multiple times. Third, songs at equal difficulty offer opportunity to practice playing at that difficulty in multiple ways, with equally challenging but different note sequences.

From my experience, I would suggest that there are four distinct levels of expertise that a player progresses through the more that they play a rhythm game. This progression is summarized visually in Figure 2.

Level 1: When you first start playing rhythm games, you really are just practicing VL. You play the songs better when you use your VL to learn both when and where to hit a beat. TC skills are pretty minimal, there aren't really even sequences yet, the notes are played so far apart that each motion to hit a beat feels separate from the next motion. TC at this point just involves getting the timing of single notes right. The AL skills are pretty nonexistent and aren't really even being practiced. Although notes are being played on a beat, they are being played so slowly that you induce their timing visually more than auditorily.

Level 2: Once your VL becomes somewhat advanced, you can progress to the next level of songs, where the idea of sequences, or series of notes played on the half or quarter beat, becomes prominent. This challenges both your VL and TC, as you now need to think about several motions happening in close repetition. Muscle memory of sequences starts to be built, and TC is undergoing the most improvement at this stage (though VL is still becoming more advanced too). At this point, AL is still irrelevant, as the sequences happen in enough isolation from each other that VL still informs the timing of the sequence more than AL, and the sequences are short enough that AL is not needed to keep you on beat.

Level 3: Once your TC has mastered basic 3-note sequences, you can progress to songs where sequences become faster and longer. Smaller sequences previously learned must be chained together, in sequences that can be 5-15 notes long. The VL task becomes more challenging, and less about reading individual

notes as much as seeing patterns of sequences and letting your muscle memory move from one sequence to the next. You no longer see the notes as individual beats, but you read them visually as sequences. TC is constantly strained, and fingers will actually begin to tire over the course of several songs, building up finesse to some degree. These long repetitions of notes, and the increased speed of the songs and the speed at which the notes pan across the screen, means that it becomes increasingly difficult to infer timing visually. Visual pattern recognition still informs *what* sequences of muscle movements should be enacted, but audio cues start to inform *when* those movements should be enacted, and how to remain on beat over a 10-15 note sequence. In my opinion, it's at this level that the game becomes fun, and this is when you begin to really flex your AL.

Level 4: In the highest level songs, it is primarily about AL. VL is still continuing to be strained by some especially difficult songs, but for the most part this skill is fully formed and most songs are completely readable. The player has also built an extensive muscle memory library of TC's, which continues to be added to and challenged by each new level of song. But songs at this level are simply impossible to be played correctly if audio cues are not used to infer beat timing. At this level, it is fully incorporating TC with AL that most determines performance.

From this hypothesized progression of skills, one can see that the main literacy that most influences one's performance changes as one's skill level changes, starting with VL, then moving to TC, then to AL. This also means that AL is only practiced in rhythm games in a highly complex way that must be fully integrated with other visual and tactile skills. This is an interesting comparison to most of the musical literacy tests described in the introduction, which test that literacy in a highly simplified, abstract manner (e.g. Ramsayer et al. 2012).

Hypothesizing from theory

Based on this theoretical framework, I have several hypotheses

about how my performance would progress, depending on which skill is being strained the most in a new song.

H1: If Audio Literacy is most constraining performance, timing should be off for beats, but fingers should be moving in the correct sequences. This timing should get fixed with time, and be the primary factor behind performance improvement. This improvement is only seen over the number of repeated playthroughs of that song.

H2: If Tactile Coordination is most constraining performance, then one would hit the beats at the right time, but in the wrong positions, or to happen in the right position but always with a delay due to higher processing time to execute the maneuver. Over time, the positioning and timing should rectify itself as the appropriate muscle memory is built up.

H3: If Visual Literacy is most constraining performance, then there should be trouble inferring both position and timing due to general cognitive overload. Improvement should proceed from random to more purposeful motion. That random motion may or may not be on beat.

Gameplay Observations and Reflections

In looking at my gameplay records, several patterns are apparent. First, my performance, measured as end-song score, has increased over time, and the increase has been somewhat linear, though with a lot of variability (Figure 3). The quantifiable increase in whole-song ability is certainly more regular that I expected it to be. Comparing this with my journaling notes, my self-perceived feeling of mastery occurs over 1-3 playthoughs of a song, which was much more sudden than the measurable score of mastery, which occurred gradually over all 10-20 of my playthroughs. I gained mastery in two of the songs (i.e. achieved at least a B level rating), and despite my focused attention on the issue, still found my feeling of mastery to appear subtly and thoroughly, without exactly knowing when and how it occurred.

Even more interesting conclusions can be found by looking at

my individual playthroughs of each song. In Figure S1, you can watch two playthroughs of each of the four songs, the left being one of my first two initial attempts, and the right being one of my last three attempts. Thus you can see visually how my playing performance changed over time.

The most challenging song is shown first, Red Zone (Figure S1, song 1). This song clearly exceeded my abilities, and I showed little improvement over time. The progress bar for the most part shows few blue or yellow sections, and little consistency over time (Figure 4). There were few meters or sections of the song that I definitively mastered in any significant way.

The second and third songs, Historia of Ruined Kingdom and Flip Flap (Figure S1, song 2 and song 3), were the two easier songs in the set and were both mastered by the end of the recording period (Figure 3). In the progress bar, Historia of Ruined Kingdom showed a lot of consistency over time- there were certain sections of the song, particularly in the "main1" section of the song, that consistently received yellow bars, while the neighboring meters received blue bars (Figure 5). There was also a noticeable increase in performance from grey to blue across the entire song over the first 3-4 playthroughs, which corresponded with a sharp increase in total score over that period (Figure 3). Flip Flap showed a little less consistency over time, with yellow bars appearing over different portions of the song in successive playthroughs (Figure 6). The "transition" section was consistently played fairly well on the fourth playthrough onwards, but most other sections of the song showed slight and inconsistent increases in performance with time. Although the score for this song does increase over time (Figure 3), it's unclear that one particular section might have been the cause of that increase.

Both songs included a particularly challenging note sequence. In Historia of Ruined Kingdom, there were two double notes that occurred in the upper left corner of the screen that were particularly challenging (Figure S2). The first double occurred

on the second row from the top, with two horizontally aligned, adjacent notes. The second double occurred on the second column from the left, with two vertically aligned, but separated notes. This sequence of double notes caused some trouble, as they required a sudden rotation and separation of two fingers to hit both sets of notes. This particular sequence of notes had not appeared in previous songs, and I had no muscle memory for it. This resulted in misplaying the notes on my earlier playthroughs. I noticed five distinct ways in which I misplayed the pattern (Figure S2), and I generally proceeded through the patterns in the following order, named by the codes I had given them:

1. "bottom" (I attempted the second sequence as two sequential rather than simultaneous notes, hitting the bottom one first)
2. "top" (same as before, but hitting the top one first)
3. "right invades" (my left hand takes the top note, and my right hand "invades" to simultaneously hit the bottom note)
4. "almost" (I seem to realize that both notes are simultaneous rather than sequential, and attempt to hit them together with the index and middle finger of my left hand, but don't quite get it right)
5. "hit" (index and middle finger of left hand hit the second two notes simultaneously)

What is most interesting about this sequence is how regular it seems: I am clearly experimenting with different forms of sequential notes, then I realize it's not sequential, then I experiment with different forms of simultaneous notes until I master the pattern. What is most shocking is that this experimentation went completely unrecognized in my journaling and memory. I did recognize that I was improving over time, but I had no recognition that there was a particular sequence in the song that was causing me difficulty, and that I was attempting multiple techniques to master the obstacle over time. All the experimentation occurred on a subconscious level,

and in fact my perception of mastery tended to occur at the same point in time with my resolution of this difficult pattern.

A similar story holds true for Flip Flap. In this song, there was a three-note sequence that caused much difficulty (Figure S3). These three notes were simultaneous and occurred as a middle beat in a long and challenging sequence of beats. The notes also needed a large repositioning of both hands and coordinated effort to be hit in sequence with the other notes (meaning, they had high tactile coordination difficulty). Look for the two notes in the middle-top that are diagonally connected, and the third note in the bottom right corner of Figure S3. Note that this pattern had a corresponding left-facing orientation, and that the right and left facing orientation occurred 4 times each in the song (Figure S1). I found 4 unique ways in which I hit this pattern (Figure S3):

- "0" (the pattern caught me off guard and I hit 0 of the notes)
- "2" (I hit the two notes at the top, but missed the third one)
- "x-off" (I was slightly off, but almost hit all three notes)
- "x" (x marked the spot- I hit all three notes)

Figure 7 shows how the codes played out over time. There was a distinct effect of handedness in my ability to master this sequence. The very first playthrough was interesting- I hit all of the left facing notes, and missed all of the right facing ones. From then on, I started experimenting with both of the right and left facing sequencing. My performance on the left facing ones back-tracked- I got a lot of 2's mixed with x's, which gave way to x-offs and x's, before finally settling back into x's. The right-facing sequences were a different story, remaining a mix of 0's and 2's for many playthroughs. Once the left-facing sequences had settled back into x's, the right facing ones were still mostly x-offs, and it's only with the last playthrough or two that the right-facing sequences seemed to be close to mastery. Similar to Historia of Ruined Kingdom, there is no mention in my notes

about this troublesome sequence nor do I recall struggling with it- I seemed to have no conscious awareness that there was a sequence that was causing me difficulty, nor that I was experimenting in my attempt to solve it.

The final song caused me a lot of difficulties (Figure S1 song 4) that were known to me, and much reflected upon in my journaling. Sakura Sunrise had a tricky sequence that I called the "star pattern"; it involved a nine note sequence, a simultaneous 4 note sequences followed by a simultaneous 5 note sequence that together mapped out a kind of 8-sided star (Figure S4). I had seen this sequence before, but it had only appeared once in other songs, and as a separate sequence from any other notes. In Sakura Sunrise, the sequence appeared many times and at the end of a long and complicated note sequence. In the progression feedback (Figure 8), this sequence occurred in the "main1" and "main2" sections of the song, which were sections in which I achieved little consistent mastery over time. In contrast, the "intro" and "piano" sections had no star patterns and showed consistent mastery from the first few playthroughs onward.

I was quite aware that this sequence was causing me difficulty, and that I was experimenting with different ways of hitting the pattern. From my journaling notes, I identified at least 2 different techniques I had been testing out. Here's my notes directly from the journal on 11/28, after my 8th playthrough:

"On the last run of Sakura, I noticed there were two different hand motions I was using to hit the star- one seemed to work, and one didn't. I either tried to use my index and middle finger on both hands, or my middle finger and thumb. I suppose a few more songs will get me into the right routine and I'll start nailing it."

Of course, I did not "start nailing it" anytime soon. But also unaware to me, I had been experimenting with not two, but eight different variations of finger patterns (Figure S4). Here were the codes:

1. 3+4 (three fingers on first quartet, four fingers on second quartet, only using index and middle fingers)
2. 4+4 (four fingers on first quartet, four fingers on second quartet, only using index and middle fingers)
3. 3+4t (three fingers on first quartet using index and middle fingers, four fingers on second quartet, using thumb and middle fingers)
4. 4+4t (four fingers on first quartet using index and middle fingers, four fingers on second quartet, using thumb and middle fingers)
5. 3t+4t (three fingers on first quartet, four fingers on second quartet, only using thumb and middle fingers)
6. 4t+4t (four fingers on first quartet, four fingers on second quartet, only using thumb and middle fingers)
7. 3+5 (as you might guess, it was like 3+4, but I used a quick succession to hit the final middle note right before the other four notes, treating them as sequential rather than simultaneous)
8. chaos (no discernible pattern)

The initial patterns were primarily 3+4, with some of 4+4, in my first 6 playthroughs. But 4+4 was an awkward positioning of my fingers, and offered no opportunity for a 4+5 to occur without pulling in my ring finger is an even more awkward fashion. The star pattern also occurred in different corners of the screen, and in certain corners 4+4 was more difficult than others to pull off. This generally gave way to 3+4t, 3t+4t, and 4t+4t in playthroughs 7-14, but every other potential sequence was still prevalent in this period to some degree. Score was generally low but highly variable during this period (Figure 3). The use of the thumb allowed for more consistent performance despite the changing position of the star pattern on the scree. In playthroughs 15-23, 3+4t and 4t+4t were the most dominant two patterns, and over time 3+4t became less prominent and 4t+4t became more prominent. Score showed a general increase over time during

this period (Figure 3). It was almost if I knew what I had to do, but still had difficulty executing it with consistency.

What is clear is that in this song, even when the obstacle was very conscious to me and I knew what part of the song to be paying attention to, there was still a massive period of unconscious experimentation that occurred during that sequence, and that the conscious knowledge of the problem didn't help at all in solving the problem faster. There was a fair amount of experimentation and even retrogression to previous patterns in the process of learning.

Conclusion

In general, my progress in *Jukebeat* was primarily an unconscious and highly irregular process that showed little correspondence with my self-perceived feeling of sudden efficacy. This on the one hand is reassuring- gradual progress towards mastery over many cycles of expertise is expected. On the other hand, this is a bit unsettling- even when I was devoting explicit, conscious effort towards being aware of my progress, I was unaware of how my mind was struggling, experimenting, and learning to be better.

To bring the results back to the different literacies involved in rhythm games, my general sense is that my TC was most constrained by the songs, and I saw a lot of confirmation for H2 in how I progressed through troublesome sequences, and the sequences themselves had clear signs of being challenging from a TC standpoint. There was in some sense a sharp and binary transition through discrete finger configurations, a clear indication of TC issues. But the transitions occurred in a disjointed and gradual progression that involved significant retrogression. I wouldn't suddenly move from configuration 2 to configuration 3, but would in contrast still be employing configuration 2 and 3 in a song while simultaneously perfecting configuration 5.

I did also observe a general song-wide increase in proficiency

over my first few playthroughs, as well as a high initial proficiency in a song (Figures 5,6,8). The initial proficiency indicates that there was a high degree of transfer of all three literacies from other songs. And the initial increase over the first 3-4 playthroughs, which primarily occurred in sections of the song that had no TC issues, is likely due to increasing AL with the song and offers some support for H1.

I found that my learning was filled with discrete steps that transitioned gradually over time. My learning and progress also seemed generally misaligned with my self-perceived efficacy. But perhaps this cycle between success and failure, progress and retrogression, is how game literacy expertise does and should develop during repeated cycles of play.

Figures and Tables

Figure 1: An example of my fingers in the midst of gameplay on a song. Beats appear as the colored green and white shades, and must be tapped when the shades fully cover the square. The rainbow circle is the feedback response indicating that a note was recently tapped with perfect timing. The shaded bars between the info at the top and the play region is the progress indicator.

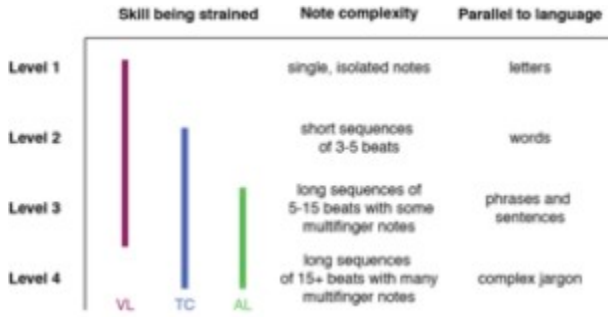

Figure 2: A visual diagram of how difficulty increases with the level of the songs.

Figure 3: A graph of the author's gameplay performance over time. In this graph, the x axis shows the number of repeated playthroughs of the song, which occurred over a period of 9 months at unequal time intervals.

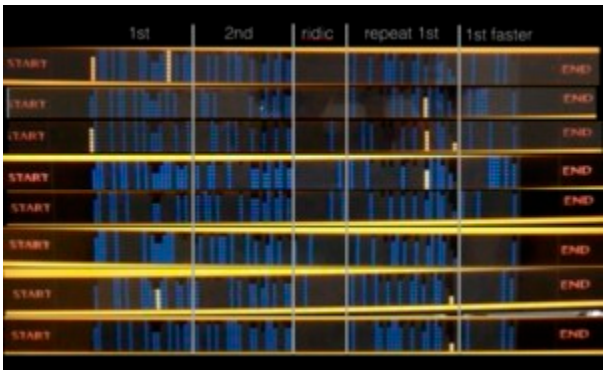

Figure 4: The end-game recap of Red Zone, shown across all of my playthroughs.

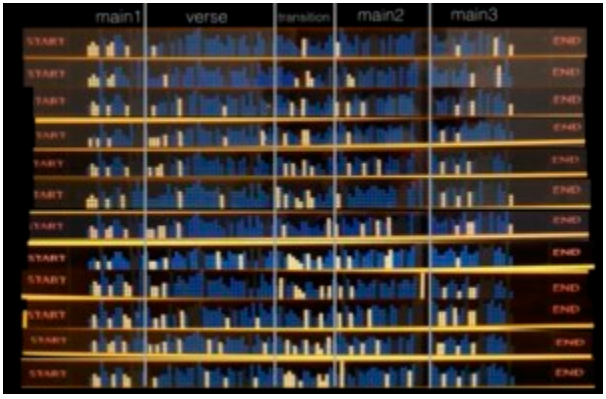

Figure 5: The end-game recap of Historia of Ruined Kingdom, shown across all of my playthroughs.

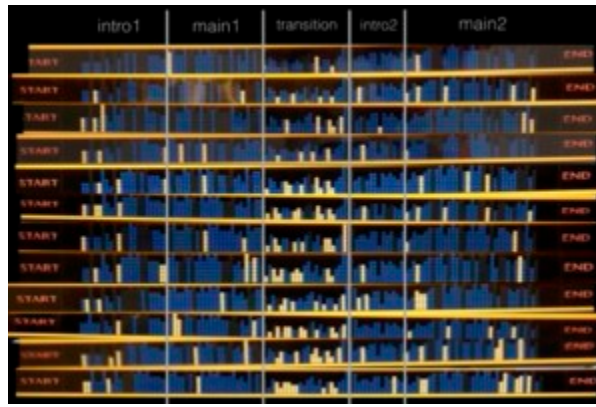

Figure 6: The end-game recap of Flip Flap, shown across all of my playthroughs.

Left 1	x		2	2	2	x	x	x	2	x	x	x	x
Left 2	x	x	2	x	x	x-off	x	x-off	x	x-off	x	x	x
Left 3	x	2	2	2	x-off	x	x	2	x	x	x	x	x
Left 4	x	2	2	x	x-off	x	2	x	x	x	x	x	x
Right 1				2			2		2		x-off	x-off	
Right 2				2	2				2		x	x	x-off
Right 3			2					2		x-off		x	x
Right 4							2		x	x-off	x-off	x	x

Figure 7: Progression over time in Flip Flap's difficult sequence.

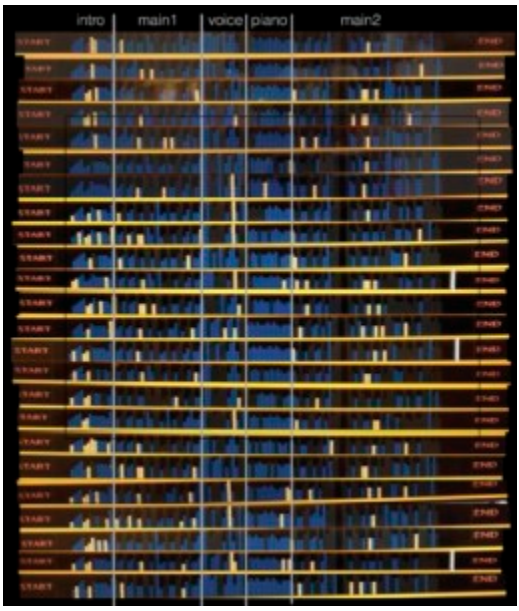

Figure 8: The end-game recap of Sakura Sunrise, shown across all of my playthroughs.

Figure S1- https://www.youtube.com/watch?v=_oaVUqjRSDk
Figure S2- https://www.youtube.com/watch?v=CpJ3x_SiNfE
Figure S3- https://www.youtube.com/watch?v=UAQgh9AEcn8
Figure S4- https://www.youtube.com/watch?v=TFT8246QiXM

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