

SO CLOSE YOU CAN FEEL HER

Prostitution, Proximity & Empathy in Grand Theft Auto 5

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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):

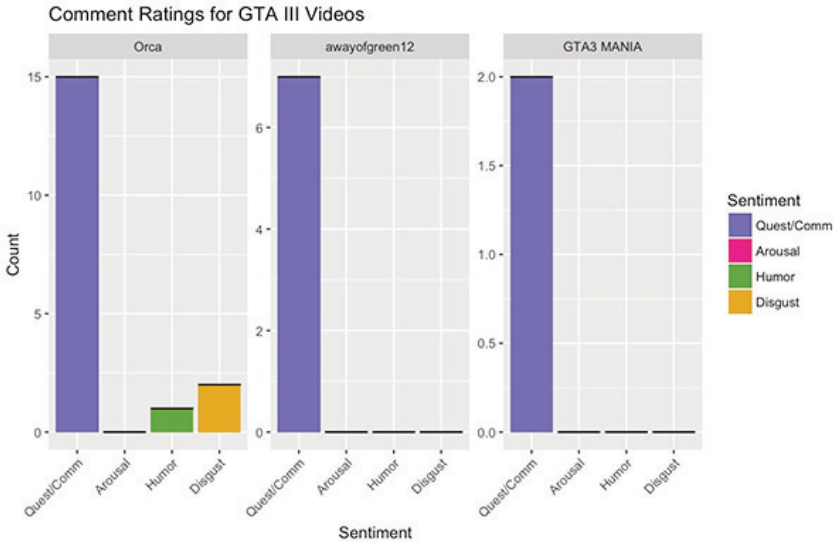


FIGURE 1: Mean comment distributions for *GTA III* videos. Error bars indicate the minimum and maximum number of ratings across graders.

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):

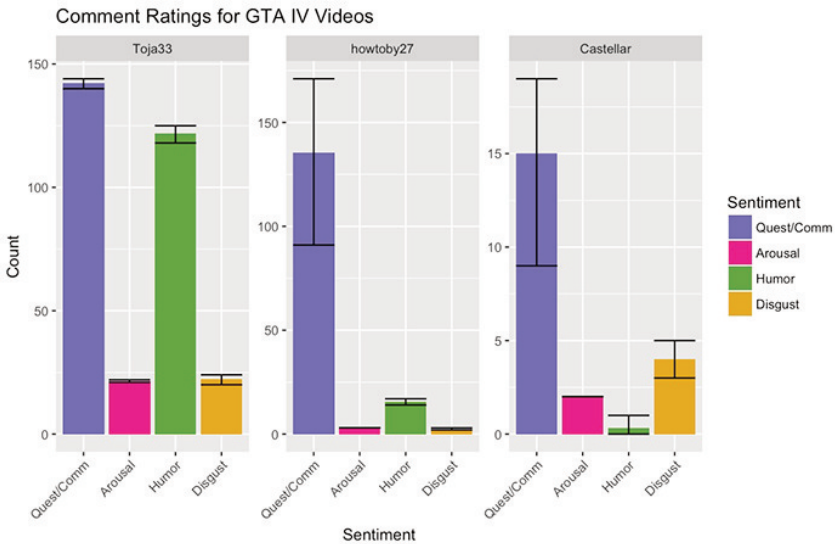


FIGURE 2: Mean comment distributions for *GTA IV* videos. Error bars indicate the minimum and maximum number of ratings across graders.

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.

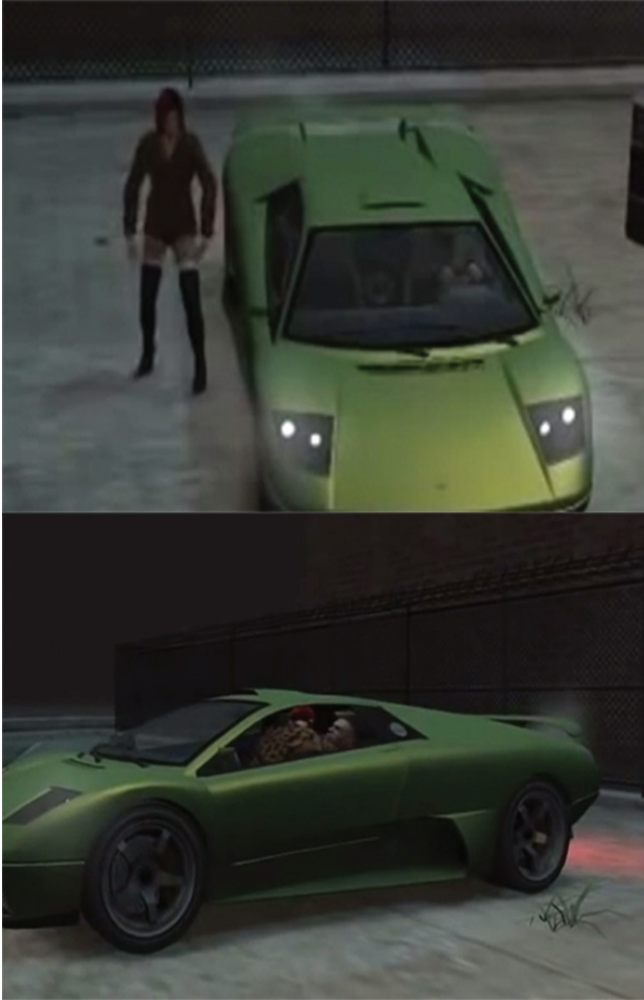
The top three Let's Play videos for *GTA IV* all demonstrate the process of finding and having sex with a prostitute, but each author demonstrates his expertise in a different way. Toja33 edited together a compilation of a sequence of prostitute encounters with the game avatar Nico (Toja33, 2011). The 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)

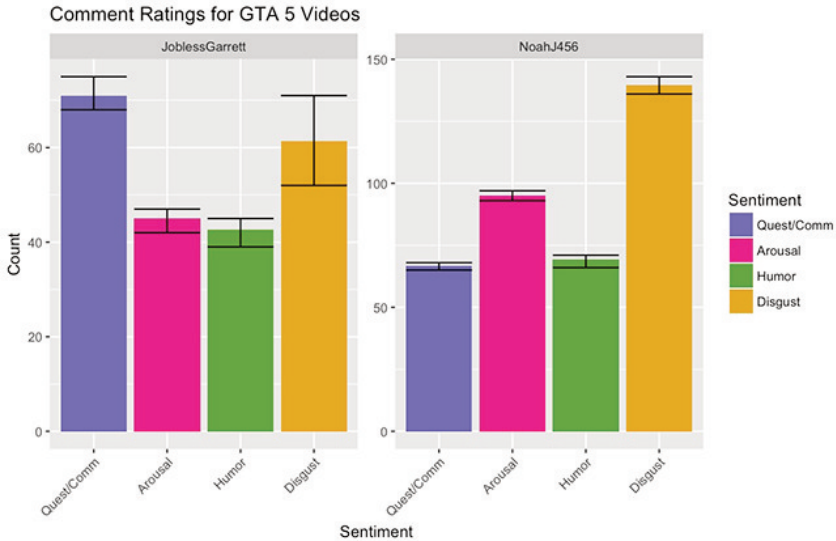


FIGURE 3: Mean comment distributions for GTA 5 videos. Error bars indicate the minimum and maximum number of ratings across graders.

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)

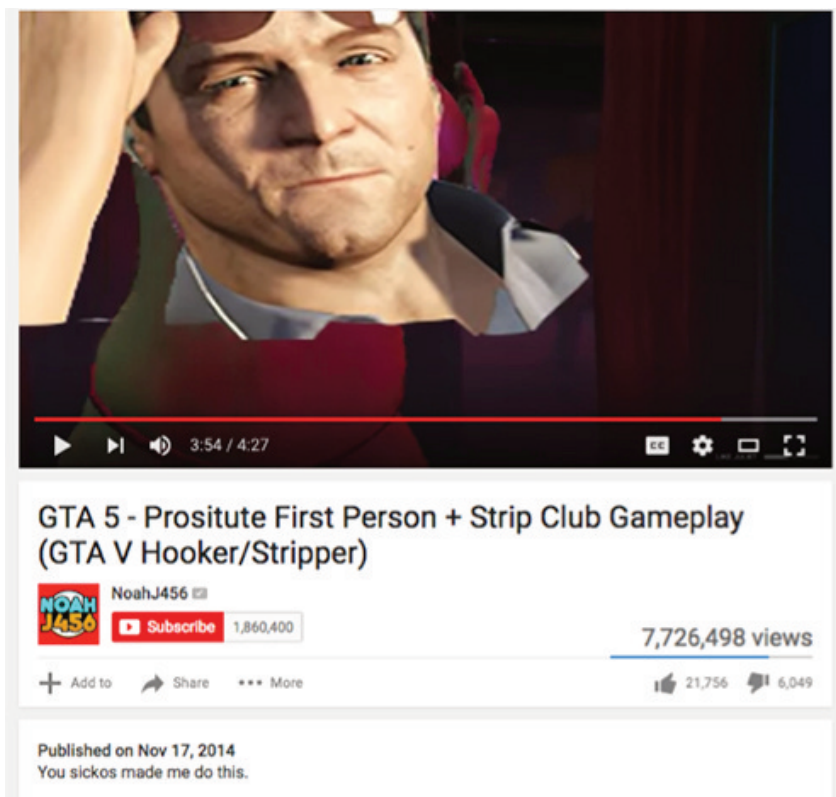
He explicitly refers to the fact that many are watching (which is generally the goal of making this kind of video) and that it is "weird". This discomfort appears to stem both from knowing that people are watching his 1st person POV avatar (by extension himself) in the game publicly engage in sex acts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

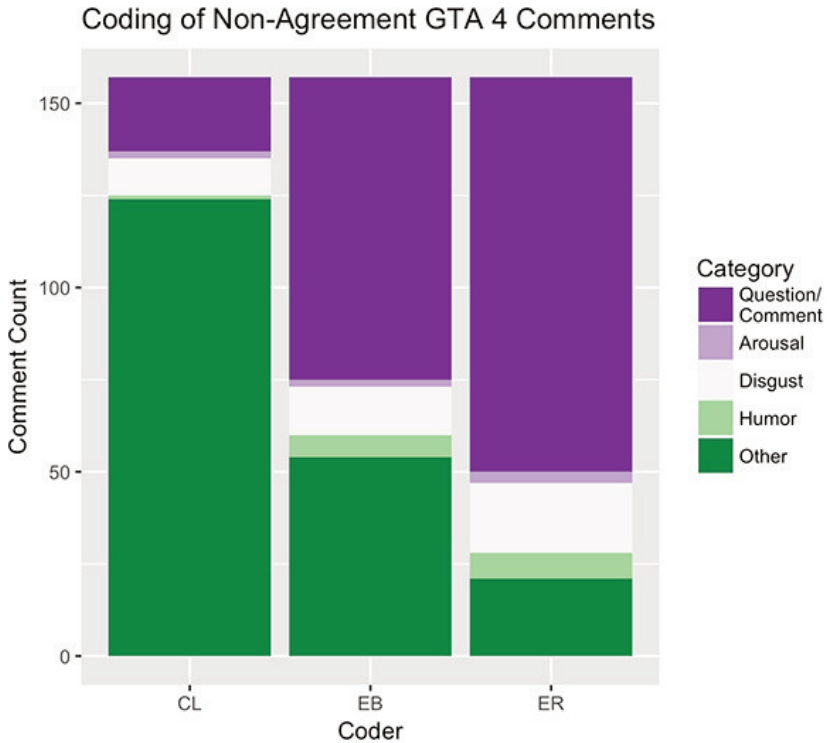


Figure 4: Breakdown of coded categories for the 157 GTA 4 comments for which there was not unanimous agreement.

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