

WELL PLAYED

A Journal on Video Games, Values, and Meaning

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AGENCY, IDENTITY, SEX, GENDER, AND POKÉMON GO

ALLISON BANNISTER

By Allison Bannister

INTRODUCTION

August 2016, as I went walking in Hays, Kansas, I witnessed a strange sight. Downtown, just after 8:00 pm, nearly a dozen cars had parked along the side of the street, their passengers sitting with their phones, swiping at the screens, windows rolled down on a pleasantly warm summer evening. I knew why they had gathered there, because I was there for the same reason. The three teenage boys sitting on the bench under the trees had drawn all of us to this corner to catch pokémon—the intersection boasted three pokéstops, and on each pokéstop a lure module sparkled, promising to spawn new creatures for us to capture with each passing minute.

Pokémon Go had only recently been released, and its fervor was at its height.

For those unfamiliar with the augmented reality phenomenon, *Pokémon Go* is a mobile game that uses real world locations, the phone's GPS and camera to allow players to wander through

the world, tracking down and catching cartoon monsters who players then battle against each other for control of Pokémon gyms. Gyms and pokéstops are found at landmarks and places of interest and are vital for players wanting to restock on supplies, gain in-game currency or win experience. Pokémon can appear anywhere and everywhere, but are most common in areas where larger numbers of people play the game. The stated goal of the game, like practically every installment in the franchise, is to “catch ‘em all,” to find and catch at least one pokémon of every pokémon species.

Over the course of this paper, I will be exploring sex and gender in *Pokémon Go*. Most of my investigation stems from a specific update released in February, introducing sex/gender to the game in a way that it hadn’t previously appeared. It was a major update, and one which raised a number of questions for me as a feminist scholar.

THE UPDATE

On February 16th, 2017, *Pokémon Go* launched its biggest update so far, adding dozens of pokémon from gen 2, new types of berries, and additional avatar customization options (*Pokémon Go*, 2017). It also added a new piece of information to every pokémon in the game: their sex.

Throughout this paper, I will be talking extensively about sex and gender, utilizing the following Oxford Dictionary definitions: Sex here refers to “Either of the two main categories (male and female) into which humans and most other living things are divided on the basis of their reproductive functions” while gender is understood to be “Either of the two sexes (male and female), especially when considered with reference to social and cultural differences rather than biological ones. The term is also used more broadly to denote a range of identities that do not correspond to established ideas of male and female.” Sex is

understood to be biological, whereas gender is socially constructed and performative.

Setting aside Nidoran, a pokémon species that has been sexually dimorphic from the beginning, sex began sneaking into the game around December of 2016 when sexual dimorphism began appearing in pikachu (Reddit, 2017). Pikachu have different tail shapes based on their sex, with male pikachu tails sporting the pointed lightning bolt tip, as seen on practically every piece of Pokémon advertising, while female pikachu's tails have a rounded off, heart shape at the end. When pikachu evolve into raichu, the males continue to have a more pointed tail, while the female's tails are more curved. At that time, the sexes of pikachu and raichu were somewhat fluid, with Reddit users reporting their Pikachu changing sex during evolution or between updates as developers continued tweaking the code.

With the February update, sex solidified and you no longer had to be a savvy pokémon zoologist to identify the sex of a pokémon—next to statistics about a pokémon's species, type, height, weight and hit points is a little symbol marking it, declaring its sex as an immutable fact of its being.

Only, many of us had been playing for months by then, had pokémon we had raised, named, known, who's "lived" identities mattered to the program not a bit. I had tended toward feminine names and identities for my favorite pokémon, and suddenly pokémon I'd known as female for all of their short pokémon lives had been declared male. Eloise, my warrior lady rhydon, toughest of my fighters, male. Crocus, my starter bulbasaur, my oldest pokémon friend, male. Duchess, the vapoleon, male. The gender assignments I had given my pokémon through feminine names were placed at odds with their newly assigned sexes.

As I continued exploring the sex assignments within the game, I started noticing that not only were many of my pokémon

misgendered, the majority of my pokémon overall were male. Sorting by combat power, my most powerful nine pokémon were all coded male.

I also realized, as more species of pokémon started to display sexual dimorphism, that up until this point the physical traits we had seen in pokémon with subtle gender variation had all been male presenting. Gloom, for instance, a plant-like pokémon, has more spots on its buds if it's male, fewer but larger spots if it's female. Until the update, all Gloom had displayed masculine coloration despite not having been officially sexed, reflecting a male-as-default attitude.

These findings raised a variety of questions for me as a scholar. The first is sex distribution within *Pokémon Go*. I wondered whether my pokémon were predominantly assigned male by chance or by design, and so I compared my findings with friends for a slightly larger sample and looked into the history of sex distribution in pokémon games. I then examined player generated lists of the strongest pokémon species in *Pokémon Go* and the sex distribution those pokémon have demonstrated in previous games, exploring assumptions about sex/gender and power that might be at work in this game.

Second, I look at player agency, exploring the loss of agency inherent in the game's assignment of sex to previously unlabeled pokémon, and the new forms of agency introduced by that change. I present a few different ways to read the addition of sex several months into a game where sex/gender had previously been open ended, and ways of interpreting the tension between player assigned gender and game assigned sex.

Finally, I touch on some of the ways in which players of *Pokémon Go* have been impacted by gender from its release. As an augmented reality game requiring players to explore the real world for in-game rewards, the gender dynamics of the real

world are always in play, requiring women and members of other marginalized communities to navigate issues of safety and accessibility that their white, male, straight, cis, able bodied counterparts might not even notice.

MALE AS DEFAULT, MALE AS POWERFUL

In looking at sex distribution, I decided to start off by focusing on the most powerful pokémon, using the combat power (CP) statistic provided by the game. The most powerful pokémon a player has are likely to be the pokémon they use most often in gym battles and have spent the most time and resources powering up—for these reasons these pokémon are the most likely to have been given names and identities. When I started asking friends about the gender breakdown of their most powerful pokémon, I asked them to look at their top twelve pokémon by CP. The game organizes pokémon into rows of three, and although different phones may have slightly different aspect ratios, most screens show about four rows before the player has to scroll down. This means that the top twelve most powerful pokémon tend to be visible at the top of the screen when players have their pokémon sorted by CP. Gathering the gender distribution of those twelve pokémon seemed like a small enough sample to be quickly gathered by my generous friends, but large enough for a pattern to start to form. In my informal sampling of six players, every one reported a male majority among their most powerful twelve pokémon and one discovered only male pokémon in his top twelve. I am sure that there are people for whom this is not true, either by chance or through their choice to favor female pokémon post update, but my sample strongly suggested that my experience was not unique.

Next I graphed the sex distribution of my own 75 oldest pokémon. All of these pokémon were caught before the update, had survived numerous rounds of cuts to make way for new catches, and more than a third of them had names and associated

gender identities. For my data visualization, I collected gender and combat power for each of those pokémon and graphed them in Gephi. The dark grey circles represent male pokémon, the pale grey circles with the darker borders represent female pokémon and the single mid-grey circle near the top represents a single nonbinary pokémon (a Ditto, a genderfluid, shape changing species). The size of the circle corresponds to that pokémon's CP. The nodes are grouped by color and roughly organized by size.

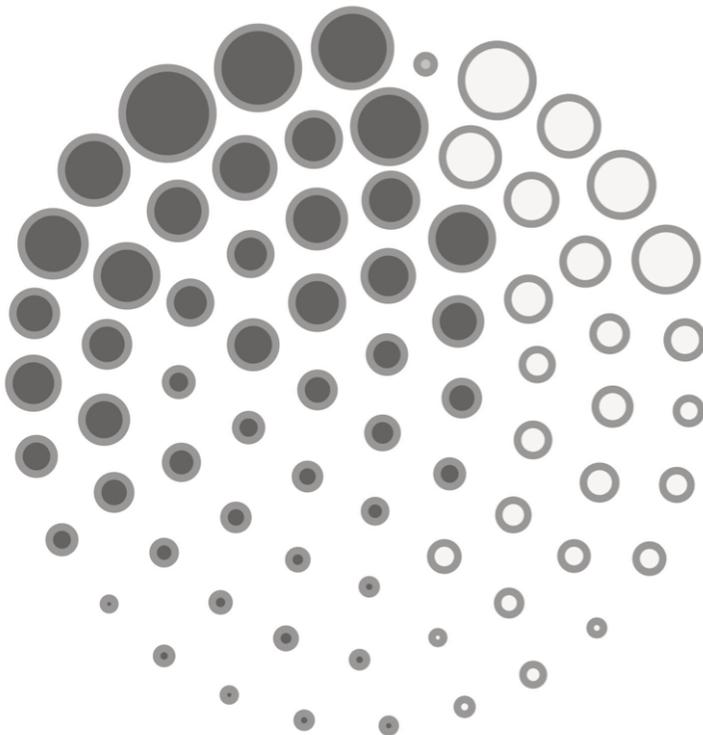


Figure 1. My oldest 75 pokémon, mapped in Gephi to show gender and combat power.

Of this set of 75 of my oldest pokémon, 49 were male, 25 were female and one was nonbinary. On average, the male pokémon

were stronger than the female pokémon. Without knowing exactly how the program assigned gender to existing pokémon or how it assigns it to new ones, I can't definitively speak to why we're seeing these patterns, but I can take a few educated guesses.

One possibility is that in pokémon species with sexual dimorphism, all pokémon that players had caught prior to the widespread release of gender were coded male. Between my and my partner Tom's pokémon, we counted 43 instances of pokémon caught prior to the update who exhibit sexual dimorphism in one or more of their evolutions and every one of them was male. Because players send away a large percentage of the pokémon they catch, and older pokémon are more likely to have already been weeded out, our sample is relatively small, although the numbers are compelling and suggest an ideological male-as-default stance within the game.

This male-as-default stance is problematic in that it treats femininity and nonconformity as a deviation from standard. Sometimes this is subtle and seemingly harmless, as it is in determining which sprites to use in a phone game before gender/sex are fully integrated into the mechanics, but simple decisions about what to include and what to leave out can support ideological assumptions that can have a meaningful impact in promoting discriminatory action (Barton and Barton, 2004 [1993]). Furthermore, the use of strict sexual dimorphism reflects cis-normative gender values. Any pikachu with a heart-shaped tail is female, and any with a pointed tail is male—these presumably biological visual expressions of sex are treated as a clean cut division between female and male pikachu.

While any two players may have a widely different selection of top pokémon, fans on *Ranked Boost* have created a list ranking pokémon by their max potential CP, and this is the ranking that I drew from in identifying the top twenty pokémon for the next step of my research (*Ranked Boost*, 2017). Examining this list

and comparing it to the list of pokémon who exhibit sexual dimorphism provided by *Bulbapedia* (*Bulbapedia*, 2017), I found that three of the top twenty pokémon, two of whom are within the top five, exhibit sexual dimorphism, which may have caused all pokémon of those species to be labeled male during February's update, skewing the distribution of powerful pokémon in a male dominated direction.

A second possibility which could contribute to a male majority among players' toughest pokémon is that the game is dividing pokémon along gender lines in similar ways to previous games in the series. Using *Bulbapedia's* statistics on previous pokémon sex distributions and the ranking list cited above, I examined the top twenty pokémon species in *Pokémon Go* and their traditional sex distribution. Although I can't definitively say that *Pokémon Go* does follow similar sex distributions to previous games, I believe those numbers provide a valuable insight, if only to explore latent biases concerning sex and power that may have found their way into this game.

What I found was striking. Of the top twenty Gen 1 Pokémon species in *Pokémon Go*, ten of them have been predominantly male in previous games. Seven of those species are 87.5% male, three 75% male. The other ten species were equally split male/female. No nonbinary pokémon appeared in the top twenty, nor did any predominantly female species. Three of the top twenty pokémon with an 87.5% chance to be male are evolutions of Eevee and therefore have the same sex distribution, but because Vaporeon, Flareon, and Jolteon rank differently and because these species are so much more common than most of the other high ranking Pokémon, I have included all three evolutions on the chart. Without Eevee's evolutions the chart still shows a strong male slant (see Table 1. for the detailed list).

In previous games, this tendency towards making more powerful species predominantly male has been utilized to make breeding

pokémon more difficult (*Bulbapedia*, 2017), treating sex as nothing more than an indicator of reproductive ability, overlooking the sexist connotations between masculinity and power, femininity and reproduction.

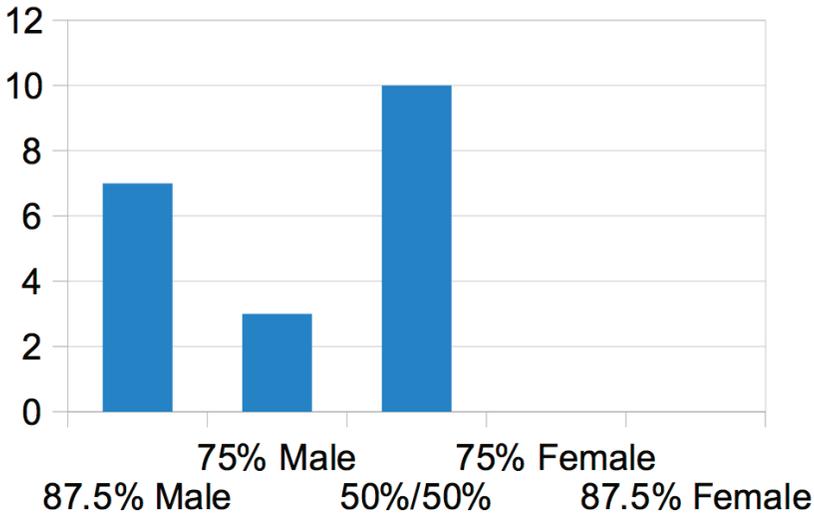


Figure 2. Traditional Gender distribution among the 20 most powerful Pokémon in Pokémon Go.

I chose not to include Gen 2 pokémon in my chart for a few reasons. Gen 2 pokémon were released in the same update that assigned pokémon sex en masse, so the relationship between those pokémon and their sex has been more static—part of my interest is in the transformation of previously sexless pokémon into a male dominated set. Gen 2 pokémon also haven't been part of the game as long, and aren't as widely recognized and known.

While they are not on the chart, I want to mention that Blissey, a pink, frilly, egg bearing pokémon introduced in the second generation, falls between the 4th and 5th pokémon on my chart and has quickly become a gym defense favorite. Blissey is traditionally a female-only pokémon. While it is problematic that

the only female leaning pokémon to rank this highly is visually coded in such stereotypical ways, it is positive that such a very feminine pokémon is so widely used and highly ranked, leading me to believe that most players care more about a pokémon's power than its gender expression. I also excluded legendary pokémon from my chart. Although they were included on the *Ranked Boost* list, they were not yet available in regular play.

If both of these hypothesized effects are influencing the gender distribution of highly ranked Pokémon, the two effects would compound one another—Of the three dimorphic species in the top twenty, two would traditionally be split evenly male and female, while the third already leaned male. If every Rhydon and Gyarados caught in the six months prior to the update is male, then even if newly caught individuals have an equal chance of being male or female the demographics will likely be skewed for some time to come.

Species	% Male in Previous Games	Dimorphic?
Dragonite	50.00%	No
Snorlax	87.50%	No
Rhydon	50.00%	Yes
Gyarados	50.00%	Yes
Vaporeon	87.50%	No
Lapras	50.00%	No
Golem	50.00%	No
Exeggutor	50.00%	No
Flareon	87.50%	No
Machop	75.00%	No
Alakazam	75.00%	Yes
Arcanine	75.00%	No
Pinsir	50.00%	No
Jolteon	87.50%	No
Muk	50.00%	No
Kingler	50.00%	No
Charizard	87.50%	No
Omastar	87.50%	No
Gengar	50.00%	No
Aerodactyl	87.50%	No

Table 1. Top 20 Pokémon in Pokémon Go ranked by power, noting gender distribution and dimorphism. Pokémon rankings from Ranked Boost, distribution and dimorphism from Bulbapedia.

AGENCY

Murray defines agency in games as “the satisfying power to take meaningful action and see the results of our decisions and choices.” (Murray, 1998). In the sexless world of *Pokémon Go* pre update, one element of agency that players held was the power to name their pokémon and in doing so create their identities, including the assignment of gender/sex. I had the power to make my top pokémon a team of warrior ladies, because their gender identity, if any, was in my hands.

Players still have the power to name their pokémon, and the

power to pick names with gendered associations is still in our hands, although the game itself has declared the majority of our toughest pokémon to be male. Some players accept the gender of their pokémon as matching the assigned sex, some resist. Either way, the open ended-ness of our agency to determine the identities of our pokémon for ourselves has been challenged by the developers. It is frustrating that this inclusion of sex favored masculinity so strongly, particularly since early user demographics suggested that significantly more women than were playing the game than men (Mac, 2016). However, despite my frustration with the breakdown of pokémon sex demographics at the moment of the update, the update also did something interesting and powerful: it introduced a strong transgender narrative into what Forbes called “the most popular mobile game of all time” (Mac, 2016).

For players who had not named their pokémon, or had not gotten invested in their pokémon’s personalities and identities, the assignment of sex was not such a big deal. Players I talked to who haven’t made a habit of naming their pokémon reported neutral reactions or mild annoyance at the game’s assignments, and had not spent much time or energy exploring the demographics of their newly sexed pokémon. Long time fans of the franchise reported little surprise at the demographic breakdowns, having been familiar with the traditional sex distribution. Some players noted that the affordances of *Pokémon Go* don’t encourage players to build relationships with their pokémon or get particularly invested in their identities. Ochsner and Saucerman argue that openness to different play styles is one of the factors that has made the pokémon franchise so successful and allowed it to appeal to such a diverse audience (Ochsner & Saucerman, 2015) and I am inclined to agree—all of these different experiences are valid, and I recognize that my attachment to my pokémon and my experience of frustration

when my pokémon's gender identity came in conflict with their assigned sex may not be typical.

For players like me who had named their pokémon, and who had created identities for their favorite pocket monsters and become attached to them, there were a couple of different ways to react to the sex assignment and ways to read and understand those reactions. Regardless of what players chose to do once their named pokémon had sex assigned to them, when this update occurred a large number of pokémon suddenly had sex assignments which did not match their names and identities. That fact alone creates a trans narrative.

When this update occurred, my pokémon had largely feminine identities and were primarily coded male by the game. I chose to read the names and identities I had developed for my pokémon as richer and more valid than the sex assigned by the program. In this reading, the game's assignment of sex is loosely translated to the idea of sex assigned at birth, and the names and identities I chose for my pokémon are metaphors for the lived gender experiences of individuals. Where these two assignments are at odds, I understand my pokémon to be trans and I continue to embrace the chosen names and "lived" identities, disregarding the assignment made on the basis of a few pieces of data in some algorithm or sonogram. I read the sexes assigned by the game not as my pokémon telling me about themselves, but as the game trying to dictate and undermine the gender expressions of my pokémon.

Another reaction is to read the addition of sex as something communicated not by a feelingless algorithm but by the pokémon themselves. In this reading the assignment made by the game is the gender of the pokémon, not necessarily their sex (although players anticipate that sex was introduced in this update as a precursor to the addition of breeding mechanics, which would enforce the assignment as biological sex), and the

player takes a role similar to a parent who's child has just come out to them—changing their name and respecting their identity is a way of supporting and affirming the experience of the pokémon.

Of course, players are free to read either narrative onto their game and to change names or not. A player may choose to see the renaming of pokémon as an erasure of gender nonconformity just as easily as they can read it as an affirmation of identity. They can read choosing not to rename a pokémon as forcing that pokémon into a gender expression which does not match its identity just as easily as they can read it as a refusal to conform to external pressures. Ultimately, the game doesn't care, and the little chains of code that make up the pokémon within *Pokémon Go* don't actually experience gender. All of it is in our heads—but that doesn't make it less interesting or important.

By challenging my understanding of my pokémon's genders, the game pushed me to be less cis-normative. Had the game assigned sex from the beginning, I may not have questioned those assignments the way I did when they came into conflict with my pokémon's established identities. Realizing this has prompted me to continue ignoring the game's assignment of sex and to recognize and challenge my own tendencies towards cis-normativity.

The game developers almost certainly did not intend to insert trans narratives into *Pokémon Go* with this update, but as Barthes has been arguing for decades, the intent of the author doesn't matter nearly as much as the ways in which the audience understands the text (Barthes, 1968). The addition of sex to *Pokémon Go* is a polysemic narrative—there are a variety of ways of reading and understanding the update (Hall, 2012 [1977]). This feeds into a different concept of agency in video games, described by Voorhees, who argues for looking at agency not as the ability to impact the game world but as “the ability to create

meaning in a situation not of one's own making." (Voorhees, 2014). Players lost the ability to decide the sex of their pokémon along with their gender, but they gained interpretive opportunities in navigating the tension between the game's sex assignments and the gender assumptions inherent in previously assigned names.

AUGMENTED REALITY AND PLAYER IDENTITY

Although other scholars are getting into questions about the ways augmented reality games intersect with player identity more deeply, I would be remiss to write a paper about identity and agency in *Pokémon Go* without at least touching on these issues. Real world challenges and inequalities can have a huge impact on a player's interaction with any game, but even more so with augmented reality. Early after the game was released, a whole slew of articles and opinion pieces started popping up, expressing fears about the ways in which players might endanger themselves in the pursuit of animated monsters. Of these pieces, one of the most widely shared and discussed was Omari Akil's article "Warning: Pokémon GO is a Death Sentence if you are a Black Man", exploring issues of racial inequality and the dangers of wandering around town trying to catch pokémon as a person of color in a time and place where police violence is a harsh reality and people of color are viewed with suspicion for performing even the most ordinary of daily tasks (Akil, 2016). Other authors expressed fear that children could be lured into dangerous situations, and that inattentive game players could be taken advantage of.

In the *Pokémon Go* panel at the Southwest Pop Culture Association Conference this February, each scholar on the panel expressed different concerns about inequality or safety issues built into the game. Nicole Dilts explored the ways in which *Pokémon Go* can be inaccessible for people with limited mobility or fine motor skills, centering her study around her experience

playing *Pokémon Go* with her autistic son. Jamie Henthorn looked at *Pokémon Go* as a fitness app and touched on some of the ways in which women are forced to be more careful than men whenever they're out in the world, something that women runners have long been aware of but which the *Pokémon Go* community has not yet really addressed. The ways in which population density influences the playability of the game also came up in panel discussion, as the game favors players in urban areas over those in rural ones (Dilts et al, 2017).

Through no malicious intent, *Pokémon Go* has managed to favor the same demographic that many games favor: Able bodied white men. Many of the factors weighing into this are outside of the developers' control, although perhaps more could be done to actively work against the systematic disadvantages faced by women, individuals with disabilities and people of color. These would be challenges for any augmented reality game entering the market at this time, and we explore them through *Pokémon Go* not because *Pokémon Go* is bad, but because it is one of the first major forays into this new territory. The things that scholars and game developers learn watching *Pokémon Go* will be important lessons for future explorations in this field.

CONCLUSIONS

The addition of assigned sex to pokémon in *Pokémon Go* is complicated for a number of reasons. The developers seem to be building upon previously established demographics in their assignment of sex among pokémon, and to have made all pokémon within species that exhibit sexual dimorphism male when the update introduced sex, choices which have supported stereotypes which treat masculinity as default and powerful. The update also created tension between gender identities assigned by the players in naming their pokémon and imagining their identities prior to the update, and the sexual identification assigned by the game, unintentionally inserting trans narratives

into a mainstream mobile game. This is a potentially powerful thing.

There are many opportunities for game developers to speak their values through their games, and to do it without being pedantic or condescending towards their audiences (Flanagan, 2009). When developers treat female characters as a mechanic for reproduction, they place value on women only in so far as they are capable of reproduction, something that many women are unable or uninterested in doing. When developers make the majority of their toughest fighters male, they play into stereotypes about masculinity and power. When they suddenly assign sex to previously ambiguous characters, they ask players to navigate the tension between sex and gender and to find a way of coming to terms with that tension, even if those narratives were unintended.

As I argued in my presentation “Visual Rhetoric and The Silence of Our Friends,” sometimes the most seemingly trivial media can allow political content to get through resistance and opposition much more easily than well respected, serious and overtly political media (Bannister, 2017). In that paper I discuss music and comics as methods of fighting racism, here I see tremendous opportunity for games like *Pokémon Go* to subtly, quietly, include trans narratives into their game, battling cis-normativity while their players continue their quests to “be the very best”, and “catch ’em all” (Pokémon Theme 2008 [1998]).

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SO CLOSE YOU CAN FEEL HER

Prostitution, Proximity & Empathy in Grand Theft Auto 5

ELENA BERTOZZI, AMELIA BERTOZZI-VILLA

By Elena Bertozzi, Amelia Bertozzi-Villa



GTA 5 Prostitute inside of car. Credit: Screenshot from Let's Play "GTA V First Person – hooking up with a prostitute" (Marnu TV, 2015)

ABSTRACT

The Grand Theft Auto games franchise is notorious for rewarding players for having sex with prostitutes and then killing them. In early GTA games, this encounter was experienced by the player from a 3rd person perspective and included the irony and satire that characterized the franchise.

The latest GTA game, *GTA 5*, differs from earlier versions in that players can play from a 1st person perspective, a feature that transforms encounters with prostitutes in the game. Rather than allowing players to enjoy breaking taboos as the earlier games did, these encounters in *GTA 5* cause players to express arousal, disgust and even empathy. This paper analyzes published videos of expert gameplay, author dialog in the videos, and comments posted by viewers. These demonstrate that by shrinking the distance between the player and the prostitute, Rockstar Games has created a game environment which elicits very different responses than earlier versions of the game. This analysis suggests that increasingly realistic and immersive media could positively influence participants by eliciting empathy.

Grand Theft Auto 5 was released on multiple consoles between 2013-2015, winning numerous awards and the distinction of the fastest selling media product in history (\$1 billion in the first 3 days after release) (Macy, 2016). The game retains many of the features of previous GTA titles with some notable changes, particularly in regard to how players interact with the game's many prostitutes. *GTA 5* features much higher quality and more realistic graphics and, unlike previous games where the player was restricted to a 3rd person view, in *GTA 5* the player can switch between a 1st person or 3rd person perspective throughout the game. When playing in 1st person view, the player experiences the encounter with a prostitute from beside or directly underneath her while she is simulating a sex act. This proximity appears to affect the way players feel about themselves and this aspect of the gameplay. Given that Grand Theft Auto titles, and the prostitute interactions in particular, have often been criticized as promoting immoral and other anti-social behaviors (Gabbiadini, Andrighetto, & Volpato, 2012), it is interesting to consider whether this new virtual proximity triggers a deeper physiological and/or emotional engagement in

players and possibly an empathetic response to the game that includes moral self-reflection.

Part of the pleasure of the GTA play experience is the opportunity to break taboos without consequences (Bertozzi, 2008; Embrick, Wright, & Lukács, 2012). Players can engage in a whole range of activities that are considered “bad” – shooting at police, running down pedestrians, destroying vehicles, and participating in criminal gangs, among many others—and enjoy the thrill of doing things that they would never do in real life, without any downside. Encounters with prostitutes in earlier games were part of this type of experience. Engaging in a commercial sex transaction is condemned by many societal norms and the game amps up the illicit possibilities by allowing, and indeed encouraging, the player to kill the prostitute after the encounter. Completing a sex act with a prostitute increases the player’s health score. If the player chooses to kill the prostitute afterwards, the money the player initially paid to her is returned (Maly, 2008). This feature is often highlighted in discussions of the game’s moral turpitude (Campbell, 2014; Stuart, 2014).

The ability of the player to enjoy these activities may be predicated on an understanding of prostitutes as Other – a marginalized group which has forfeited the right to be treated as a human equivalent to oneself (Sawyer, Metz, Hinds, & Brucker, 2001). The change from a 3rd person to a 1st person perspective that players experience in *GTA 5* could alter their ability to enjoy being “bad” if something occurs that creates a personal connection to the subjects of harm which may elicit empathy. This is partly due to the reduction in perceived distance from the action being committed.

In this sense, the visual POV [point of view] acts as a formal feature of video games that determines the player’s psychological connection to the avatar by visually presenting how separate the visual representation of the character is from the player. Depending on the player’s POV, incoming sensorial information is processed in

a frame where locations are either centered around another person (third-person POV) or one's own perspective (first-person POV).(Lim & Reeves, 2009, pgs. 352-3)

The feeling that the player is actually in the scene with the prostitute is heightened by higher fidelity graphics and immersive audio tracks. Researchers who have studied morality in videogames have found that how players experience morality in gameplay varies widely based on the type of gameworld and gameplay, consequences of actions, and the distinctness of the separation between play and the world outside of the play space (Joeckel, Bowman, & Dogruel, 2012; Raney, 2011; Sicart, 2013).

This paper considers the ways that the shift in player perspective (from early GTA games to *GTA5*) can change players' perception of the acceptability of acts inside the game. Zagal states that games can be considered ethical frameworks in that the designer rewards certain actions (which makes them "good") and punishes others. However this simple binary is rendered more complex in games with more complex choices for players (Zagal, 2009). Some games now explicitly create opportunities for what Sicart calls "wicked problems" (2013, p. 32) which require the player to actually exercise ethical thinking. The Grand Theft Auto series has not historically been among these games. Zagal argues that a game can be considered "ethically notable" if it "is one that provides opportunities for encouraging ethical reasoning and reflection." (2009, p. 7). Below we examine evidence that suggests the 1st person prostitute encounter might elicit this kind of self-reflection among players which in some cases leads to empathy (Coplan, Goldie, & Oxford University Press., 2011).

Due to the sensitivity of the subject matter, it is difficult to design a study where players interact with this game in a research setting. There are, however, forums where players interact with each other and share their experiences with videogames. Expert players post videos of themselves playing games which allows

viewers to watch what happens in the gameworld while listening to the author's commentary and advice. These videos are called "Let's Plays" and can attract large numbers of viewers.¹ By analyzing the content of these videos, the commentary of the player authoring the video, and the comments posted by those who watch them, it is possible to analyze how prostitute encounters in the GTA series and responses to them have changed over time.

Unlike previous GTA games where the environment emphasized the distance between the experiences and choices that the player makes in the game from those in real life, the intimacy of the encounter with prostitutes in *GTA 5* makes the simulated sex feel extremely personal, intimate, and real. The nature of some of the contents of the Lets Play videos and comments on those videos suggest the player can feel as though he is actually involved in a sexual experience with a prostitute. Research in cognitive science supports this possibility.

When we see the body part of someone else being touched or caressed or when we see two objects touching each other, our somatosensory cortices are activated as if our body were subject to tactile stimulation. Empathetic feels can no longer be regarded as a matter of simple intuition and can be precisely located in the relevant areas of the brain that are activated in both the observed and observer. (Freedberg & Gallese, 2007, p. 201)

We see evidence of strong physical and moral engagement in the game through analysis of player comments referencing arousal/pleasure, disgust/disapproval, and embarrassment/shame. Numerous references to using either the prostitute encounter in the game or the Let's Play videos of the prostitute experience

1. "A Let's Play (commonly referred to as an LP) is a video, or less commonly a series of screenshots, documenting a playthrough of a video game, usually including commentary by the gamer.[1] A Let's Play differs from a walkthrough or strategy guide by focusing on an individual's subjective experience with the game, often with humorous, irreverent, or critical commentary from the gamer, rather than being an objective source of information on how to progress through the game" (Wikipedia, 2016)

for the purposes of masturbation (JoblessGarrett, 2014) further suggest that both authors and viewers of the videos experience a state in which “beholders might find themselves automatically simulating the emotional expression, the movement or even the implied movement within the representation” (Freedberg & Gallese, 2007, p. 197).

METHODOLOGY

Data were collected March-May 2016. Google searches were conducted on YouTube and Daily Motion for the following search terms: GTA Hookers, GTA Prostitutes, and 1st person (for *GTA 5*). The highest ranked and most viewed videos for these terms during this period were included: 3 videos documenting play in *Grand Theft Auto 3*, *Grand Theft Auto 4* and *Grand Theft Auto 5* respectively. For the purposes of this paper, only the initial comments posted by viewers of videos were collected. Responses to comments are included in the overall comment count, but were excluded from the coding to avoid repeated posts by any individual and because they are often tangential. The number coded is indicated by the total comments number, followed by the number of comments scraped to the spreadsheets in parenthesis: i.e. 324(180). Coders included college-age males who have played the GTA games to ensure that the jargon used in many comments was coded correctly.² Comment categories were defined to determine if the content and tone of comments differed between 3rd person and 1st person depictions of the prostitute encounter. Collected comments were coded into the following categories:

- questions/ comments on play strategy and techniques [q]
- sexual pleasure/arousal [a]
- disgust/disapproval/shame [d]

2. Many thanks to Evan Rosoff and Chris Laferriere for their assistance with coding, and Zachary Kohlberg for the YouTube comment scraping tool.

- humor [h]
- other/tangential [o]

The final category includes comments that are ambiguous or too terse to interpret.

Inter-rater reliability (IRR) was assessed three different ways: by simple percent agreement, Fleiss' Kappa (an extension of Cohen's Pi to more than two coders), and Krippendorff's Alpha (Krippendorff, 2004). There is no universally-agreed upon cutoff for a "high" value of IRR, but values of percent agreement above 88%, of Fleiss' Kappa above 0.75, and of and Krippendorff's Alpha above 0.8, are generally considered excellent.

In many cases (54.8% of the total), all three coders assigned a comment to the "other/tangential" category, which is not of direct interest to this analysis and artificially increased IRR values. All IRR analyses were thus repeated excluding the cases in which all coders agreed that the comment was "other/tangential". IRR was calculated for each of the three GTA games individually, as well as overall. All analyses were conducted in R version 3.3.1. See Appendix A for details.

CONTENT OF VIDEOS AND COMMENTS

There are stark differences in the content of the Let's Play videos and the number and tone of comments posted to those videos when the perspective of the prostitute encounter shifts to the 1st person POV. Videos from the earlier GTA games are similar to Let's Plays for other games in that they focus on how to play the game, demonstrate the author's expertise in achieving game goals (in this case successfully having sex with the prostitute and then possibly killing her), and exploring parts of the game that are funny or otherwise interesting. Comments on these videos consist primarily of questions about how to do what the video author did or comments on his gameplay or video publishing

skills (see the percentages coded [q] below). The Let’s Play videos from the *GTA 5* 1st person encounter with a prostitute, on the other hand, include numerous comments that demonstrate that the author himself is somewhat uncomfortable with the content of the video he is producing and that he is aware of the fact that viewers of the video might use it for masturbation. The comments on these videos include far fewer comments on gameplay and numerous references to disgust and disapproval, sexual arousal, and masturbation (jargon for which is “fap” or “fapping”) (see the percentages coded [a] and [d] below).

Prostitute encounters in *GTA III* (released 2001):

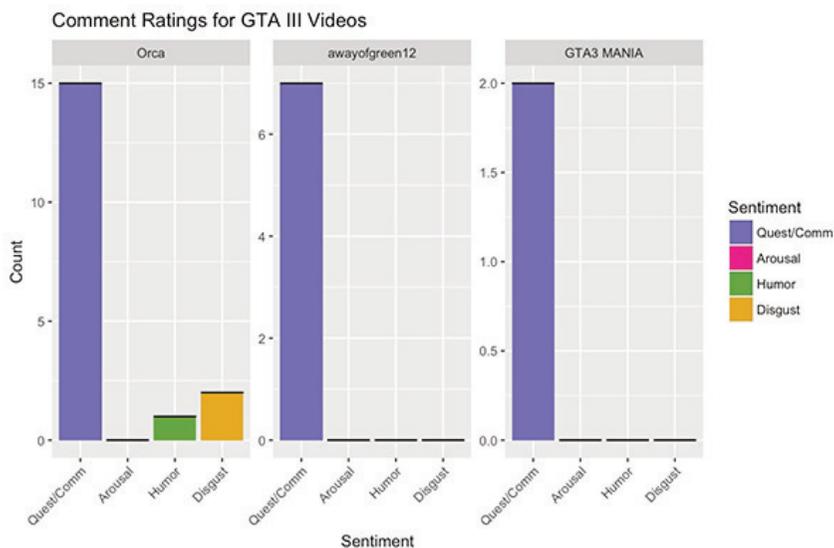


FIGURE 1: Mean comment distributions for *GTA III* videos. Error bars indicate the minimum and maximum number of ratings across graders.

These three videos have no voiceover. The author demonstrates (either just by showing gameplay or adding text instructions to the screen) how to find prostitutes, get one in the car, and then have “sex” which is indicated by the car shaking rhythmically and making squeaking and rocking noises.

The quality of the graphics is very basic with few individual differences between prostitutes.



*Prostitute encounter in GTA 3. The only view is from outside the car which is shaking.
Credit: Screenshot from Let's Play "How to get a Hooker in Grand Theft Auto 3 (Orca, 2012)*

Comments on these Let's Play videos focus on technical issues (Figure 1). This process is not necessarily easy and players who leave comments complain that they are unable to get prostitutes in the car at all. Gunleashed (a forum that provides cheats and other hints to players) provides a help page for *GTA III* that explains the importance of having the right kind of car, knowing when and how to honk the horn, finding areas where prostitutes are on the streets at nighttime, and driving to a secluded spot in order to get things started (JollyRoger, n.d.). There is no in-game dialog and the only visuals are the car jumping up and down which is seen from several yards away. In the *GTA III* prostitute encounter, the process is tinged with a feeling of tongue in cheek irony as are many other parts of the game (Dymek, 2005). The car's movements and sounds are funny and the fact that it is actually difficult to convince prostitutes to get into the car emphasizes the fact that the male in the car is not necessarily the

one in charge. The process is very similar in other early games (*GTA Vice City* and *GTA San Andreas* (imperfectplayers, 2016)).

There is no sign that either players or commenters view the acts depicted in the game as anything other than a skill to be mastered, much like defeating a boss or solving a puzzle. Neither disgust nor arousal is expressed in any substantive way in the comments or content of these videos.

Prostitute encounters in *GTA 4* (released 2008):

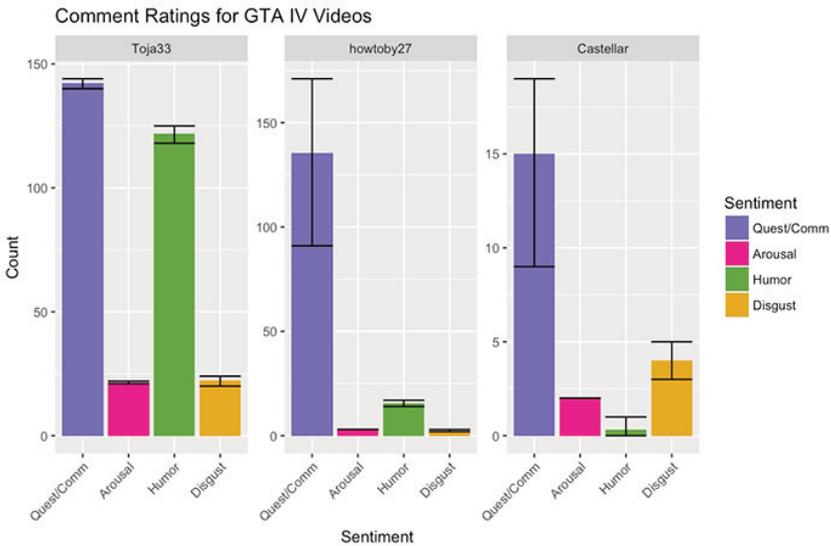


FIGURE 2: Mean comment distributions for *GTA IV* videos. Error bars indicate the minimum and maximum number of ratings across graders.

In *GTA 4* the gameplay becomes more realistic, and there are associated changes in viewer opinion (Figure 2). The player chooses from 3 differently priced services, the graphics are higher quality and there is more in-game dialog. The view of the scene is slightly more defined: the game camera is still outside the car but a woman moving up and down on a man’s lap is clearly visible, also the player can rotate the camera around the outside of the car.

The top three Let's Play videos for *GTA IV* all demonstrate the process of finding and having sex with a prostitute, but each author demonstrates his expertise in a different way. Toja33 edited together a compilation of a sequence of prostitute encounters with the game avatar Nico (Toja33, 2011). The dialog in the video, rather than simulating a realistic sexual experience, features the irony and humor that characterize earlier games in the *GTA* franchise (Jahn-Sudmann & Stockmann, 2008; Miller, 2008). For example, the first prostitute Toja33 encounters says "You're my first of the day, lucky boy, no sticky mess for you." He replies "Thank God my mom cannot see me now... what has become of me... I am a hired killer and I pay for sex, my mother would be ashamed." When he picks up another, he says "I really need to hate myself, get in. With a third, he says "I need to be someplace really desolate for an act as lonely as this." The in-game dialog creates a situation in which Nico is mocking himself for hiring a prostitute in a way that both acknowledges and adds levity to his actions. The comments on the video focus on the twisted humor of the situation, comment on the author's demonstrated skills or ask how to do something in the video. Only 21 of the 590 coded comments suggest that they are sexually aroused by the video while 22 express disgust.

Howtoby27's video details how to go to the right part of the map to find prostitutes and the sometimes difficult process of finding one on the street and honking so that she gets in the car. Again, the attitude of this video is one of humor and irony (for example, the onscreen text at one point reads "Do not confuse ugly men for hookers, they'll get pissed" (howtoby27, 2011)). Only 15 seconds of the 6:29 minute video show the outside of the car during the sex scene. The focus of both the video and the comments are on gameplay and technique. Three of the coded comments reference arousal and two disgust.

Castellar's video is very similar to Howtoby27's, but with better

video quality (Castellar, 2010). The majority of comments ask for help or comment on the author's expertise.

While a few viewers of the GTA IV Let's Plays are aroused or disgusted by the acts depicted, the vast majority of viewers still find these actions to reside within the moral purview of gameplay, and focus on more technical questions/comments or humor. In sharp contrast, the majority of *GTA 5* commenters express disgust or arousal at the scenes they witness.



Prostitute encounter in GTA 4. (Top)The quality of the graphics is such that the prostitutes in the game lack definition. (Bottom) View is still from outside the car, but prostitute can be seen moving inside. Credit: Screenshots from Let's Play "GTA 4 Sex with prostitute" (Castellar, 2010)

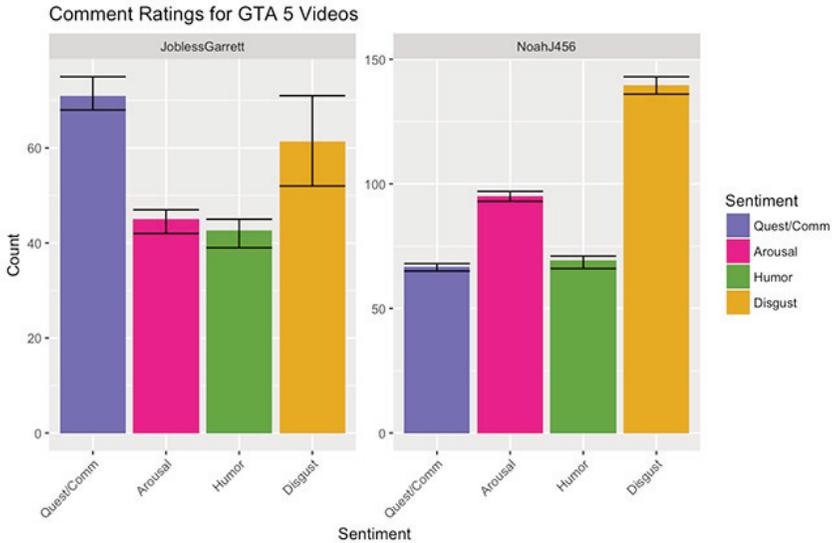


FIGURE 3: Mean comment distributions for GTA 5 videos. Error bars indicate the minimum and maximum number of ratings across graders.

The switch to first person play in *GTA 5* represents a paradigm shift in viewer opinion of the sex/murder acts depicted. Now that both the perspective and the prostitutes are more realistic, viewers have more trouble separating the gameplay from the moral ‘consequences’ of their actions (Figure 3).

The most watched Let’s Play videos of prostitute encounters in *GTA 5* (in addition to having significantly more views) are quite different in tone. The first challenge, as in previous versions of the game, is to get a prostitute in the car at all. This aspect is much the same except that the player can approach and proposition them from a first person view. This perspective shift is quite dramatic especially given the notable increase in pixel definition which makes each prostitute recognizably different from others in the game.



Different prostitutes in GTA 5. The graphics quality has greatly increased so each prostitute is clearly recognizable as a different woman with individual characteristics. Credit: Screenshots from gameplay.

When she is in the car, pricing options appear in the top left corner of the screen and the player picks which kind of service he would like to have (\$50 for a blow job, \$70 for sex, \$100 for sex).³ The prostitute dialog is very personal, specific and much less ironic. The prostitute's comments regarding how aroused she is and how fantastic her client is can be understood as irony, but could just as easily be taken at face value by a gullible client/player. The authors of these three videos all express some degree of discomfort with what they are doing.

JoblessGarrett introduces the activities with the following

3. There is some debate about why there are two prices for what appears to be the same act. In a nod to the realism of the simulation, some players think that the third option is for anal sex. One commentator in a forum discussing it says "Why is this even a thread.. I just don't even..."(Ronrollin9434, 2013)

justification. Note that he conflates the avatar (Michael) with himself and his viewers (“completed on us”):

That’s right we are getting a prostitute today and we are going to go and have some services performed on Michael. Now Michael is a married man, but hey a man has his needs and today we are going to have 3 services completed on us—the \$50, the \$75 and the \$100 services from this lovely lady that is a prostitute. And I don’t know her name, who cares what her name is. She has a job to do and let’s get right to it. Now I’m gonna be quiet for most of this video because I want you guys to get..., you know the whole thing that’s going on and this is going to be in 1st person. A first person look at prostitution so here we go. (JoblessGarrett, 2014)

His tone is somewhat stilted and he does not speak during the sequence below, until she gets out of the car and he explains that it is part of the whole thing to kill her so he backs the car over her and gets his money back.

He selects the services in sequence and the prostitute moves her body over the avatar and continues to move appropriately for the act she is performing while making loud sucking sounds in the case of oral sex, or yelling encouragement in the case of intercourse. This is the dialog transcribed from the video:

[during oral sex]

I love your cock, it tastes so good [groaning from Michael throughout]

you like getting your dick sucked like that?... you’ve been eating asparagus....You’re still hard, want something else?



Two views of the prostitute encounter in GTA 5. On the left is as she is negotiating the act, on the right is the view just before intercourse. Credit: Screenshots from Let's Play "GTA 5 First Person –PICKING UP A PROSTITUTE GTA V HOOKER Pick Up" (JoblessGarrett, 2014)

[during intercourse]

that feels so fucking good, yah baby fuck me just like that, my pussy is so wet right now. I'm gonna give you the full deal, rub my tits, just like that, I'm gonna make you fucking come baby. My pussy loves you. You ain't gonna leave me here all wet are you?... god you're so hard.. that's it, that's it, god that feels so amazing...Fuck me. this is the nicest cock I've ever seen. .. That feels so fucking good. Wow you're a fierce one. I feel like I can really talk to you. Come back and see me? (JoblessGarrett, 2014)

This video had 1,878,712 views and almost 2000 comments on the day of coding, partly because this video was linked to a successful petition to ban the sale of *GTA 5* in Australia (Survivor, 2015). The nature of the comments differs dramatically from earlier *GTA* versions. 45 comments express arousal, with many references to boners and fap. The 61 comments expressing disgust cite a range of reasons for discomfort and awkwardness including pity for the voice actors: "i feel sorry for the girl who did the voice acting and motion capture for this"(JoblessGarrett, 2014). Only 41 express humor.

Some of the players recording and narrating Let's Plays of this part of the game are clearly nonplussed. It is not a visually explicit experience because Rockstar Games (having learned

from the fiasco of the Hot Coffee Mod (Crecente, 2009)) does not include any imagery of a sexual nature at all. The player does not see anything but the woman's head going up and down in his lap or her torso moving up and down directly in front of him, however the experience is extremely sexual because the visuals and the audio very convincingly simulate the experience of a sexual encounter. Additionally, the player's controller vibrates in sync with the prostitute's movements.

Have Fun's video was originally recorded during a live-streaming of gameplay with 600 viewers watching while he taped it. During his voiceover he seems both embarrassed and shocked by what he is doing and broadcasting:

(starting at 2.19) Whaaat.. my controller's vibrating..that's kind of... I know you guys wanted to see this so hopefully you enjoy. Wow let's try the one underneath that 75\$ and see what it gets us. We have 600 people watching this, this is not weird at all, I promise you, then it will go on YouTube and who knows how many people will watch it on there. My controller vibrates every single time she goes down. Try out the \$50 dollar service [view changes to girl's head in his lap moving up and down for blow job] Jesus! What! Nooo nooo wow My controller vibrates again. Jesus. ..[silence] It used to be what E Teen, M. There needs to be some kind of GTA level of like Mature.... That's fucked. So there you go hopefully you guys enjoyed subscribing..and stuff.. and I will see you.(Have Fun, 2014)

He explicitly refers to the fact that many are watching (which is generally the goal of making this kind of video) and that it is "weird". This discomfort appears to stem both from knowing that people are watching his 1st person POV avatar (by extension himself) in the game publicly engage in sex acts and that he is titillating other male viewers with his video product.

The most watched of all the videos published on *GTA 5* prostitution has 7,726,498 views. It is notable for several reasons in addition to the sheer number of people who have watched it.

The author's (slightly shortened for clarity) commentary prior to the start of the actual sex scene (during which he is silent) clearly demonstrates embarrassment:

Here is my most requested video for GTA5.... I've been getting tweets, I've been getting comments, I've been getting every single kind of social media possible asking me to do this in a video. Here you are you filthy sickos... you finally got me to do this... here it is, I hope you enjoy and you, gosh, I don't want to say it, I hope you enjoy the rest of the gameplay. I'll let you watch it, see you later.(NoahJ456, 2015)

It is clear from his tone that he is embarrassed by the content of the video and the fact that he knows that viewers are going to "enjoy" it in a way that makes him uncomfortable. Even more curious is the fact that he actually censors his own video (though his reasons may also include avoiding an M rating on his video). The scene in the car is similar to the ones depicted above, but after that he includes a section on going to a strip club and moving into a private room with one of the strippers. In the private room scene, he covers the more explicit parts of the screen with an image of a man's face as is visible in the screenshot below, note that under the publication date, he also writes: "You sickos made me do this."



Self-censored GTA 5 Let's Play with "You sickos made me do this." Credit: Screenshot from YouTube page. Video has been removed from YouTube.

Of the 1172 coded comments, 95 (93-97) indicate arousal, including numerous references to having used the video to masturbate. Only 69 (66-71) think it is humorous, and 140 (136-143) express shame or disgust.(The ranges in parentheses beside the categories indicate differences in totals between the 3 coders.) The fact that the realism in *GTA 5* actually detracts from gameplay has been discussed regarding other parts of the game (Cassels, 2013), but it is particularly impactful in the prostitute encounters. Although there are many comments on the content of the video, there are few questions about the gameplay or the author's expertise (67 (65-69)) because there really is no expertise

required of the player and what is happening on the screen does not appear to be play.

People external to the community of GTA players have been criticizing the prostitute encounter in the game since *GTA III* without much impact. Player responses to *GTA 5* demonstrate that by closing the distance between the player and the sex worker, the game's developers may have triggered what Elias defines as "the civilizing process" by which views regarding the acceptability of certain behaviors by subsets of the general population are changed.

They, too, are increasingly subject to the kinds of external compulsions that are transformed into individual self-restraints; in them, too, the horizontal tension between a self-control agency, a "super-ego", and the libidinal energies that are now more less successfully transformed, controlled or suppressed, increases. In this way civilizing structures are constantly expanding within Western society; (Elias, 2000, p. 381)

There are some suggestions that the increased intimacy of the player with the prostitute makes it less likely that the player would want to kill her afterwards even though the game rewards the player for doing so. A GameFAQs poll asking "Do you kill prostitutes after sex in *GTA V*?", reports that out of 115 gamers 31.3% do so all the time, 35.65 percent sometimes and 33.04% never do (Megamushroom666, 2014). One of the *GTA 5* game wikis goes to far as to suggest that it is simply not a gentlemanly thing to do: "[As a side note, be the nice guy and please DON'T kill the escort when she leaves. That's just tasteless.]" (IGN, 2014). A comment on the JoblessGarrett video states: "Seeing someone do this in first person it seems even more heinous. I know its a game and I know hookers aren't people, it's just- she did such a good job... She earned that money you soulless prick!"(2014, comment 225).

Our analysis of these videos suggests that higher fidelity graphics and a first person perspective in *Grand Theft Auto 5* transform player experience of and reactions to some features of the game. Increased intimacy appears to trigger a range of emotional, empathetic and moral responses including ones that are pro-social. Future research could attempt to quantify the effects and explore impacts on player behavior outside of the game. It is interesting to consider the possibility that a game notorious for appearing to promote violence against sex workers may increase empathy towards them when it depicts them as more human. As hardware and software converge to provide players with closer and more intimate connections to game avatars, it will be interesting to observe the impact on players' attitudes and how this affects future game development.

APPENDIX A

Inter-Rater Reliability Analysis

See Table 1 for a breakdown of IRR scores. The three GTA 3 videos, which had relatively few comments, featured almost entirely question/comment posts and had no disagreement among raters. *GTA 5* featured excellent IRR by all metrics, while *GTA 4* showed more disagreement between raters, especially once comments unanimously coded as "other" were removed (71.6% agreement, Fleiss' Kappa and Krippendorff's Alpha scores of 0.70). To explore this discrepancy, we examined all cases in which there was imperfect agreement between raters of *GTA 4* comments (157 comments of 552 total), and found that one rater (CL) coded far more comments to the "question/comment" category, whereas the other two raters coded more comments to the "other" category (Figure 1). This discrepancy may have arisen from unclear distinction between the two categories or ambiguity in the comments themselves.

		GTA 3 (All:34, Reduced: 27)	GTA 4 (All:852, Reduced: 552)	GTA 5 (All:1824, Reduced:645)	Overall (All: 2710, Reduced: 1224)
All comments	% Agreement	100	81.6	93.7	90.0
	<u>Fleiss' Kappa</u>	1.0	0.81	0.92	0.89
	<u>Krippendorff's Alpha</u>	1.0	0.81	0.92	0.89
Reduced (Without "other" category)	% Agreement	100	71.6	82.2	77.8
	<u>Fleiss' Kappa</u>	1.0	0.70	0.85	0.80
	<u>Krippendorff's Alpha</u>	1.0	0.70	0.85	0.80

Table 1. Inter-rater reliability (IRR) metrics for the rating of comments in each of the three GTA games.

The “Reduced” dataset refers to a dataset in which comments that were unanimously coded as “other” were excluded. Comment counts in the full and reduced datasets are given underneath the game name.



Figure 4: Breakdown of coded categories for the 157 GTA 4 comments for which there was not unanimous agreement.

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LEARNING AT THE FARM: DEVELOPMENTAL PSYCHOLOGY IN PEEKABOO BARN

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Night and Day Studios' *Peekaboo Barn* is a cute little game about farm animals; the game can be played in its entirety in just a few minutes. But, it is also a giant in the toddler app market. When released in 2008, *Peekaboo Barn* was at the forefront of what has since become a growing market of games and apps for very young children. Despite growing competition, however, the game has retained its appeal and its visibility. *Time Magazine* has listed it among the "Top 25 iPad Apps for Kids" (Sharick, 2012), *Wired* recommended it as one of the "top 12 apps" for family iPad use (Donahoo, 2010), and *App Advice* has called the original *Peekaboo Barn* an "iconic kids app" (Dirks, 2014) As of 2015, the game had been a top 25 educational game on the increasingly flooded iTunes App Store for seven years running, and it has been played over 80 million times ("Peekaboo Barn").

While doubtless some of the appeal of *Peekaboo Barn* can be attributed to the game's early entry into what has turned out to be a growing section of the app market, this is not enough to account for the game's longstanding appeal. Like most games

for children, *Peekaboo Barn* is a game purchased by adults who are not the intended player demographic for young players who are only ever indirectly consumers—this is particularly true in the case of games in the toddler market, which generally target 1-3 year olds. The game succeeds in part because it manages to appeal to adult sensibilities and expectations of what an app for children should look like and how children’s play time should be spent. That said, while apps for toddlers must get past adult purchasers, they must also provide engaging, satisfying experiences for toddlers. Adults’ and children’s sensibilities and desires are often at odds; those that most delight young viewers often grate on grown-ups, as evidenced by headlines like “18 Reasons Why Parents Can’t Stand Caillou” (Silverman, 2015) and “19 Incredibly Annoying Characters on Kids’ TV Shows” (Spohr, 2015). However, *Peekaboo Barn* manages to attract both adults and children.

Peekaboo Barn works, we suggest, not only because it is charming—although it is—but because it carefully works with children’s developmental abilities to provide an optimized play experience that seamlessly integrates educational content. In blending play and educational content, it presents the kind of instructional environment that Malone and Lepper (1987) identify as intrinsically motivating; players in such an environment “are motivated to learn in the absence of obvious external rewards or punishments.” This article focuses on the combination of ludic pleasures and educational interactions presented in *Peekaboo Barn*. We describe elements of the game’s design, emphasizing in particular how the game elicits player engagement and provides players with feedback. We discuss this through the lens of cognitive principles derived from developmental psychology (Miller & Kocurek, 2017). Fundamentally, we argue that *Peekaboo Barn* demonstrates the ways developmental psychology can be successfully leveraged in the design of games for use by young children. Using *Peekaboo*

Barn as an example, we argue that principles from developmental psychology can provide a useful means to not only optimize games for young children for educational and developmental outcomes, but also for player engagement and enjoyment.

GAMEPLAY

Peekaboo Barn incorporates aspects of play readily recognizable from other toys, many of them pre-digital. The folk song “Old MacDonald Had a Farm” is a mainstay on children’s albums. Toy pigs, cows, horses, chickens, and other farm animals are readily available from dozens of producers, and some of the earlier talking toys introduced to the market incorporated animal sounds from this group. The Mattel Farmer Says See ‘N Say was first introduced in the mid 1960s, and Fisher Price’s Little People line introduced its iconic Play Family Farm in 1968; the toy barn’s popularity can be attributed in part to the “Moo-ooo door,” which made cow noises when opened (Lammie, 2010). Both toys have remained popular and vintage versions are sought after by collectors even though both are still being produced. Thematically, this means that while *Peekaboo Barn* is innovative in bringing this type of play to touchscreen devices, namely smart phones and tablets, it is building on an existing understanding of children’s play and learning—one already familiar to parents and educators. *Peekaboo Barn*’s innovation is not in its content, but rather in its mode of delivery and use of interface.

The game’s interface is simple. It opens to an initial screen featuring a cow and a cat, the titular barn in the background under a bright yellow sun, the game’s title displayed in the sky; a single large button invites “Play” (See Figure 1). The sun is also a button, although a less obvious one, and leads to the game’s options. When the player selects the play button and enters the game, a transition screen gives way to a close up of the barn. The barn’s doors shake, and if the player touches the barn, it opens,

revealing an animal. The animal moves through a brief animated sequence during which a corresponding sound is played (the mouse squeaks, the horse neighs, etc.) and then the animal is named by a narrator and the word is shown on the screen. The player can then touch the screen to return to the closed barn to repeat the process. If the player waits to touch the barn, the game will begin making animal noises quietly. If the player waits after the barn is open, the game is effectively paused without further player input.



Figure 1. Opening Screen

Depending on the animal to be revealed, the barn opens either at the main doors or at the hayloft (as for the cat and owl) (See Figure 2). Once all animals are revealed, the player is rewarded by the barn opening to show all the animals together, at which point the narrator says, “It’s everyone.” Touching the game again at this point turns day to night. The barn closes again, the sky turns dark and the stars and moon come out. If the player touches the barn again, the narrator says, “Shh! They’re sleeping” and the player is shown a cow, pig, chicken, cat, and sheep snoring

curled up together in the barn. A last touch returns to the game's opening screen with its play button, resetting the game so that the player can begin another round (See Figure 3).



Figure 2. Cat in the Hayloft



Figure 3. Sleeping Barn Animals

LEARNING FROM LLAMAS

The curriculum of *Peekaboo Barn* is straightforward; players can learn the names of various barnyard animals as well as the sounds these animals make. This is a mainstay of children's toys and media, with similar themes and knowledge incorporated into many iconic pieces of children's culture. However, the thematic simplicity and elegant interface of the game mask a nuanced understanding of toddlers' interests and abilities and of appropriate developmental milestones. At a surface level, *Peekaboo Barn* is popular because it builds on familiar cultural themes and understandings of childhood, but it works because of the ways in which it incorporates sophisticated learning strategies and best practices in the development of educational experiences for young children.

The game's emphasis on farm animals fits in with classic children's toys and media like the barn play sets that companies such as Fisher Price and Playmobil have produced for decades. Similarly, animal sounds and names are readily familiar as components of early childhood educational curricula and media (Paul, 1996; Timmerman & Ostertag, Julia, 2011). At the same time, the game appeals to young players; Donahoo noted that "every toddler I see play with it lights up at the images and sounds" (2010), and a reviewer who works as an educator for 3-6 year olds stressed, "All the teachers, parents and students LOVE Peek-A-Boo barn!" ("Peekaboo Barn – Review," 2009). What *Peekaboo Barn* presents builds on the familiar even as it utilizes the relatively new medium of the touchscreen tablet or phone.

Positive psychology is often used to inform or explain serious and educational games for adults (Gee, 2003; Gee, 2007; McGonigal, 2011) and teenagers (iThrive Games). Even more broadly, Mihaly Csikszentmihalyi's (1990/2008) concept of flow states is often used in game studies to discuss deeply engaged experiences. Players, his theories suggest, enjoy games most

when they are just hard enough; if an activity is too easy, the player becomes bored, while if it is too hard, the player grows frustrated. Similarly, education experts have long advocated for scaffolding, a process by which students are provided with just enough support to ensure that they are operating at the edge of their existing abilities and cultivating new ones (Vygotsky, 2005; Hogan & Pressley, 1997). In short, both for effective learning and for effective game design, difficulty needs to be optimized, and this is especially true when thinking of very young players. As we know from decades of research in child development, children's abilities shift rapidly during infancy and early childhood (Fischer, 1980; Flavell 1971; Thelen, 1995). A task that is easy for a child at 24 months may well be impossible at 18 months.

Peekaboo Barn's simple interface is one of many ways it demonstrates a clear understanding of the needs and abilities of its audience of toddlers. The game relies on a single gesture—simply touching the screen—and all touches happen on a large hit box. The player does not have to touch the barn door to open the door, only the barn in general. This is appropriate and accessible for the game's audience, as gestures such as swiping require more advanced fine motor skills (Hourcade, Mascher & Pantoja, 2015). Further, the barn door's shaking is a visual cue for players about what to do, so even if a child does not know intuitively to touch the barn door and is not prompted by a parent, the game itself cues the necessary player response. Similarly, the only screen with any essential instruction or text is the opening screen with its “play” button and options menu; these tools are intended not for child players, but for parents and caregivers. The game incorporates text when naming the individual animals, but there is no implied expectation that children read the text. Instead, the text is shown as part of the act of naming, making an implicit link between the picture of the animal, its spoken name, and its printed name. Print awareness is often cited as an important pre-literacy skill and activities like

this, in which spoken words are tied to visuals and text, can help increase print awareness (Chaney, 1992; Hiebert, 1981; Justice & Ezell, 2002; Pullen & Justice, 2016).

A second important principle from developmental psychology incorporated throughout that game is that of contingent responses. The game's reveal of animals is a contingent response: if the player does not touch the barn, the game does not move forward, effectively waiting for the player's input before progressing. Contingent feedback has been shown to be crucial to children's learning and has been heavily evaluated in studies of children's development and language acquisition (Goldstein & Schwade, 2008; Miller, 2014; Tarabulsky, Tessier, & Kappas, 1996). Here, the response is not contingent upon the child's vocalizations, but rather on their interacting appropriately with the device at the correct moment. This effectively coaches the player in gameplay, rewarding them with new animals throughout the game.

After all animals are revealed and the game loops back to the start screen, the game is replayable in part because of the incorporation of multiple languages and the addition of a Record Your Own Voice function (limited to iOS devices), but this also means that the game can work well in cross cultural and intercultural contexts. Even if played in a single language consistently, the repetition of animals and their attendant sounds and names is pedagogically useful, particularly since the order in which the animals appear is randomized. If a child has a favorite animal, there is no way to determine when exactly that animal will appear, meaning that a player who badly wants to see the barn open to reveal a llama cannot predict when the llama will be revealed. This aids in replayability and adds an element of randomness and surprise that persists even after a player begins to remember all of the included animals.

The importance of play for child development is widely studied

and understood within developmental psychology, and supporting and providing playful experiences is fundamental to producing meaningful learning opportunities. The silly sounds, cheerful voice, bright graphics, and element of surprise in *Peekaboo Barn* ensure that the game provides an experience that is fundamentally playful, and it is this integration of play and learning that is most key to the app's efficacy. Learning apps do not always need to look or feel educational, and in fact those that do not may be among the most effective. Play, after all, contributes to nearly every facet of a child's development, including their cognitive and emotional development (Ginsburg, 2007; Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004; Erickson, 1985; McElwain & Volling, 2005; Pellegrini & Smith, 1998; Fisher, 1992). The playful experiences provided by *Peekaboo Barn* are a large part of why the game is so effective; the educational content (animal names and sounds) are embedded in a lightly narrative context that is, at its heart, based on the incredibly simple and incredibly old game of peekaboo. This is not just good game design; it is good educational practice. Play is fundamental to games, but it is equally integral to learning.

In summary, *Peekaboo Barn* rests on a number of key principles that are evident throughout: it presents developmentally appropriate content in a developmentally appropriate form; it relies on contingent feedback to encourage player engagement; it is replayable and incorporates play throughout. This game adheres to a number of best practices for early childhood education drawn from developmental psychology (Miller & Kocurek, 2017), and it demonstrates the degree to which sophisticated developmental and cognitive principles can usefully and seamlessly inform games for young children. *Peekaboo Barn* may not feel like a learning game, but this does not mean that learning is not occurring, rather it means that the educational content is so carefully integrated that it feels like play itself. Further assessment is needed to identify exactly what

children learn from these games. However, games like *Peekaboo Barn* that accomplish this kind of clean fusion of play and learning demonstrate the opportunities available to developers who want to create meaningful learning experiences for the preschool set. After all, play is foundational to children's learning, and games are a medium primed to provide playful educational experiences.

LEARNING FROM SCIENCE

Research on child development can usefully inform games by enabling game makers to ensure that games are developmentally appropriate to the target audience. A game for 2-year-olds that relies on a swipe gesture or that takes more than a few minutes to play might incorporate great content and have a beautiful interface, but it would still be unlikely to resonate with its players who would be more likely to wander off than to finish the game. Games like *Peekaboo Barn* that are educational but that rely on simple mechanics may not always read to adult consumers as educational, but this is reflective of adult expectations rather than child needs. Ultimately, games need to be optimized for child players, not their parents; the gap between children's abilities and adult expectations can be addressed through various communication strategies, including efforts to ensure that a game's curriculum and its underlying educational principles are clearly articulated.

Some of the lessons developers can learn from developmental psychology may seem obvious. Contingent responses and play may seem like common fundamentals for games, but as most designers know all too well, not all games implement them successfully. Contingent responses can and should be implemented in all games (and robust implementation of contingent responses involves more nuanced design than simple 1:1 feedback for players). In *Peekaboo Barn*, the reveal of animals is contingent on player interaction. This type of interaction isn't

uncommon in game design—indeed, we often call games “interactive media,” but ensuring that interaction is meaningful and tied to educational goals is key. Interaction is also a means of driving engagement, and research on literacy and language acquisition has shown that children learn words more effectively from didactic rather than passive reading in part because it encourages engagement and reflection (Sénéchal, 1997).

Additionally, games absolutely must be playful to effectively reach young children in particular. To optimize learning games for young children is to optimize playful experiences. The relationship between education and entertainment is fraught, but perhaps less so in the case of games for the pre-school set; children need to play to learn, so playful experiences with some learning woven in are going to be more successful than learning experiences to which play is added as an afterthought. Play as afterthought is a problem in many instances of learning games—that type of approach is part of why the phrase “chocolate-covered broccoli” is invoked. Rather than providing thoughtfully integrated, playful learning experiences, bad games take a learning experience and poorly sugarcoat it, rendering it into something that is appealing to no one, not even those who might have happily eaten the broccoli on its own. Scientific research and design research both can be an antidote to this pervasive problem and ensure that games are offering optimized experiences that provide real, transferable learning and carefully address objectives.

Peekaboo Barn is a thoughtful and well-designed game, but it is far from perfect. That said, the problems it suffers from reflect broader tensions in the industry. At present, the market for smart phone applications is flooded with “educational” content. However, a review of children’s literacy apps found that of educational apps featured in the “Top 50” educational apps in popular app stores or critically acclaimed on expert review sites, found a number of problems with apps’ integration of learning

(Vaala, Ly & Levine, 2015). Fewer than a third even mentioned any underlying curriculum, and even fewer (24%) mentioned any kind of research testing, and when this kind of assessment was mentioned, it was generally an assessment of appeal or usability, not of learning (Vaala, Ly & Levine, 2015). This state of affairs reflects real limitations on design and development, particularly since robust evaluation takes time and can add significantly to production costs. However, the long-term success of games like *Peekaboo Barn* suggest that thoughtful games with careful attention to educational goals and outcomes can distinguish themselves in the market, making this additional cost a long-term investment in games' success and a means of distinguishing games in an increasingly crowded marketplace.

A focus on the intersection of game development and developmental psychology also suggests many areas in which further research is needed. Work on human-computer interaction for children is still emerging, due in part to the relatively recent relaxing of guidelines that would have advised keeping toddlers and pre-schoolers off touch screens entirely; the work that has been completed is illuminating, but implementation in industry can lag. Now, however, as apps flood the marketplace targeting this audience, poor understanding of what types of fine motor skills designers can expect from their players often leads to poor development. Further research in this area can help provide optimized experiences. Additionally, research has consistently shown that children learn less from a video than from a live person, a phenomenon known as the video deficit (Krcmar, 2010). However, the specifics of how the video deficit does or does not carry over to interactive app-based experiences is not well known even if we can deduce best practices from existing research.

The principles evident in *Peekaboo Barn* are just some of the foundational concepts from developmental psychology that could readily be adapted for and implemented into gameplay.

For example, parent-child interaction is also known to positively correlate to children's learning, and while games can provide parents a brief reprieve, they can also be used to scaffold and encourage interactions. In *Hat Monkey* (Fox & Sheep, 2014), instructions are shown on-screen in text but are not narrated, meaning the game assumes a parent or other older player will read these instructions for young players. The game, then, provides an experience that relates in some key ways to the experience of didactic reading, in which reading, explanation, and demonstration are combined, and which has been shown to be especially effective for teaching language and literacy skills (Sénéchal, 1997; Cornell, Sénéchal & Broda, 1988). Worth noting, however, is the play experience only echoes didactic reading when the game is played as intended with a child and parent or caregiver playing together. If the game is played differently, and surely it is, the experience becomes something else entirely. This open-ness may be part of the appeal of games, but can also add to the challenge of assessing learning efficacy.

The potential for learning games for preschoolers is significant, particularly as this market is continuing to develop. However, research needs to play a clear role in informing design and helping structure effective learning experiences. Designers cannot necessarily wait for academic researchers to produce fresh insights into children's media as new platforms emerge, but they can at least rely on the existing research that delineates best practices in early childhood learning and attends to the developmental needs, abilities, and milestones for young players. Further, parents are likely to remain key gatekeepers and an important secondary audience, which means that parental standards and expectations are also integral to developers' goals. In *Peekaboo Barn*, we see how deeply effective even a light engagement with key pedagogical principles can be for optimizing play experiences for toddlers. As this market expands and as new devices hit the market, researchers would do well to

continue looking beyond the games industry into adjacent fields like developmental psychology and the learning sciences.

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TAKING OVER THE WORLD, AGAIN? EXAMINING PROCEDURAL REMAKES OF ADVENTURE GAMES

ANASTASIA SALTER

By Anastasia Salter

Remakes of interactive narratives, including adventure games and electronic literature, have risen over the past decade, propelled in part by nostalgia. However, unlike obvious parallels in other media (such as the remake of cult classic *Ghostbusters* with a new cast and mentality), game remakes are rarely re-imaginings. In many cases, the original games have been rendered unplayable or at least very difficult to access by time, as digital history is constantly in a process of being lost thanks to the rotating door of technologies. Given these challenges, remakes play an important role in establishing and preserving canonical play. How do we evaluate and value fidelity in the remake of procedural content, and what role do changing interfaces and platforms play in our understanding of an interactive narrative as experience? I examine these questions through the lens of several remakes of classic adventure games from the last decade. Fan reactions to each of these games and the design choices behind them reveal the difficult balance between

preserving the nostalgic experience of an original and adapting to new modalities and expectations.

REMAKING ADVENTURES

The last several years have seen an incredible rise in remakes of classic adventure games, including *Day of the Tentacle* (LucasArts 1993, remake Double Fine Productions 2016), *Secret of Monkey Island* (Lucasfilm Games 1990, remake LucasArts 2009), *Gabriel Knight: Sins of the Father* (Sierra On-Line 1993, remake Phoenix Online Studios 2014), *Leisure Suit Larry* (Sierra On-Line 1987, remake Replay Games 2013), *Grim Fandango Remastered* (LucasArts 1998, remake Double Fine Productions 2015), and *Full Throttle Remastered* (LucasArts 1995, remake Double Fine Productions 2017). Many of these remakes are from the same team at Double Fine Productions, which has successfully acquired a number of classic LucasArts titles and turned the “remastered” game into a lucrative franchise. Their combination of authorial recognition through the involvement of original designers, and in-house tools for developing remakes of this kind, makes them one of the dominant forces in remastered adventure games. The remaking of these games could be interpreted as powered by nostalgia, and the fact that the remake is thoroughly established as a fan practice (Salter, 2014) adds to the apparent validity of that perception. However, the remake of a procedural work is more than an act of nostalgia or even of fandom: it is a powerful act for canonization as one of the most prominent commercial methods available for keeping works accessible. While it may be tempting to compare these remakes to practices from other media, there is a fundamental difference in priorities: for instance, film remakes tend to reflect new advances and often draw on rhetorical, social, political, and cultural changes to reposition or even radically change the essential content of a film (Forrest and Koos, 2012). Game remakes by contrast are judged by their fidelity, as they often serve as vehicles for transferring an experience that time and

changing platforms have rendered unplayable. The adventure game remake in particular presents a powerful case study for the tradition because adventure games are defined by their narratives and characters, which as with film are “recast” with new graphics, voice actors, and even code.

While the shot-by-shot remake of a film is easy to dismiss as an unnecessary act, and deviance from the script is the norm, games and digital objects are always headed for an expiration date that makes the screenshot-by-screenshot remake an object of potential historical and aesthetic significance. Such remakes of games have the additional challenge of translating coded and procedural interactions into a new language or engine. The procedural remake has strong implications for the games and electronic literature community. The desire to remake (and to play the remake) reflects the ephemerality of the original game as canonical experience. An increasing number of platforms that form the foundation of electronic literature and gaming are becoming rapidly inaccessible: Flash is vanishing from the browser, iOS is constantly updating and rendering obsolete applications, and even changes to computer hardware can render older software mostly unplayable except for those with significant technical expertise or hardware access. The remake is one solution to the disappearance of work, but is it successful? How does the process of remaking fundamentally transform an interactive narrative? I will examine these remakes through close play of sequences from both the remake and the original and place them in the context of electronic literature, and particularly consider their implications for our definition of an interactive text through its relationship to a particular platform and the hardware and software configurations of an era.

Remakes draw our attention to the question of what is essential in a work. Most of the fundamental mechanisms are changed in the process of remaking — the art is replaced, the engine transformed, and the code rewritten. What, then, is the essence

of the work? Three recent remakes offer a perfect contrasting case study of approaches to fidelity in remaking adventure games: *The Secret of Monkey Island*, *Day of the Tentacle Reloaded*, and *Grim Fandango Remastered*. Each of these games has been heralded as a classic in the genre. In the case of Guybrush Threepwood, the availability of relatively recent games in the same series (*Tales of Monkey Island*, Telltale Games 2009) provides initial motivation for newcomers to seek out the now-unplayable DOS original. In part thanks to this continued viability as a license, *The Secret of Monkey Island* is an in-house remake produced by the original company. *Day of the Tentacle Reloaded*, by contrast, is the second game in a series where the original is less lauded and far more difficult, representing an earlier era of design. I will place these two 2D adventure games in contrast to *Grim Fandango Remastered*, a rare example of a 3D adventure game remake recently released.

REVISITING THE ADVENTURES OF GUYBRUSH THREEPWOOD

Secret of Monkey Island is one of several remakes that demonstrates its fidelity through providing the user with the ability to switch from the “new” graphics to the original interface at any time. The inclusion of this functionality makes the experienced player wonder at the need for the graphical overhaul, while the new player is more likely to swipe once to reveal the visuals and then back away. Reviewers reassured fans of the game’s careful attention to the original: “If you have played the game but it’s been a while, note that the new art and voice over are the only new things to find here. Beyond the cosmetic changes, this is exactly the same game you played in 1990” (Hatfield, 2010). However, some editions are more than cosmetic, including an in-game hint system designed to make the logic more accessible to players unfamiliar with the genre and a completely redesigned interface that takes into account not only

changed expectations but also new platforms such as touchscreen tablets and consoles where the game was ported.

Some of the game's fidelity to the original includes references inaccessible to the modern player: "No egregious "Greedo shoots first" revisionisms, nor lame attempts to "contemporize" jokes here; quips about buying Loom and adventure game death penalties from rival developer Sierra On-Line are still present" (Nguyen, 2009). This is characteristic of the genre, as Krista Bonello Rutter Giappone (2015) notes that adventure games as a genre are particularly notable for self-parody and self-referential humor that extends beyond a single game and often encompasses a much larger context, linking even outside the works of one publisher. The inclusion of such moments gestures to the desire to preserve not just the central experience of the game, but also its placement in a genre with its own culture and norms, even at the expense of accessibility to new players unlikely to find an "Ask me about LOOM" button to be more than a confusing aside.

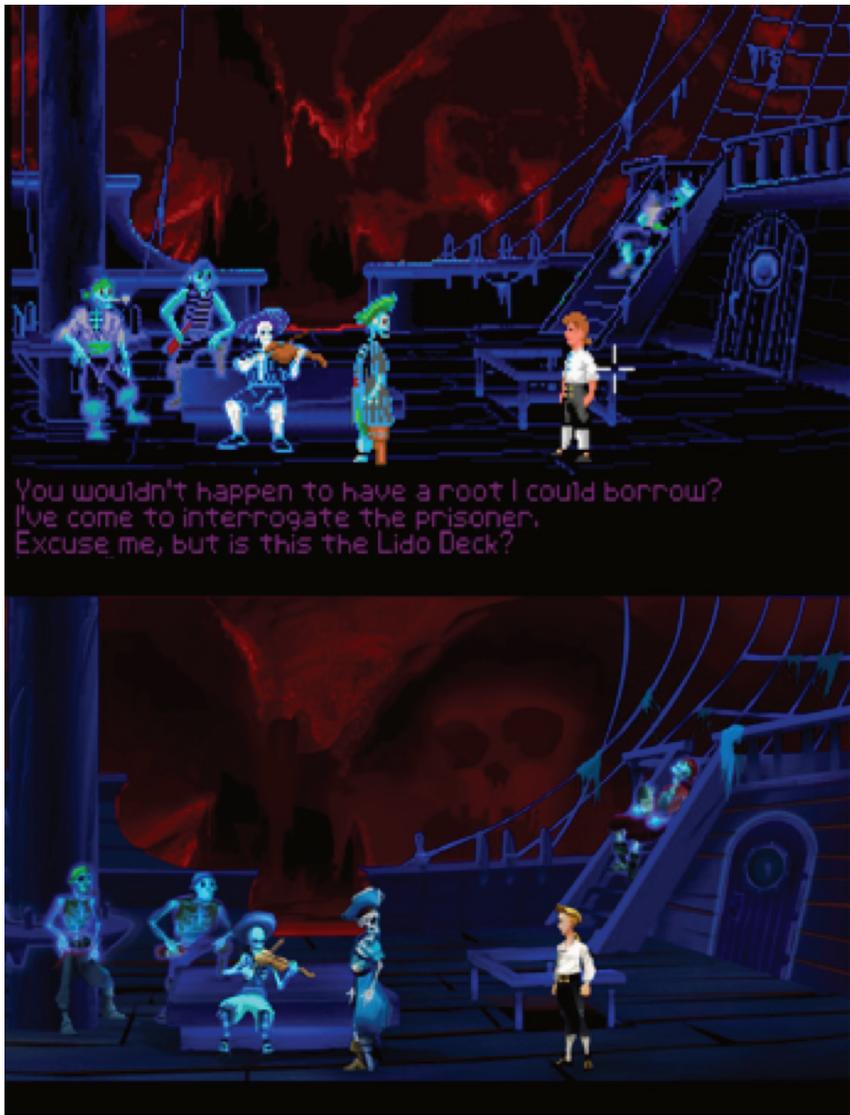


Figure 1. LeChuck's pirate ship in the original game (top) and special edition (bottom) (Zyle, 2010)

Consider these screenshots comparing our exploration of LeChuck's pirate ship in *The Secret of Monkey Island Remastered* with the original graphics: placements are consistent, and the characters occupy the same world of colors as in the original,

though with added depth. The familiar avatar of Guybrush Threepwood that the player once embodied is wearing his customary garb, though he seems to have gained both height and blondeness. The expressions on the ghost pirates are more readable, but details such as the center pirate's peg leg have been altered. With the loss of pixelation we also have a change in mood: the skeletal head in the background can be clearly noted, and yet the cliffs have lost some of their jagged foreboding. The more concrete pirates are less humorous, with some of the exaggeration no longer carrying forward. This emotional disconnect even when the image is apparently faithful is significant. From a historical perspective, Richard Rouse (1999) took on both film and game remakes as perhaps the more insidious for their apparent fidelity:

Here we have a game masquerading as the original, which to the untrained observer will look exactly like the original Centipede, and to those who have never played the original may actually conclude that this is the original. However, it is not as finely tuned as the original was, and as a result new players of the game who mistakenly think this is the real classic Centipede will be left with a false impression of it.

(Rouse, 1999)

Rouse endorses emulators as an alternative, which is a particularly important statement given the fidelity to the encoded original that emulators allow: however, it suggests that the underlying logic is more important to fidelity than aesthetics and interface, a troubling assertion particularly when taken across genres.

Emulation is particularly significant in the case of a game like this one, which was made in a dedicated tool built specifically for the genre. The SCUMM (Script Creation Utility for Maniac Mansion) engine behind the original *Secret of Monkey Island* offered a distinctive system for temporal narrative, which

Michael Black (2012) notes as a key distinguishing structure behind this era of interactive narrative. One of the leads on SCUMM, Mike Bevan, noted that future-proofing was a concern but not an overriding one:

I don't think that any of us thought that SCUMM games would be around this long. I worked on the system for about 12 years and I tried really hard to 'future proof' my code by testing across as many computers as I could. When developing under Windows, I would test it under Windows NT, even if that wasn't one of the target machines, but NT required stricter coding standards. So if it ran under NT, chances were improved that it would run under other future Windows operating systems.

(Bevan, 2013)

The system has proven somewhat resilient for adaptation, although there is no longer any commercial support for it and the task has fallen to fans seeking to preserve their ability to play classic games: "With projects such as ScummVM, a fan-written SCUMM interpreter, additional target machines are now possible. That *Monkey Island* was selected as one of five games to be running at an exhibit at the Smithsonian Museum of American Art shows how good storytelling is often more important than flash-in-the-pan games based only on technology" (Bevan, 2013). However, the Smithsonian's model of large-screen displays and limited play time also makes it difficult for any exhibition visitors to appreciate or experience that narrative. The removal from the classic interface context (with a focus on projection and distance from the characters that would previously have occupied an intimate 14-inch monitor) creates further barriers from the "original."

In a blog post on how he would approach revisiting the *Monkey Island* franchise, original designer Ron Gilbert also emphasized the importance of the SCUMM engine:

I would rebuild SCUMM. Not SCUMM as in the exact same

language, but what SCUMM brought to those games. It was a language built around making adventure games and rapid iteration. It did things Lua could never dream of. When Lua was in High School, SCUMM beat it up for lunch money. True story. SCUMM lived and breathed adventure games. I'd build an engine and a language where funny ideas can be laughed about at lunch and be in the game that afternoon. SCUMM did that. It's something that is getting lost today.

(Gilbert, 2013)

Emulation preserves SCUMM and the logical patterns that designers new to Lucasfilm Games would have learned and mastered as part of their initial training before even beginning to prototype graphical adventure games. However, the process of emulation is far less accessible to the average user than a remake. For instance, an examination of the wiki page on DosBox (2016) for would-be emulators of *The Secret of Monkey Island* shows directions are given for both DosBox and ScummVM, a SCUMM-dedicated virtual machine. In both cases, difficulties can be expected not only in installation but in convincing audio files to play on modern machines. Such projects are also only as good as their committed, unpaid teams, and thus can at any stage fall to the wayside.

REMASTERED AND RELOADED

While *The Secret of Monkey Island* kicked off the trend of adventure game remakes, it represents one of the few in-house projects of its kind. Other initiatives following in this pattern have frequently involved the original game designer, but rarely the original company. However, this hasn't lessened the emphasis on fidelity. Most of the games targeted for remakes have been 2D games from the days before 3D graphics rose to dominance, and few of the franchises lived to see 3D graphics introduced into their original context. However, another recent remastering draws attention to one of the few 3D successes of the genre,

Grim Fandango, which strikingly employs remodeled characters but not backgrounds:

Just as the excellent craft behind *Grim's* story means it's no less engrossing today than it was in 1998, its 3D graphics have also held up surprisingly well. Because *Grim* has such unique art direction, its low-polygon characters haven't aged as poorly as you'd expect. In fact, the original pre-rendered backgrounds help the graphics look borderline modern. Thus, switching back and forth between the original and remastered graphics on the fly only changes the characters, whose detail and lighting are cleaned up for 2015.

(McCaffrey 2015)

Reviewers particularly noted the reverence with which *Grim Fandango* treats the original: "Double Fine (lead by *Grim Fandango* creator Tim Schafer) has taken every scrap of the beloved classic and transported it to modern platforms with the feather-light touch of a National Archives curator touching up the U.S. Constitution" (McElroy, 2015).



Figure 2. Manny's office in the original (top) and remastered (bottom) version (McElroy, 2015)

Thanks to this archival approach, *Grim Fandango Remastered* presents perhaps the most compelling model of what a remake can be: driven by the original designer, and including detailed commentary tracks from Tim Schafer and team, the game not only recreates the original mechanics but also provides further insight into references, including details of clear cinematic nods

to *Brazil*, *The Maltese Falcon*, and *Casablanca*. Laura Preston notes that the game becomes its own lesson in design history as well as a reminder that creativity often springs from limitations:

I listened to challenges the Grim Fandango team faced due to basic 3D graphics available at the time. It's hard to engage players when your characters are basic geometric shapes with rough textures...or is it? Tim explained that seeing a paper-mâché skeleton got him thinking creatively. The rounded torsos of the skeletons with painted on ribs would be perfect for their new 3D graphic style. The debonair skeletal protagonist, was an elegant solution to a practical design limitation.

(Preston, 2015)

Such commentary also creates its own reflexive irony, as the characters themselves are the most notably changed in this new iteration. Given the genre's reliance on an emotional connection with the player's avatar, these changes are disconcerting: it's a physical update to the embodied self.

The trend towards remaking in graphic adventure games is far from over, with *Day of the Tentacle Remastered* released in early 2016 (with an iOS version released in July 2016) and inviting players to revisit Purple Tentacle's quest to take over the world. However, players finding themselves on this journey "back...to the Mansion!" will be confronted with a familiar sight: a Commodore-style computer tucked up in one of the character's rooms running a playable version of *Maniac Mansion* (Lucasfilm Games 1987), the game's prequel and the impetus behind the initial creation of the SCUMM engine. Does it run? This question was on fan's minds prior to the release, and answered in a pre-launch interview:

Double Fine VP of Development Matt Hansen made sure to point out that the full *Maniac Mansion* game is indeed fully intact within *Day of the Tentacle Remastered*. For those that played the original *Day of the Tentacle*, it's in the exact same spot as it was before. Is *Maniac Mansion* itself fully remastered? Unfortunately, no, it's

just as it was, but fans of the original game aren't about to quibble with that minor detail, given that it's widely regarded as one of the greatest adventure games of its era.

(Mejia, 2015)

However, the very phrasing of the announcement raises its own questions: right now, the original *Maniac Mansion* is unplayable without significant fiddling and a virtual machine. How long will *Maniac Mansion* stand open for visitors, if indeed this computer-within-a-computer launches at all? And indeed, how long will Purple Tentacle's quest for world domination be open for thwarting in the context of industry where preservation is an afterthought, and the remake a futile stop-gap against a tide of shifting bits?

Drew Messinger-Michaels draws attention to the minimalism with which the designers approached the process of remastering *Day of the Tentacle*:

Day of the Tentacle...has been Remastered with what I would be tempted to call an even lighter touch if not for the almost obscene amount of work that its approach requires: Rather than reimagining the visuals, DoubleFine has painstakingly smoothed out the jaggy pixels of old (which new drawings rather than some glib aliasing filter) in order to make the game look like what it was apparently intend to look like the first time around: an exuberant hand-drawn cartoon.

(Messinger-Michaels, 2016)

Given the team's clear visual influence from cartoons of the era, the art of the "remake" could in fact be seen as a truer realization of the intended outcomes. Every game is constrained by its platform: classic adventure games faced limitations in size, resolution, graphics processing, and audio. In some cases, those constraints led to compelling outcomes. This visual

transformation attracts mixed feelings from devotees of the original:

I'm in two minds about this. On the one hand I feel like most attempts to improve visuals in remastered games are driven by a misguided assumption that older art automatically equals worse art thanks to the technical restrictions of computers at the time. This isn't always true, and for the Lucasarts adventures it's particularly untrue; those games had pixel art that hinted at what wasn't there in a masterful way, and neither of the *Monkey Island remasters* managed to better the pixelated renderings of Steve Purcell's original hand-drawn backgrounds despite having a twenty year advantage.

(Hentzau, 29)

The primary changes are driven by interface: in the original, the SCUMM interface took up the majority of the screen. In the remake, an alternative is presented: "Remastered borrows a page from later LucasArts games like *Sam and Max Hit the Road*, handling actions with a pop-up wheel full of options. This more modern interface gives *Day of the Tentacle Remastered* more room to breathe, and it makes for swifter navigation and interaction" (Alexandra, 2016). However, a player of the remastered version relying on this swifter navigation is likely to miss a number of the humorous moments that a player using the SCUMM interface (with its visible verb and noun play) would encounter. Likewise, the removal of the characteristic system and interface obscures the game's connection to its genre. The oft-disparaged reliance on point-and-click powered exploration of the interface is also at the heart of much of the genre's humor: "the adventure game is a genre immediately so self-referential, it seems to weave a network of texts that refer back to themselves in a way that "establishes" its credentials as genre — on the other, it actively sets up a two-way participatory dynamic, making the player aware of the interplay between the medium's limitations and the possibilities they enable" (Giappone, 2015).

The iOS version of *Day of the Tentacle* serves as a visual warning

of the challenges of interface emulation facing digital preservation. Games made natively for iOS face not only the death of their platform but the death of their operating system version as imminent threats to their survival: games and digital art works regularly disappear from the app store with the advent of a major update. As a platform for revisiting point and click works, the touch screen also struggles with the difference between observing and interacting with environments—the distinction of moving versus clicking the mouse is lost, and it is more difficult to physically “explore” in fine-tuned detail.

These remastered editions also change in audio, which can be well-received when the source files lend themselves to the remake, as in *Full Throttle*: as one reviewer commented, “You can switch back and forth between the original mono monotony, and the superbly remixed version, and there’s no contest – crisp, clear voices over unfuzzy music – it’s a joy” (Walker, 2017). The remastered audio includes the original voices, unlike recasting that was necessitated in other remakes (including the *Gabriel Knight: Sins of the Father* anniversary edition, which replaced Tim Curry and other iconic voice actors with new actors.) The original *Full Throttle* was released in 1995 and was lauded for its soundtrack, which featured the music of a rock band called The Gone Jackals, so changes to the auditory aspect of the game would have drawn particular scrutiny. Disconnects in remakes soundtracks can transform how each version is received, particularly by existing fans looking to relive a familiar experience. Describing his goals in the remake, Tim Schafer again emphasized fidelity: “It’s a collaboration of a bunch of artists coming together. The acting, the writing, the sound design, the music. All these people worked together to make this thing, and we don’t want to mess with it. We just want to present it in the best way possible, and make it more true to the original intentions. We’re getting rid of artefacts, compression, and old tech to make it look like it looked in our minds” (Kelly,

2017). However, those so-called “artefacts” are part of the text, and the value of their removal is questionable: the same reviewer (Walker, 2017) who praised the remastering of sound noted that the aesthetics were not improved by the visual equivalent process.

The ongoing value of the remasterings here to the companies that own them is obvious: a remake can be sold commercially more easily than the original games, which require emulators and effort to successfully run and are often already easily found through abandonware. A successful remake can potentially be a launching-off point for further profit from an existing intellectual property, such as the Odd Gentlemen reboot of *King’s Quest* (2015). Obviously, such works are not intended to be an answer to the pressing questions of software preservation facing scholars and archivists of playable media—however, thanks in part to their emphasis on the elusive qualities of fidelity, they can function as an important step in that process.

CONCLUSION: FUTURE CHALLENGES IN PROCEDURAL REMAKES

Every remake examined here includes fundamental breaks with the original, however close the designers tried to stay to the original. This isn’t necessarily bad, but it does draw their suitability as artifacts of canonical preservation into question. Work on preservation in media archaeology typically focused on the full artifact: collections such as the Computer History Museum and the Strong Archive of Play, as well as projects such as the NEH-funded collaboration on Preserving Virtual Worlds (McDonough et al, 2010), involve archivists and scholars in preservation work that goes well beyond industry practices. Similarly, fan practices (including the pirating of abandoned games for play through emulators, see Coleman and Dyer-Witthford, 2007) have a broader reach than the commercially-viable titles cherrypicked by corporate producers for the

investment of a remake. Ian Bogost and Nick Montfort's work in establishing the field of platform studies provides us a context for suggesting why both experiences of the remake are ultimately unsatisfying: even in the most apparently faithful remake, layers of code, software, interface, and hardware have been stripped away and the work is fundamentally re-contextualized from its original platform (2007). You can't step into the same river twice, even if it is made of pixels. The desire to remake is a preservation instinct (even when corporate, it tends to be initiated by creators or fans rather than by a model of profit), but it is also perhaps the ultimate act of futility in a rapidly changing technological world. Emulation will step in to save only chosen works, while others are unlikely to see a lifespan much beyond the lives of their creators or intellectual property owners and, correspondingly, their creators' intentional care and continual remaking.

Many of the remakes examined here have versions that are even more tied to a closed platform than the original works: iOS remakes will, if not updated regularly, disappear from the App Store with little hope of remaining playable. While the cross-platform nature of most of these remakes will keep them playable for a longer period of time on more backwards-compatible environments such as the Windows operating system, there is a dark inevitability of an emulated future that is also a reminder that remakes are still a solution for a particular moment. This seems to contradict the mantra of fidelity espoused by designers, who treat the process as one of preservation perhaps in large part so the games can more easily function as sites of nostalgia for players recalling former experiences. This desire for fidelity is perhaps at war with the other commercial purpose of introducing new players to a canonical gaming narrative, but it does assist in the value of these games for teaching canonical games to students and newcomers to genres such as the adventure game. However, underlying these remakes is a larger assumption that newer graphics are inherently better. The

resistance on the part of some fans to the value (and need) for the remake reinforces the value of the original: while many of the graphic styles of these games were a response to the constraints of their platform, those constraints motivated creativity and originality. Jesper Juul has noted that many indie games rely on a “counterfactual nostalgia” of false pixelization, embracing constraints that modern platforms no longer possess as a way of inviting nostalgic consumption (2015). It is thus ironic that these consumer remakes, inherently rooted in nostalgia, mostly promise fidelity while delivering new versions of games themselves reflecting the graphical norms of a new, and fleeting, moment.

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