Turning Pixels into People: Procedural Embodiedness and the Aesthetics of Third-Person Character Corporeality

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Abstract

An aesthetic of corporeality pervades third-person action games—one of, if not the most popular—genres on video games. This aesthetic is unsurprising considering that the defining characteristic of third-person games is the near constant audio/visual/interactive presence of a digital body representing the player's character. In this article, I discuss and analyze the most prominent tropes of the corporeal aesthetic in third-person action games through a qualitative content analysis of several popular titles. Through qualitative content analysis, I find that not only does this aesthetic exist within this medium-defining genre, but its themes and tropes dictate the digital corporeality of video games. Specifically, this aesthetic produces embodiedness, a characteristic of a video game body that lends it a sense of reality. I distinguish the term embodiedness from the philosophical notions of embodiedness or embodiment, and instead I propose a procedural embodiedness, an embodiedness that implies the construction of an empathic person out of a collection of digital materials in a game: an interactive, audiovisual, humanized body. A character body endowed with embodiedness is one which gives off an impression of presence, weight, realism, or, for lack of a better term, existence. While not a physical body, a digital character with embodiedness produces a reaction from players: this character feels real, like it is an actual body. Without the tropes that produce embodiedness, digital corporeality would fail at capturing and emulating the visceral activity of interactive action. Specifically, I describe three primary categories of tropes that constitute what I argue are the aesthetics of third-person corporeality: 1) audiovisual aesthetic of corporeality, 2) procedural aesthetic of corporeality, and 3) production aesthetic of corporeality. I conclude by summarizing the implications of my findings including a discussion of several theoretical considerations.

The representation of bodies in video games has undergone a significant transformation over the last three decades. In the arcade cabinets and home consoles of the 1980s, the pri-

mary method game designers employed to depict bodies was a system of caricatures consisting of pixel art. The images were called sprites, and the flat appearance and—given the fact that games like *Super Mario Bros.*, *Pac-Man*, and *Contra* were massively popular in their time—boxy outlines of the characters did not hinder players' identification with the characters' bodies. In other words, players recognized the characters as having bodies, even though they only existed as only a few pixels. The pixelated people still felt like people, people who could walk, jump, roll, suffer injuries, and die. However, over the course of the 1990s, several visual technologies developed which replaced the pixel sprite with a 3D model: a collection of polygons in a virtual, three-dimensional space (Cobbett, 2009).[1] As 3D models took the center stage in popular games, so did other design elements intended to further create a sense of reality, elements such as voice acting, particle effects for blood and other liquids, and, relatively recently, motion-capture technology. Millions of dollars have been poured into producing digital video game bodies that look, sound, and play like people with living, breathing bodies (Villapaz, 2013).

Third-person perspective games—games in which players see their characters, usually from behind the character's back with a high-angle camera—is one of the most popular genres in video game culture, especially on home consoles (see fig. 1).

A cursory search on most game retail websites reveals prevalence of third-person games, an unsurprising fact considering that third-person perspective allows for a more intuitive control scheme with a lessened possibility of motion sickness accompanies some first-person games. Third-person games also invite players to identify with distinct visual cues stemming from the main character. For instance, given the iconic nature of Batman's costume in popular culture, a Batman game would not be the same if the player could not see the Batman's costume and gadgets. A first-person perspective would hide those iconic visual elements of the character's design, but third-person gaming puts the character's visual design at the forefront. Video game character bodies are a staple of contemporary game culture and design, and with their popularity come techniques and tropes to help create a sense of reality to the bodies.

Bodies are not a foreign subject to video games researchers. Recent video games studies have followed a trend of studying the human element of gaming, meaning the people, bodies and physical contexts of gaming. Game studies organizations such as the Game Studies Interest Group of the International Communication Association and PLAY: Creative Gaming

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Figure 1: Third-Person Perspective

Fallout: New Vegas (Obsidian Entertainment, 2010) is an example of a video game with the option to use a third-person visual perspective. A player sees the character's body, usually from behind, with the option to rotate the game's camera around for a complete view of the character and environment.

Festival have hosted conferences dedicated to gaming bodies.[2] I call this trend the corporeal turn in game studies, and across disciplines, games researchers have begun to focus on the embodied experience of playing games, be that through a study of player behaviors or with research on the embodied nature of representations. Even a quick glimpse at articles in the *Journal of Games Criticism* or *Game Studies* reveals a variety of concerns related to bodies and corporeality, such as articles on diversity, gender, race, addiction, torture, masculinity, physical controller schema, and other embodied topics (Smith, 2016; Triana, 2015, Parisi, 2015; Keogh, 2014; Carr, 2014; Parisi, 2013; Sample, 2008; Cover, 2006). Video games scholars have begun to foreground the human element of gaming through the study of various characteristics of embodied play, but three primary categories emerge as central areas of concern: the study of space through exercises and movement, identity through gender and race, and engagement through immersion and interactivity.

First, several studies suggest an interest in gauging the effects of exercise games, such as by comparing Nintendo Wii games to traditional physical education lessons (Lwin & Malik, 2014), how *Wii Sports* and *Dance Dance Revolution* may increase the energy expenditure of children (Graf, Pratt, Hester, & Short, 2009), or whether motion-controlled games may in-

crease activity levels (Mhurchu, Maddison, Jiang, Jull, Prapavessis, & Rodgers, 2008; Maddison, Mhurchu, Jull, Jiang, Prapavessis, & Rodgers, 2007). Other studies target the possible benefits of motion-controlled and other exercise games for elderly adults, like how exercise games may accommodate various levels of user mobility and physical ability (Gerling, Livingston, Nacke, & Mandryk, 2012), or how motion-controlled games may be a low-cost wellness solution for limited-income elderly adults (Lim, Zhan, Ko, Terzis, Szanton, & Gitlin, 2012). More abstract questions arise regarding the body and space such as inquiries that primarily target spatial control and general body movement. For instance, Gazzard (2012) described how game theorists must approach theories of space and control outside the limits of the game screen and into the lived space of the player, and Giddings and Kennedy (2010) examined how perceived virtual space affects players' excitement. Generally, games scholars tend to investigate sports and exercise games through the paradigm of players' experience (Conway, 2010; Song, Peng, & Lee, 2011).

Second, games researchers investigate the nature of gender and race through both the lenses of people, such as producers and players, and character representations. For example, Shaw (2011) described the misconstrued efforts to label minority or disenfranchised groups as gamers through marketing demographics, ultimately concluding that the act of labeling bodies as gamers is a faulty processes obfuscated through racial politics. Harvey and Fisher (2013) continued to problematize traditional conceptions of gaming culture through their study of a female-oriented game production incubator in Toronto, Canada, and they reveal several problematic relationships of control and immaterial labor as performed through gender. Other scholars critique historically raced, classed, and sexed portrayals of marginalized groups in games, such as Kirkland (2012), Kennedy (2002), Nooney (2013), and DeVane and Squire (2008).

Third, engagement features heavily in game studies research, and it further emphasizes the roll of players in gaming culture and scholarship, primarily through the lenses of immersion and interactivity. The topic of immersion and gaming's power to overcome the body's senses usually appears in relation to work on gaming addiction (Cover, 2006), but other media effects research emphasizes the relationship between controller types/uses and levels of immersion (Williams, 2013; McGloin, Farrar, & Krcmar, 2013; Shinkle, 2008). Several researchers have written about motion-controlled games' ability to increase a feeling of immersion for players by helping them focus on the game's world and space more than on their hands or fingers in the real world (Prasch, Bianchi-Berthouze, van Dijk, & Nijholt, 2009; Jin, 2009). Juul (2010) describes how social gaming highlights player-to-player interactions as a means to increase engagement, ultimately contending that the rise of casual games changes the nature of player engagement.

In addition to these three categories, the study of third-person character bodies presents another category of investigation through a focus on the digital aesthetics of corporeality. An aesthetic of corporeality pervades third-person action games—one, if not the most, popular

genre on video game consoles. This aesthetic is unsurprising considering that the defining characteristic of third-person games is the near constant audio/ visual/ interactive presence of a digital body representing the player's character. In this article, I discuss and analyze the most prominent tropes of the corporeal aesthetic in third-person action games through a qualitative content analysis of several popular titles. I argue that not only does this aesthetic exist within this medium-defining genre, but its themes and tropes dictate the digital corporeality of video games. Specifically, this aesthetic produces what I call embodiedness, a characteristic of a video game body that lends it a sense of reality. I distinguish the term embodiedness from the philosophical notions of embodiedness or embodiment, terms more closely related to ontology and phenomenology (Pihlainen, 2004; Todes, 2001; Merleau-Ponty, 1961).

Instead, I propose a procedural embodiedness, an embodiedness that implies the construction of an empathic person out of an assemblage of digital materials in a game: an interactive, audiovisual, humanized body. A character body endowed with embodiedness is one which gives off an impression of presence, weight, realism, or, for lack of a better term, existence. While not a physical body, a digital character with embodiedness produces a reaction from players: this character feels real, like it is an actual body. Without the tropes that produce embodiedness, digital corporeality would fail at capturing the visceral activity of interactive action. In this article, I first describe my specific analysis scheme utilized to perform the qualitative content analysis. I spend the remainder of the article discussing the findings of the analysis and specifically citing and describing examples of three primary categories of tropes that constitute the aesthetics of third-person corporeality. I conclude by summarizing the implications of my findings including a discussion of several theoretical considerations.

Qualitative Video Game Content Analysis

In an attempt to categorize and describe the aesthetics of digital video game corporeality, the following research questions guided the analysis:

1. What are the aesthetic qualities of digital bodies in third-person video games?

2. How do the aesthetic qualities evoke a sense of corporeality or embodiedness to digital characters?

In order to address these questions, a variety of games would need to be examined in order to identify the common characteristics and tropes which define an aesthetic of corporeality. An analysis attempting to extract and distill a variety of design elements in a number of games will, out of necessity, rely on a method that allows for exploration of the texts, and Malliet (2007) suggests that qualitative content analysis provides the proper tools in order to access recurring themes in various aspects of design. For instance, instead of coding whether a visual cue is "violent vs. not violent," a qualitative approach to a content analysis opens

doors to seeing how several parts of a game manifest a specific concept or trope. Malliet adapts qualitative content analysis by providing an analysis scheme centered around seven topics of interest: audiovisual style, narration, complexity of controls, game goals, character and object structure, spatial properties of the game world, and balance between input and pre-programmed rules. The last category, regarding pre-programmed rules, fits Bogost's (2007) concept of procedurality inasmuch as procedural meaning arises from the processes and rules in a game. I therefore modify Malliet's last category by re-naming it "procedurality" given that the term holds more significance to games scholars. While not every topic might emerge when gathering data because of the specific requirements of the research questions at hand, Malliet's list provides a vocabulary around which to organize findings. In addition to the seven topics, I propose an eighth topic: production systems, or aspects of the game's production that are both salient to the research at hand as well as evident to players of the game.

Adapted from Malliet's (2007) method, the following process constituted the qualitative content analysis of the games selected for the study: play the games, collect examples of aspects of the game salient to the research questions, and then replay games and use external resources to gather information about the games, such as wikis and walkthroughs. After gathering the data, the researcher identifies and categorizes the data before identifying patterns across the data and categories. The ultimate benefits of this method includes adding flexibility to content analyses in order to explore novel concepts while also giving structure to otherwise structure-less textual analyses.

The games chosen for the analysis were selected based on how well they sold, their prevalence in gaming culture, and how recently they were released. Though not necessarily relevant, it is worth noting that the games can be divided by subgenre: open-world crime games, fantasy roleplaying games, and action-adventure games. Seven games total were chosen with at least two games in each sub-genre. The following details the games chosen for the analysis and their sales data, when available:

Grand Theft Auto V (Rockstar North, 2013): *Grand Theft Auto V* sold over 11 million copies within the first 24 hours of release, and within the first week it had passed $1 billion in sales (Karmali, 2013). It is currently the fastest selling entertainment media product ever released (Goldfarb, 2013). The game focuses on gaining influence as criminals in a Los Angeles-like city.

Saints Row: The Third (Volition, 2011) and *Saints Row 4* (Volition, 2013): The game became an unexpected hit selling 5.5 million copies after a year being released, and it quickly distinguished itself from other similar titles through its zany missions and visuals (Makuch, 2012). *Saints Row IV*'s story takes place in a computer simulation of the same fictional city as *Saints Row: The Third*, and while updated sales figures are currently unavailable, the game sold over one million copies in its first week (Tach, 2013).

Dark Souls (FromSoftware, 2011) and *Dark Souls II* (FromSoftware, 2014): *Dark Souls* is a Japanese-made, Western-fantasy style roleplaying game. For a game with supposedly only niche appeal, it sold remarkably well with sales totaling over 2.3 million copies, and its influence on gaming culture is just as astounding as its success (Phillips, 2013). The game draws heavily on Western European fantasy and lore, including knights, swords, dragons, ancient castles, and magic. The sequel, *Dark Souls II*, follows the same formula as its predecessor with only minor alterations. It sold over 2.5 million copies worldwide (Duwell, 2015).

Tomb Raider (Crystal Dynamics, 2013): The first game in the series was released in 1996, and this 2013 version is a reboot of the franchise. *Tomb Raider* sold 1 million copies within the first 48 hours of release and over 8.5 million copies to date (Angello, 2013; Matulef, 2015). The game finds the player's character, Lara Croft, traversing a dangerous island filled with violent enemies and perilous landscapes in order to escape while rescuing her shipwrecked colleagues.

Middle-earth: Shadow of Mordor (Monolith Productions, 2014): The game performed well both commercially and critically, selling an estimated 4 million units in physical copies alone.[3] Set between the events of *The Hobbit* and *The Lord of the Rings*, *Shadow of Mordor* melds the open world and enemy assassination mechanics from *Assassin's Creed* games with the stealth and combat of the *Batman: Arkham* series.

Three primary categories emerged regarding the aesthetics of corporeality in third-person video games, and while the first two categories fit within Malliet's (2007) seven topics of interest the third supports the addition of an eighth topic: 1) audiovisual aesthetic of corporeality, 2) procedural aesthetic of corporeality, and 3) production aesthetic of corporeality.

Procedural Embodiedness of Third-Person Video Game Bodies

Audiovisual System: Violence and Athleticism

All seven games exhibit audiovisual elements centered on giving weight and realism to digital bodies. Two techniques emerge in this category as common tropes among the games, namely the audiovisual presentation of violence and athleticism. Violence and athleticism are paired together only inasmuch as they were the two primary audiovisual systems at work salient to the process of emphasizing the corporeality of the characters.

Character Body Violence. Violence is a consistent trope among all seven games, and one of the most prominent ways violence emerges is through the portrayal of bodily harm. The games depict harm to digital bodies through various visual and aural strategies, but several methods appear more often than others. Depictions of blood are one such method, and it often serves as a shortcut to visually communicate pain, diminishing health, and injury. When characters in *Grand Theft Auto V*, for instance, suffer injuries, splotches of blood on

clothing or skin appear and then fade away after several minutes. When characters are under fire from gunshots, blood very briefly spurts to indicate that a bullet found its mark. Both of the *Saints Row* games include blood spurts without the inclusion of splotches on clothing or skin, and blood spurts in *Dark Souls* games are more visible and consistent than other games to indicate when a melee weapon has landed on a target. Blood is used more extravagantly in *Tomb Raider* and *Shadow of Mordor*: enemies in both games bleed profusely when shot or hit by the player's character, and both games include execution moves that portray graphic, bloody deaths.

Blood is the go-to symbol for bodily harm in these games making it an expected element to add realism and presence to digital video game bodies, and researchers have singled out blood as a traditional signifier of aggression or violence (Krcmar & Farrar, 2009; Barlett, Harris, & Bruey, 2008). A character's physical form is simply the application of a character skin, an image made to look like clothing, skin, and facial features, on top of a three-dimensional model. The inclusion of blood as a signifier of injury or violence makes character models appear as if there is something more to the characters as if there were organs and blood under the skin. Blood is a hidden characteristic of human bodies inasmuch as it tends not to be seen publicly, and bringing it before the eyes reinforces the illusion that these video game characters are more than just digital puppets. Seeing blood as a result of physical harm lets the video game bodies seem more alive and more vulnerable than they actually are. Blood is metonymic for a living human body, and it stands in for injury and harm as a strategy to make video game bodies feel more like bodies and to give weight to their presence, ultimately to lend them a sense of embodiedness.

Characters also tend to provide audiovisual reactions when suffering bodily harm. When characters are hit, shot, fell, or suffer any type of injury resulting in a loss of health, an audio cue plays of the character's voice evoking a type of a groan or scream. The vocal exclamations of pain would feel flat if it was not for a visual identifier to complete the reaction, and all seven games include a "stun" animation whenever characters are hit. A stun animation is when a character visually reacts from a hit—such as stumbling backwards, bending forward, etc.—while also removing combat inputs from the player for a moment. As an example, when the player's character in *Grand Theft Auto V* is punched, the character stumbles backwards, and the player is unable to control the character for a second or two. When combined with an additional visual signifier such as the appearance of blood, the illusion of physical harm appears complete. Both audio and visual markers gave weight and presence to the characters' bodies and to invite empathy for their pain and injuries.

These audiovisual reactions create embodiedness to character bodies primarily as a method to create a sense of realism. Bodies, when hurt, produce sounds and movements indicative of pain and injury, and to ignore such a primal aspect of human behavior would otherwise make the character bodies appear robotic and inhuman. Much like an Arnold Schwarzenegger performance in the *Terminator* films, a body that does not react to pain with vocal excla-

mations or stunned movement does not feel human. The stun animations and the audio cues tap into an aspect of human behavior that is universally experienced across cultures and history: humans visually and aurally react to pain and injury. Humans have very little control over such reactions[4]; they are enacted often involuntarily as a natural response to pain. A marked characteristic of human bodies is the fact that many bodily behaviors occur without much or any conscious control: breathing, heartbeat, swallowing, facial expressions, and, of course, reactions to pain. The primal nature of these reactions, when performed by a video game character, suggest that the character's body is just as reactionary, vulnerable, and sometimes incontrollable as an actual human.

Unlike the appearance of blood or the audio reactions by characters, both of which are strategies employed to depict a single moment of pain or injury, low health signifiers portray the results of bodily harm over time. Both *Dark Souls* games rely on a health bar (see fig. 2), but the other five games in the study utilize other strategies that relate to the corporeal presence of the characters.

Figure 2: *Dark Souls* Health Bar

The red health bar is located in the upper-right corner. Image screen captured from *Dark Souls*, by FromSoftware, September 22, 2011.

To illustrate, all the games but the two *Dark Souls* games change the colors on the player's screen to a type of monochrome overlay, portraying the dulling of the senses as the player's character comes closer to death. The sound mix also dampens in addition to the monochro-

matic colors, once again demonstrating the common use of both visual and aural signifiers to create corporeal presence. While the games do differ slightly in how they implement these tactics—such as *Tomb Raider* including a bloody outline around the screen—the consistency of the tropes stood out as a common strategy among the third-person games in the study. These tactics extend the supposed experience of the character body into the experience of the player's body by utilizing the immersive nature of video games to make it feel as if the player is seeing and hearing the same things as the character. When the sound dampens, players might feel that their own hearing is dampening as a result of the character's injuries because the majority of players' focus is on the sound from the game. An analogy in movies would be when a bomb or loud gunshot goes off near the protagonist and the film's sound dulls and replaces the typical sound mix with a high pitched ringing noise, all to help the audience feel what the character is experiencing.[5] The changes in color and sound from the game screen help players empathize directly with the character's body, and doing so suggests that the character's body is just as alive and present as players' bodies.

The fourth trope employed to portray violence is character death. Character death often resets gameplay, and it may even contribute to players' enjoyment of the game (Hoogen, Poels, Ijsselsteijn, & de Kort, 2012). Death not only provides a convenient metaphor for a "game over," it establishes the consequences of the player's choices as grounded in their character's body: if the player does not play the game properly, the player's character—the character's body—suffers death. Each game approaches death differently, but there are some commonalities. Both of the *Dark Souls* games include a scream or moan from the character, followed by the body collapsing to the ground, a monochrome screen, and the text "YOU DIED" appearing. However, the basic premise of the *Dark Souls* series is that the player's character is undead, meaning no matter how many times the character dies, he or she always reappears ready to try again. Death is a method through which the player may attempt new strategies or hone skills, and therefore a way to improve at the game directly related to the character's body: You only get better and have another opportunity to improve when the character dies. Such a technique might be taken for granted, but when compared to other methods of restarting a section of the game such as navigating through an in-game menu, death as a means of improving gameplay delineates the third-person game experience as one reliant on the existence and experience of a pseudo-living character body.

Both *Tomb Raider* and *Shadow of Mordor* include death cinematics, which are movie-like moments when the game takes control away from the player, changes the camera angle, and briefly shows an action as if it was a close-up in a film. Both games use cinematics when the player's character dies at the hands of an enemy, and *Tomb Raider* uses cinematics for environmental or other gameplay deaths as well. When a character's health reaches zero or when something else triggers death—such as making a mistake during a quick time event, like when a game requires the player to press a button in a short amount of time to avoid an enemy's blow—both games change the camera position and take over control of the scene. Usually, a death cinematic shows an enemy striking a final blow to the player's character, but

even more dramatic examples can be found in *Tomb Raider*. For instance, near the beginning of the game, the game's protagonist is careening down a river filled with dangerously sharp branches and other pieces of wood. If the player does not properly avoid the obstacles, a death cinematic plays showing the character being skewered in the neck. Regardless of the cause of death, both games' death cinematics showcase graphic violence, and graphic violence, when portrayed correctly, produces an intense empathetic response in players. Players may place their own feelings and reactions into the character's body in order to unconsciously scream, "What is happening?! This is horrible?!" As a result, the character's body appears as real, living, and, most importantly, feeling as any actual person, and hence the character's body transforms into a relatable human body worthy of empathy.

While *Grand Theft Auto V* and the *Saints Row* series include situations where characters would certainly die, after a character loses all health the screen becomes monochrome, fades to black, and then returns after a loading screen with the character at or leaving a hospital. While the situations that lead to death in these games are exaggerated for the purpose of entertainment, their recovery is linked to reality through hospitals: the character's bodies need medical attention just like human bodies need medical attention. Unlike the other games wherein death signifies that the player has to restart at a previous point in the story, the crime games imply that nothing is "restarted" per se, instead suggesting that even when a character supposedly dies the actions of the player still matter and remain a part of the game world. The games rely on the use of hospitals to create a diegetic explanation for why the world continues even when the player fails, much like the immortal characters in the *Dark Souls* games.

Character Body Athleticism. The games utilize and allow a parkour-level of fluidity and athleticism to character movements—parkour being the gymnastic sport of navigating, jumping, rolling, and running through urban environments—while also highlighting superhuman strength and agility. What is noteworthy about such strategies is not simply that they are employed but that the games manage to effectively portray those movements as natural extensions of the characters' bodies and abilities. The athleticism these games portray also focuses attention on the characters' bodies, making bodies and their movements the most prominent aspect of the games. Such a focus is understandable considering that the player must watch a character's body and its movements for almost the entirety of a game, and therefore athleticism would be an expected addition in order to entertain and impress the player. However, as well as being expected, athleticism contributes to the sense of presence to these bodies targeting players' attention to these bodies' feats. By drawing attention to bodies, the bodies appear present and alive. Each impressive athletic moment performed by a video game body recalibrates players to the sense that these bodies feel real, they are present, they exist, and they move bodies instead of through artificial or mechanical means.

For example, the *Dark Souls* games' movement mechanics foreground fluid movement as a fundamental part of the combat and navigation systems. A prominent feature is the ability of

the player's character to roll, whether to dodge an enemy attack or to make a smoother transition when jumping or falling. The character will take damage after falling to the ground if the distance of the fall exceeds a predetermined height; the greater the height, the more damage is dealt to the character's health. However, if the player executes a roll command at the right moment, namely upon impact to the ground, the character will finish the fall with a roll and the amount of damage taken will be greatly reduced. This mechanism to reduce fall damage mimics common parkour and gymnastics movements in which participates will roll when falling in order to distribute the shock of the fall to a larger portion of the body instead of just to the feet or legs. Similarly, whenever the player's character jumps in the *Dark Souls* games, the jump ends in a roll, again mimicking parkour movement.

While *Shadow of Mordor* also portrays parkour-quality movements by the main character—a feature born from the *Prince of Persia* and *Assassin's Creed* series and now a common element in action-adventure games—the main character's strength and agility is what most draws attention to the digital body. Athleticism features prominently in *Shadow of Mordor*, and the main character often performs feats well beyond typical human abilities such as jumping from tall towers, scaling large cliff faces, and walking effortlessly on top of ropes and other small paths. The character animations manage to portray superhuman abilities while also making the character still move and act like a human body. When the character jumps from a tall building, the landing is brutal and hard, and the character extends his arm and uses his knee to absorb the shock of the fall. For a brief moment, the character pauses and the player is unable to start moving him immediately as if to give weight to the impact. Similar effort is expressed when climbing over objects or up walls: even though the character has superhuman strength, each movement is animated to show deliberateness, weight, and effort.

Similarly, *Tomb Raider* is a game based on death-defying jumps, perilous climbing, and other extreme feats of athleticism and strength. The character often must jump over large gaps or grab onto the smallest ledges with just her fingertips. At one point in the game, she has to cross a ravine by climbing on a crashed airplane hanging vertically against a cliff face. She shimmies across the wings, tosses herself from one part to another using only her hands and arms, and lands safely right as the plane crashes to the ground. Much like *Shadow of Mordor*, her superhuman strength and agility draw attention to the body, but the character animations make her movements appear natural and human. Each jump and climb seems difficult and scary because the character struggles and evokes effort, not just through the animations but also through near constant grunts, gasps, and heavy breathing.

Not only do such animations add realism to the game, and excluding them might prove to be a distraction, but they also emphasize the body's central position as the main focus of the game's action and the player's attention. The animations, sound cues, and other game elements used to portray athleticism add presence to the video game bodies. They could perform similar feats with a mechanical suit like in the *Iron Man* films, but instead these game bodies climb mountains, fall at great distances, run, roll, and jump as bodies. Of course, the

feats performed by these characters could not be recreated by real people, but the question is not whether the portrayals are grounded in reality but whether the actions feel real. While extreme in their nature, these characters' bodies and their athletic performance is produced in such a way as to magnify the embodiedness of the characters. The characters' bodies always feel like they have weight, like they are alive, and like they could be real even though they are not.

The *Saints Row* games and *Grand Theft Auto V* also endow embodiedness to character bodies through the technique of athleticism, but they do so primarily by portraying proficiency at a variety of difficult tasks: All of the characters are proficient runners, bikers, driver, shooters, skydivers, etc. There is very little superhuman about these characters' movements or abilities, but the fact that they can effortlessly perform almost any activity set before them is worth noting.

Procedural System: Character Creation and Customization

Fashioning how a character appears has become a staple of third-person gaming. Perhaps owing its popularity to the *Sims* series of games, such systems enforce the importance of both the visuality of the body as well as the player's control over the body (Anarbaeva, 2012; Photiadis & Souleles, 2015; Misoch, 2008). The third-person body becomes the location of an interactive and creative experience, and it very literally manifests producers' and players' expectations regarding what constitutes a playable digital body. Creating and customizing the digital body is a game in itself, and it features prominently is several of the games chosen for this study. Specifically, *Grand Theft Auto V*, the *Saints Row* games, and the *Dark Souls* games all include character creation and customization as a significant element of the gameplay experience, and the primary themes that create sense of corporeality include raced and sexed bodies, body size and weight, and parental heritage. Neither *Tomb Raider* nor *Shadow of Mordor* includes a character creation mini-game or system, however both the presence and consistency of character creation systems in the other games merit inclusion in this study.

The specific functions and structures found in character creation menus speaks to these games' attempts to make character bodies seem like bodies. In other words, various procedural elements in the character creation menus approach corporeality in such a way as to reinforce the illusion that these bodies are alive and real. In order to access procedural design, simple questions are asked, question such as what is allowed versus not allowed, available as an option versus not available, what are the boundaries of the player's interactive experience? These questions reveal that the character creation menus operate under an assumption that the character bodies should exist within the limits of human experience.

The use of raced or sexed bodies is one strategy the games employ to portray the characters' bodies as grounded in players' cultural reality (Shaw, 2011; Harvey & Fisher, 2013; Kirkland, 2012; Thornham, 2008; Jenson & de Castell, 2011). For instance, all four of the Dark Souls

and Saints Row games present default characters that reflect race in one form or another. The games' default characters were all male, White, and athletically built. While each of these traits can be modified throughout the creation and customization process, they may also be easily skipped to begin the game more quickly. All four games feature a "gender" or "sex" selection option as the first trait to be modified, followed by either "race" ("face" or "homeland" in the *Dark Souls* games) or body build. Considering their prominence in the games' character creation screens, they could be considered primary characteristics, or at least the characteristics most valued by the games' procedural rhetoric.

The *Saints Row* games let the player choose between four races, labeled as African American, Asian, Caucasian, and Hispanic, and selecting any of these races changes the default skin tone and several facial and hair features. All of the default characteristics may be modified, including skin color, but the selection of races code the digital body through passivity: it is easier to choose a race and customize from that point than to alter every single option to the player's liking. The two *Dark Souls* games take a slightly different approach to portraying race during character creation. Several of the games' race descriptions reside within culturally coded racial constructs, see fig. 3 (the descriptions are from the game, while the bracketed labels are what could be surmised as the race the game is attempting to portray):

Figure 3: Race in *Dark Souls*

Top row, from left to right: [White] "Commoner: Very average commoner face." [Latina/o] "Delta Farmer: Commonly seen face in the FiveFinger Delta." Bottom row, from left to right: [Black] "Jubilant Catarina: Jovial features of Catarina, known for festivity and drink." [East Asian] "Far East Traveler: Face from a distant Eastern land of almond skin and think lips." Image from *Dark Souls*, by FromSoftware, 2011

Dark Souls II abandons the labels and descriptions for the races, and while its predecessor includes ten faces/races, *Dark Souls II* limits the selection to four (see fig. 4).

Figure 4: Race in *Dark Souls II*

Choices for "homeland" in *Dark Souls II*, by FromSoftware, 2014

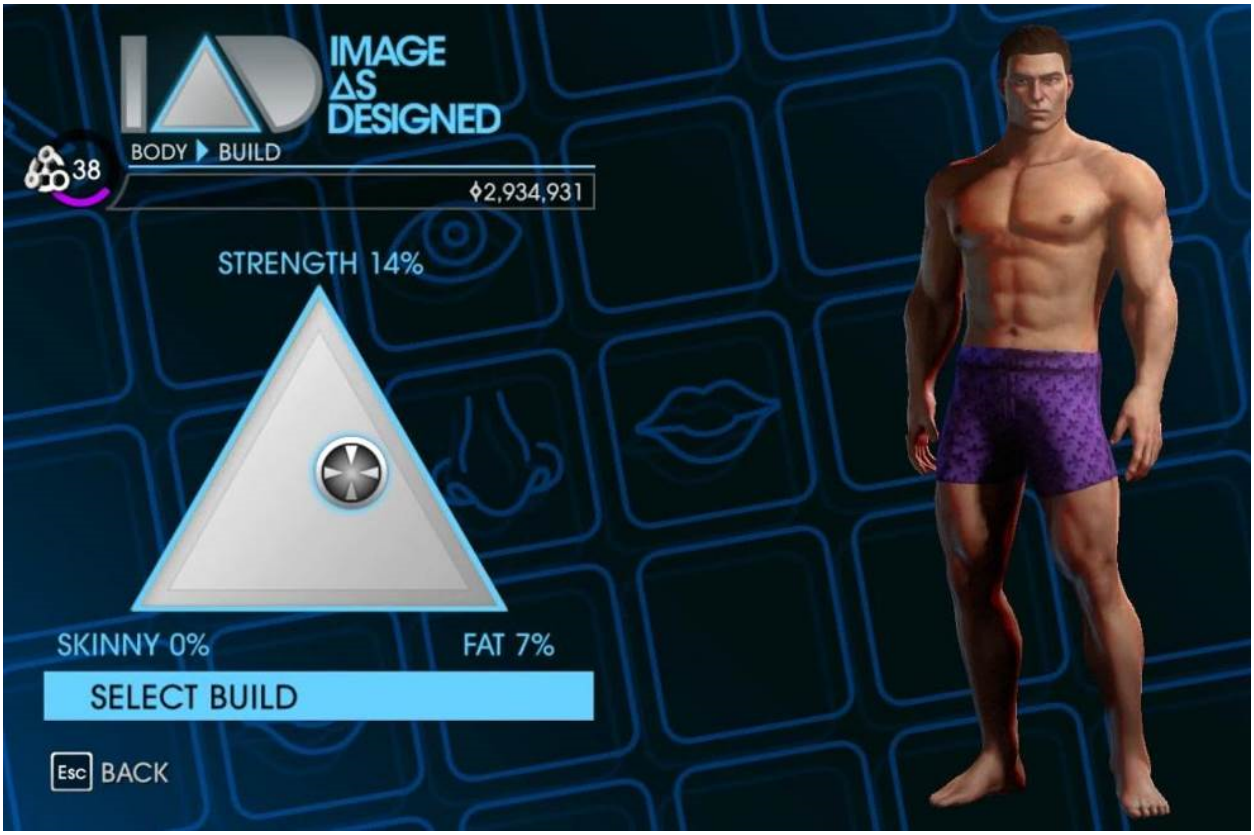
It is worthwhile to note that the four races that remain in *Dark Souls II* correlate with the four types of faces in *Dark Souls* that included racially and culturally codified labels, descriptions, or features.

The raced bodies in these games reflect the cultural experience of players' realities: race matters to players of various cultures wherein it signifies physical attributes, genetics, abilities, and appearance. While the reality of race is far more nuanced and culturally constructed than portrayed in video games—and popular media in general—the games are products of the cultures from which they were produced, and, in those cultures, race is a deeply and historically rooted marker of corporeal identity. The inclusion of codified races in the character creation menus speaks a complex, yet culturally defined, method of making these digital bodies seem real by drawing on beliefs and assumptions about raced bodies, and therefore they make various visual features such as skin tone elements of the characters' embodiedness by relating those features to societal beliefs about how race influences corporeal identity.

Body build is particularly salient to the embodiedness of video game characters considering the United States', and other nations', obsession with weight, appearance, health, and size (Neergaard, 2011; Flegal, Kit, Orpana, & Graubard, 2013), and the option to customize body build suggests that size and shape are critical identifiers of corporeal identity. The options

for customizing the build of the body—such as how athletic, thin, muscular, large, or small the body is—are similar among the *Saints Row* and *Dark Souls* games, even if the games approach the interactive process in different ways. The first *Dark Souls* game includes nine discrete options for body build: average, slim, very slim, large, very large, large upper body, large lower body, top-heavy, and tiny head. The appearances of the different builds do not signify the character being overweight or fat inasmuch as the body and skin, without armor, is still smooth and proportional. *Dark Souls II* lets the player choose between four builds, each a variation of size, and two types of musculature: smooth skin or muscular. Both of the *Saints Row* games utilize a triangle system which lets players move a cursor to adjust how muscular, fat, or skinny a character is (see fig. 5).

Figure 5: Body Builds in *Saints Row 4*



The body build triangle from *Saints Row 4*. The same system is used in *Saints Row: The Third*. Image from *Saints Row 4*, by Volition, August 20, 2013.

The procedural meaning to be had from the body shaping options in both the *Saints Row* and *Dark Souls* games is conflicted yet significant. The size or shape of the characters does not directly affect gameplay: the characters still run, jump, and otherwise move in the exact same way whether they are muscular or smooth, larger or smaller. However, character body size may affect players' gameplay decisions (Peña, Khan, & Alexopoulos, 2016). But it is the

very fact that these options do not affect in-game movement that makes their inclusion so meaningful insofar as the games are implicitly suggesting that a body does not feel like a real, relatable body unless size and shape are just as customizable as race and gender. The amount of public commentary on weight, size, and health has made body shape a meaningful and critical element of corporeal identity, and therefore its inclusion as a customizable option in these games denotes that embodiedness requires the acknowledgement of body build as one of the go-to traits that make bodies feel real and alive.

While the *Dark Souls* the *Saints Row* games feature a traditional character creation screen before the majority of gameplay gets underway, *Grand Theft Auto V* departs from typical options or creation screens in order to accommodate its character driven story, but the differences simply emphasize a genetic approach over total player control when portraying video game corporeality. The online experience in *Grand Theft Auto V*, simply referred to as *GTA Online*, was added several months after the initial release of the game, and one of its central features is that players may, for the first time in the history of the series, create their own characters. *GTA Online* begins in a police station where a default character appears to have been arrested, standing in front of a height chart and holding a placard with a criminal record number (see fig. 6).

Figure 6: *Grand Theft Auto V*'s *GTA Online* Character Creation Screen

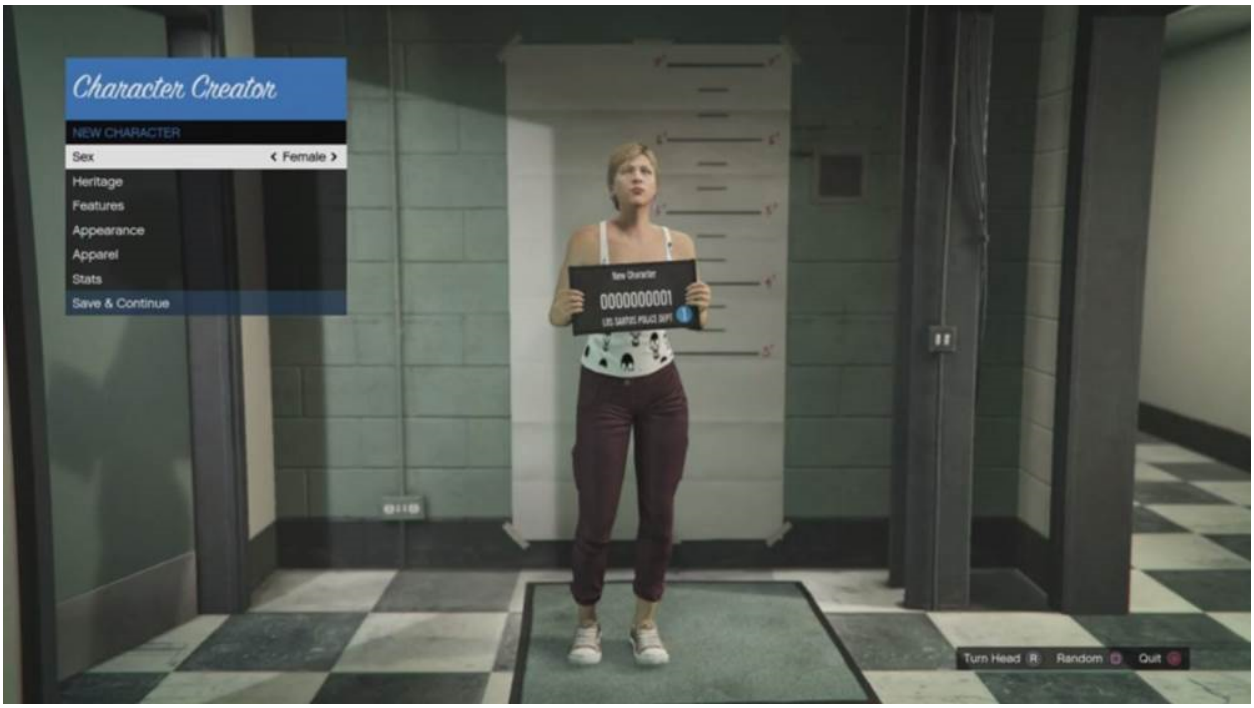


Image from *Grand Theft Auto V*, by Rockstar North, September 17, 2013.

The player may customize the character's body with a menu in the top-right corner of the screen, and the options include sex, heritage, features, appearance, apparel, and stats. While

the sex option offers a typical binary of male or female, the heritage option is a singularly new approach and a departure from most character creation conventions. Under the heritage option, players choose from a selection of mothers and fathers and the character's facial characteristics change to resemble the chosen parents (see fig. 7).

Figure 7: *GTA Online* Heritage Option

The heritage option in the *GTA Online* character creation screen from *Grand Theft Auto V*, by Rockstar North, September 17, 2013.

Two sliders are present in which the player may select how much the character resembles the mother or father in terms of facial characteristics and skin tone.

The heritage option brings genetics into a system historically concerned with offering as much control as possible to players, and it further grounds the game in a world centered on the corporeality of characters. While the sex option is a binary, heritage branches into the realm of biology and race (labeled "skin tone"). The remaining options are more typical of character creation systems found in the other games in this study, but the manner in which the game foregrounds heritage cements bodies at the center of the game's online experience.

Through the inclusion of genetics and parental heritage, the game grounds the digital body to a system that mimics the biological systems that control appearance in the real world. It demarcates these bodies as products of history and biology instead of just avatars made to appear human, and it focuses player awareness on what makes the characters embodied individuals. In the case of this game, sex, race and other customization options contribute to characters' embodiedness through the same technique seen in other games, namely showcasing culturally codified identifiers of corporeal identity. However, in addition to this strategy, *Grand Theft Auto V* singles out genetics and biology as being an underrepresented aspect of embodiedness in video games.

A notable exclusion from the character creation screen is any option to alter body height, weight, or build. Considering how prominently body shape is featured as a customizable option in four other games in this study, its absence in *Grand Theft Auto V* demonstrates that video games need not represent every strategy discussed in order to achieve a sense of em-

bodiedness for the characters. Video game bodies do not need to accurately reflect reality to provide interactive character bodies that feel real and present, and instead they simply must address the need in such a way as to put it over a tipping point that separates game bodies that feel empty and robotic and bodies that look, sound, and play like living things. *Tomb Raider* and *Shadow of Mordor* focus more on the portrayal of violence and athletics, while the Dark Souls and Saints Row games showcase more in-depth character creation systems when compared to the other games. In the case of *Grand Theft Auto V*, the game's design showcases genetics, biology, and heritage, along with various other audiovisual strategies, in order to push the game bodies beyond the tipping point.

Production System: Real Bodies Creating Digital Characters

Before concluding the article with a discussion of the implications of the findings, brief mention should be made of the presence and influence of human actors on 3D, third-person bodies. With recent technological advancements making the inclusion of motion capture animation and voice acting relatively cheap in terms of overall production budgets, it is no surprise that the majority of the games in this study rely on these actor-driven elements to infuse a sense of corporeal presence and reality to third-person bodies. In fact, of the seven games studied, all extensively use voice acting and all but the first *Dark Souls* game utilize motion capture technology for the human character animations. Motion capture is the process by which actors' movements are recorded and transcribed into animation, and it is usually accomplished by tracking specific points on an actor's body as they perform an action or scene in a large, mostly empty studio. Various cameras capture the movements so that information may replace animating by hand. The fluidity and natural look of movements made possible by motion capture lends a sense of realism to the bodies, and when combined with voice acting, these technologies bring actual, human bodies into a direct relationship to the aesthetics of video game bodies.

These production technologies also connect digital bodies to living, breathing people, and the line between the two is blurred when much of what players see of the character comes directly from either the appearance or performance of an actor. In *Grand Theft Auto V*, for example, the three protagonists look nearly identical to the actors who portrayed them, and the actors' voices and body movements comprise the majority of corporeal identifiers witnessed by players. The rolls, jumps, falls, fights, and other moments in these games which focus attention on the characters' bodies were performed, to at least some degree, by actual people who had to exert their energy to showcase their own talents and athleticism.

Aesthetics of Corporeality: Theoretical Implications

The findings from the seven games in this article suggest that the tropes of digital, third-person bodies lend embodiedness to otherwise weightless, non-existent characters, and they create an empathic person out of a collection of digital materials. The audiovisual designs

of violence and athleticism make characters both worthy of empathy and admiration. The character creation systems allow interactivity and customization to help players feel invested in how their characters' bodies appear on the screen. The motion capture and vocal performances of real actors contribute by grounding the characters' bodies to reality. As just one example of this phenomenon, one could compare the two *Dark Souls* games insofar as the first game lacked motion capture for the characters' movements. After playing the games, a stark difference arose regarding the feel of the characters, not just how they looked but how they played. The character in *Dark Souls II* seemed more lifelike, more fluid in the transitions between walking and running, more naturally athletic when jumping and rolling, and more adept and strong when fighting. The motion capture technology used in *Dark Souls II* helped make the character's body feel more present and alive when compared to its hand-animated predecessor. Without this and the other tropes described throughout this article, bodies in the games might come off as lifeless objects: more like dolls or action figures than interactive, AI-driven, lifelike digital bodies.

The aesthetics of corporeality in third-person video games lend a materiality to the immaterial, and, unlike other media, video games require that materiality to extend beyond just how characters appear or sound.[6] Video games are an interactive medium. The bodies that inhabit these games function as extensions of players' thoughts and actions, or, in other words, as extensions of the players' bodies. Embodiedness makes video game bodies feel real while also creating an empathetic connection with players, and each of the systems found in the study sheds a little more light on the construction of these aesthetics. For instance, the production systems of voice acting and motion capture performance emphasize the importance of how video game bodies move and sound, and how the subtle humanity added through human performance may contribute to players' experiences when playing as these characters for dozens of hours. Motion capture and voice acting reduces what makes a body feel real to a handful of characteristics: how a character walks, talks, fights, moves, etc. In a way, these production systems form a type of synecdoche for bodies inasmuch as several distinct parts of what makes a body look and play like a real human are showcased as a substitution for the presence of an actual body.

However, the synecdoche does not complete the picture, so to speak. The audiovisual systems, namely violence and athleticism, emphasize the presence of bodies by highlighting the extremes of corporeal capabilities. When a character plunges hundreds of feet to the ground only to land safely with an impressive roll or pose, the act reminds players that they are playing as human bodies, not just characters. If, for example, the character fell from the same distance and landed safely without any show of athleticism—no parkour roll or powerful three-point pose—the character loses all semblance of corporeality and simply becomes a 3D model in a computer. Watching, hearing, and playing a character as she draws blood from her enemies with her sword, climbs dangerous precipices, and sustains injuries allows the game to invite attention to the body as the central feature of the game. The audiovisual embodiedness makes the game about bodies, and it does so by pushing beyond the limits

of typical human ability to draw attention to the characters' corporeal presence. The same tropes found in human characters also emerge for non-human characters, such as the orcs or giant trolls in *Shadow of Mordor*. The game allows players to hop onto the back of a large troll, called a Graug, approximately four or five times the size of the main character, and wreak havoc on enemies (see fig. 8).

Figure 8: Riding a Graug in *Shadow of Mordor*

The protagonist riding a Graug from *Middle Earth: Shadow of Mordor*, by Monolith Productions, September 30, 2014.

The movement, sound design, and various visual effects draw attention to the troll's size and weight, and by doing so they make the troll embodied and a presence that feels alive and real within the digital space of the game.

Interactive systems such as the character creation menus showcase the boundaries, limits, rules, and requirements of what we consider a human body within the context of a video game, and those limits contribute to the embodiedness of characters by structuring the character creation process in such a way as to ground characters' bodies to the reality constructed in the game. Throughout the process of character creation, the interactivity and options provided to players helps galvanize the embodiedness of that character by limiting and guiding the experience for players. The procedurality of the system makes characters' bodies feel alive and present by structuring players' inputs: the characters can only weigh so little or so much, be so muscular or lithe, be so tall or short, etc. Furthermore, identifiers such as sex, race, heredity, body build, and cosmetics demarcate what game producers deem the features most necessary to visually describe a body. The system, being interactive and procedural, puts bodies at the forefront of these gaming experiences: not only does extensive character customization options single out the fundamental place the character's body inhabits in the game, but also these character creation systems occur as one of the first experiences in the games. In other words, character creation and customization are worth noting for making third-person bodies one of the first interactive systems players encounter as well as portraying bodies as games. Players not only play as these bodies, but they play the bodies through character creation and customization.

This project suggests several theoretical implications, not the least of which is how embodiedness relates to Kenneth Burke's notion of identification (Burke, 1969). The rhetorical term suggests in its most limiting definition that persuasion cannot occur without a connection between the persuader and the audience, yet more broadly the term implies that communication and media in general necessitate an empathic link in order to convey meaning most potently. The existence of embodiedness in third-person gaming may be attributed to this end, and therefore identification can help explain the need for an aesthetic of corporeality in games that heavily feature the player's character body. The bodies in third-person games need an avenue to reach a state of identification with players, and that avenue is the embodiedness of the character design so that players feel the weight and presence of the characters. In other words, embodiedness is a process of identification between players and characters, with the medium being characters' bodies.

Another, more specific, application of current theory to embodiedness is Ian Bogost's (2007) concept of procedural rhetoric, it being particularly relevant to the role of interactivity in character creation. Character creation systems could be described as interactive processes, the kind of processes that inhabit the majority of video games, and Bogost describes procedural rhetoric as "the practice of using processes persuasively" (Bogost, 2007, p. 28). As such, it could be asked if a message exists within the procedurality of character creation, and

if that message relates to video game bodies. To find the message of a procedural system, one needs only to look at the boundaries of gameplay: What is the player allowed to do, not allowed to do, and what are the consequences of player choices? In the character creation systems studied for this project, the limits of gameplay dictate the signifiers of digital bodies inasmuch as those signifiers form the options players have access to when creating a character. Options or modifiers such as race, sex, and body build offer the most direct commentary on what a third-person body may be: a summation of culturally mandated visual identifiers. Much like within typical day-to-day life, what these games consider the most significant elements of video games bodies are sex, race, and size.

Procedurality does not exist in a vacuum, and another implication of this study is the way it supports the way procedural rhetoric may interact with other design elements to produce coherent rhetorics. Gerald Voorhees argues that procedural rhetoric may quite naturally intersect with visual design to produce messages within a game, and this project's findings support that assessment (Voorhees, 2009a; Voorhees, 2009b). Specifically, the games' portrayal of athleticism and violence speaks to how procedurality and visual design cannot be easily separated, and many instances from the games suggest that the two work in tandem to produce a rhetoric about third-person bodies. For example, the parkour-style movements in the *Dark Souls* games are visual markers of athleticism and exaggerated corporeal ability while also forming a basic gameplay mechanic that influences how players interact with the bodies on screen. Movements such as rolling to dodge, running, jumping, and falling form a process of gameplay, and as such they provide an interactive rhetoric regarding the nature of third-person bodies. Meanwhile, the same movements provide an impressive visual experience to players in which the third-person bodies demonstrate their capabilities. In turn, the visual information acts as feedback to players in order to inform gameplay decisions.

Lastly, Timothy Crick's (2011) phenomenological approach to the game body can be further explicated in light of this project's findings. In his 2011 article, "The Game Body: Toward a Phenomenology of Contemporary Video Gaming," Crick discussed Vivian Sobchack's (2004) influential essay about the film body, a subject-object body that sees—through the subjective perspective the film offers—and is seen by the audience. While Sobchack suggests that digital images did not capture the same subject-object of film, she did argue that video games have adopted the aesthetics of film, and Crick (2011) used this concession as a jumping off point to argue that video games, like films, are experienced as subject-object bodies. He wrote:

> Moreover, the typical Renaissance-like linear perspectives used in most first- and third-person videogames creates a subjective perspective of a world that has much in common with the cinematic perspective that implicates Sobchack's film body. It could be argued, then, that videogame perspectives also implicate some kind of invisible "game body." That is, the software-simulated mobile camera that follows (or inhabits) a game character in a virtual world serves double duty as the perspective organ of a "game body" situated within the diegesis. (p. 261)

Crick's game body refers to an invisible subject-object body grounded in the philosophy of phenomenology, but the game bodies—third-person bodies—may be put in conversation with Crick's arguments. Specifically, the tropes of video game bodies (or bodies in video games) found throughout this study add further subjectivity to Crick's game body, or the subject-object of a phenomenological approach to gaming. For instance, Crick discusses how the camera angles in third-person games position the player's perspective so that the player's character body, or avatar as Crick calls it, is almost always in view. However, the camera angle is also behind and/or above the character's body so that the world the player sees resembles the world the character sees. The third-person body in video games, therefore, becomes a lens through which Crick's game body (as subject) sees the world. Additionally, the third-person body acts as the central game body (as object) that the player observes during gameplay. As stated throughout this article, the third-person video game body, the body of the character, is the unifying aspect of the gaming experience, and it may serve as the foundational phenomenological subject-object in Crick's game body, perhaps only shared with the game camera.

Third-person bodies exist in a metaphorical, digital space, making access to their influence on the nature of the rhetorics of gaming bodies, the overarching topic guiding this and other studies in this project, somewhat difficult. However, their presence and popularity in gaming culture given the mass-marketed appeal of these games demand that third-person bodies be acknowledged as meaningful entry point to discussing corporeality in games. Unlike in other media such as online videos or movies, these bodies are not just experienced as objects witnessed by players. The immersive and interactive nature of video games creates a somewhat ethereal relationship between players and their digitally modeled avatars on the screen. In some ways, third-person bodies are extensions of a player's consciousness, and therefore the aesthetics that guide their production and implementation in games directly influence players' own lived experiences.

Endnotes

1. A more comprehensive—and visually impressive—history of game graphics can be found in the short documentary *A Brief History of Graphcs* by the Ahoy YouTube channel, available as of October 4, 2016 at https://www.youtube.com/watch?v=QyjyWUrHsFc.

2. The two conferences: Game Studies Interest Group Pre-Conference, "Gaming Bodies," International Communication Association Conference, San Juan, PR, 2015; and PLAY: Creative Gaming Festival 2016, "Let's Get Physical: Game and Body," Hamburg, Germany, 2016.

3. Sales data for this game is currently unavailable, but it may be surmised that the actual sales data exceeds 4 million copies sold given the popularity of digital distribution platforms. See VGChartz.com, a video games sales figures estimation index: http://www.vgchartz.com/

gamedb/?name=shadow+of+mordor.

4. The effects of pain on humans has been extensively studied, to the point where citing even basic assumptions such as this one would require a list of articles much longer than would fit the purpose of this article. For a basic introduction to the topic, see Attridge, Keogh, and Eccleston (2016) and the journal *Pain*.

5. The role of silence or dampened sounds is a relatively understudied element of video games. The most comprehensive work on the subject is Collins' book *Game Sound* (2008). However, film studies scholars have examined how silence, in relation to sound, conveys a variety of meanings, including trauma (Maseda, 2014), suspense (Daniel-Richard, 2010), and immobility/invisibility (Fawell, 1990).

6. While I typically use the words "material" and "materiality" in the philosophical sense, such as described in my review of literature, I use them in this instance in regards to a sense of weight, mass, or physical presence.

References

Anarbaeva, S. M. (2012). Samarita Ibanez: An identity journal from first life to second. *Journal of Virtual Worlds Research*, *5*(1), 1-14.

Angello, A. J. (2013, March 8). New game, old success: The rebooted Tomb Raider sells 1 million copies is 48 hours. *Digital Trends*. Retrieved from http://www.digitaltrends.com/gaming/tomb-raider-reboots-the-classic-series-sales-success-moving-1-million-copies-in-two-days.

Attridge, N., Keogh, E., & Eccleston, C. (2016). The effect of pain on task switching: Pain reduces accuracy and increases reaction times across multiple switching paradigms. *Pain*, *157*(10), 2179-2193.

Barlett, C. P., Harris, R. J., & Bruey, C. (2008). The effect of the amount of blood in a violent video game on aggression, hostility, and arousal. *Journal of Experimental Psychology*, *44*(3), 539-546.

Bogost, I. (2007). *Persuasive games: The expressive power of videogames*. Cambridge, MA: MIT Press.

Burke, K. (1969). *A Rhetoric of Motives*. Berkeley and Los Angeles: University of California Press.

Carr, D. (2014). Ability, disability and dead space. *Game Studies, 14*(2). Retrieved from http://gamestudies.org/1402/articles/carr

Cobbett, R. (2009, June 17). The evolution of gaming graphics. *TechRadar*. Retrieved from http://www.techradar.com/news/gaming/the-evolution-of-gaming-graphics-609050.

Collins, K. *Game sound: An introduction to the history, theory, and practice of video game music and sound design*. Cambridge, MA: MIT Press.

Conway, S. (2010). 'It's in the game' and above the game: An analysis of the users of sports videogames. *Convergence: The International Journal of Research into New Media Technologies, 16*(3), 334-354.

Cover, R. (2006). Gaming (ad)diction: Discourse, identity, time and play in the production of the gamer addiction myth. *Game Studies, 6*(1). Retrieved from http://gamestudies.org/0601/articles/cover

Crick. T. (2011). The game body: Toward a phenomenology of contemporary video gaming. *Games & Culture, 6*(3), 259-269.

Crystal Dynamics. (2013, March 5). *Tomb Raider*. PlayStation 3, PlayStation 4, Xbox 360, Xbox One, Microsoft Windows, OS X, and Linux: Square Enix.

Daniel-Richard, D. (2010). The dance of suspense: Sound and silence in North by Northwest. *Journal of Film & Video, 62*(3), 53-60.

DeVane, B., & Squire, K. D. (2008). The meaning of race and violence in Grand Theft Auto. *Games & Culture, 3*, 264-285.

Duwell, R. (2015, April 16). Dark Souls II sells 2.5 million, Dragon Ball Xenoverse at 2 million. *TechnoBuffalo*. Retrieved from http://www.technobuffalo.com/2015/04/16/dark-souls-ii-sells-2-5-million-dragon-ball-xenoverse-at-2-million.

Fawell, J. (1990). Sound and silence, image and invisibility in Jacques Tati's Mon Oncle. *Literature Film Quarterly, 18*(4), 221-230.

Flegal, K. M., Kit, B. K., Orpana, H., and Graubard, B. I. (2013). Association of all-cause mortality with overweight and obesity using standard body mass index categories: A systematic review and meta-analysis. *Journal of the American Medical Association*, 309(1), 71-82.

FromSoftware. (2011, September 22). *Dark Souls*. PlayStation 3, Xbox 360, and Microsoft

Windows: Namco Bandai Games/FromSoftware.

FromSoftware. (2014, March 11). *Dark Souls II*. PlayStation 3, PlayStation 4, Xbox 360, Xbox One, and Microsoft Windows: Bandai Namco Games/FromSoftware.

Gazzard, A. (2012). Standing in the way of control: Relationships between gestural interfaces and game spaces. In M. Wysocki (Ed.), *CTRL-ALT-PLAY: Essays on control in video games* (pp. 121-132). Jefferson, NC: McFarland.

Gerling, K. M., Livingston, I. J., Nacke, L. E., & Mandryk, R. L. (2012). Full-body motion-based game interaction for older adults. Proceedings from *CHI'12*, Austin, Texas, 1873-1882.

Giddings, S., & Kennedy, H. W. (2010). 'Incremental speed increases excitement': Bodies, space, movement, and televisual change. *Television & New Media*, *11*(3), 163-179.

Goldfarb, A. (2013, September 20). GTA 5 sales hit $1 billion in three days. *IGN.com*. Retrieved from http://www.ign.com/articles/2013/09/20/gta-5-sales-hit-1-billion-in-three-days.

Graf, D. L., Pratt, L. V., Hester, C. N., & Short, K. R. (2009). Playing active video games increases energy expenditure in children. *Pediatrics*, *124*(2), 534-540.

Harvey, A., & Fisher, S. (2013). Making a name in games: Immaterial labour, indie game design, and gendered social network markets. *Information, Communication & Society*, *16*(3), 362-380.

Hoogen, W. V. D., Poels, K., Ijsselsteijn, W., & de Kort, Y. (2012). Between challenge and defeat: Repeated player-death and game enjoyment. *Media Psychology*, *15*(4), 443-459.

Jenson, J., & de Castell, S. (2011). Girls@Play: An ethnographic study of gender and digital gameplay. *Feminist Media Studies*, *11*(2), 167-179.

Jin, S. A. (2009). Avatars mirroring the actual self versus projecting the ideal self: The effects of self-priming on interactivity and immersion in an exergame, Wii Fit. *CyberPsychology & Behavior*, *12*(6), 761-765.

Juul, J. (2010). *A casual revolution: Reinventing video games and their players*. Cambridge, MA: MIT Press.

Karmali, L. (2013, October 9). GTA 5 currently holds seven Guinness World Records. *IGN.com*. Retrieved from http://www.ign.com/articles/2013/10/09/gta-5-currently-holds-

seven-guinness-world-records.

Kennedy, H. W. (2002). Lara Croft: Feminist icon or cyberbimbo? On the limits of textual analysis. *Game Studies, 2*(2). Retrieved from http://www.gamestudies.org/0202/kennedy

Keogh, B. (2014). Across worlds and bodies: Criticism in the age of video games. *Journal of Games Criticism, 1*(1). Retrieved from http://gamescriticism.org/articles/keogh-1-1.

Kirkland, E. (2012). Experiences of embodiment and subjectivity in Haunting Ground. In D. Riha (Ed.), *Frontiers of cyberspace* (pp. 125-147). New York: Rodopi.

Krcmar, M., & Farrar, K. (2009). Retaliatory aggression and the effects of point of view and blood in violent video games. *Mass Communication & Society, 12*(1), 115-138.

Lim, J., Zhan, A., Ko, J., Terzis, A., Szanton, S., & Gitlin, L. (2012). A closed-loop approach for improving the wellness of low-income elders at home using game consoles. *IEEE Communications Magazine, 50*(1), 44-51.

Maddison, R., Mhurchu, C. N., Jull, A., Jiang, Y., Prapavessis, H., & Rodgers, A. (2007). Energy expended playing video console games: An opportunity to increase children's physical activity? *Pediatric Exercise Science, 19*, 334-343.

Makuch, E. (2012, December 17). Saints Row: The Third sells 5.5 million. *GameSpot*. Retrieved from http://www.gamespot.com/articles/saints-row-the-third-sells-55-million/1100-6401640.

Malliet, S. (2007). Adapting the principles of ludology to the method of video game content analysis. *Game Studies, 7*(1). Retrieved from http://gamestudies.org/0701/articles/malliet.

Maseda, R. (2014). Mood, silence and ghostly words: Female trauma in Isabel Coixet's The Secret Life of Words. *Studies in European Cinema, 11*(1), 48-63.

Matulef, J. (2015, April 6). Tomb Raider reboot has sold 8.5m copies. *Eurogamer*. Retrieved from http://www.eurogamer.net/articles/2015-04-06-tomb-raider-reboot-has-sold-8-5m-copies.

McGloin, R., Farrar, K., & Krcmar, M. (2013). Video games, immersion, and cognitive aggression: Does the controller matter? *Media Psychology*, 16, 65-87.

Merleau-Ponty, M. (1962). *Phenomenology of perception*. (C. Smith, Trans.). New York and

London: Routledge & Kegan Paul.

Mhurchu, C. N., Maddison, R., Jiang, Y., Jull, A., Prapavessis, H., & Rodgers, A. (2008). Couch potatoes to jumping beans: A pilot study of the effect of active video games on physical activity in children. *International Journal of Behavioral Nutrition and Physical Activity*, *5*(8), http://www.ijbnpa.org/content/5/1/8.

Misoch, S. (2008). Avatars as user visualization and their social function in virtual environments. *Studies in Communication Sciences*, *8*(1), 51-65.

Monolith Productions. (2014, September 30). *Middle-Earth: Shadow of Mordor*. PlayStation 3, PlayStation 4, Xbox 360, Xbox One, OS X, Microsoft Windows, and Linux: Warner Bros. Interactive Entertainment.

Neergaard, L. (2011, February 1). America's obsession with weight loss dates back 150 years. *The Bismarck Tribune*. Retrieved from http://bismarcktribune.com/lifestyles/health-med-fit/america-s-obsession-with-weight-loss-dates-back-years/article_37e50df0-2dc1-11e0-afb6-001cc4c03286.html.

Nooney, L. (2013). A pedestal, a table, a love letter: Archaeologies of gender in videogame history. *Game Studies*, *13*(2). Retrieved from http://gamestudies.org/1302/articles/nooney

Obsidian Entertainment. (2010, October 19). *Fallout: New Vegas*. Microsoft Windows, Xbox 360, and PlayStation 3: Bethesda Softworks.

Parisi, D. (2013). Shocking grasps: An archeology of electrotactile game mechanics. *Game Studies*, *13*(2). Retrieved from http://gamestudies.org/1302/articles/parisi

Parisi, D. (2015). A counterrevolution in the hands: The console controller as an ergonomic branding mechanism. *Journal of Games Criticism*, *2*(1). Retrieved from http://gamescriticism.org/articles/parisi-2-1.

Peña, J., Khan, S., & Alexopoulos, C. (2016). I am what I see: How avatar and opponent agent body size affects physical activity among men playing exergames. *Journal of Computer-Mediated Communication*, *21*(3), 195-209.

Phillips, T. (2013, April 12). Dark Souls worldwide sales total 2.3 million. *Eurogamer*. Retrieved from http://www.eurogamer.net/articles/2013-04-12-dark-souls-worldwide-sales-total-2-3-million.

Photiadis, T., & Souleles, N. (2015). A theoretical model, including user-experience, aesthetics and psychology, in the design process of 3D avatars. *Journal of Virtual Worlds*

Research, 8(1), 1-13.

Pihlainen, K. (2004). From embodiedness to community: Recognition, alterity, and the existentialist social conscience. *Human Affairs, 14*(2), 126-134. Available on www.ceeol.com.

Prasch, M., Bianchi-Berthouze, N., van Dijk, B., & Nijholt, A. (2009). Movement-based sports video games: Investigating motivation and gaming experience. *Entertainment Computing, 1*, 49-61.

Rockstar North. (2013, September 17). *Grand Theft Auto V*. PlayStation 3, PlayStation 4, Xbox 360, Xbox One, and Microsoft Windows: Rockstar Games.

Sample, M. L. (2008). Virtual torture, videogames and the war on terror. *Game Studies, 8*(2). Retrieved from http://gamestudies.org/0802/articles/sample

Shaw, A. (2011). Do you identify as a gamer? Gender, race, sexuality, and gamer identity. *New Media & Society, 14*(1), 28-44.

Shinkle, E. (2008). Video games, emotion and the six senses. *Media, Culture & Society, 30*(6), 907-915.

Smith, G. (2016). A proceduralist view on diversity in games. *Journal of Games Criticism, 3*. Retrieved from http://gamescriticism.org/articles/smith-3-a.

Sobchack, V. (2004). The scene of the screen: Envisioning cinematic and electronic presence. In *Carnal Thoughts: Embodiment and Moving Image Culture*. Berkeley: University of California Press. Original work published in 1990.

Song, H., Peng, W, & Lee, K. M. (2011). Promoting exercise self-efficacy with an exergame. *Journal of Health Communication, 16*, 148-162.

Tach, D. (2013, August 28). Saints Row 4 sells more than 1 million copies, DLC announced. *Polygon*. Retrieved from http://www.polygon.com/2013/8/28/4669336/saints-row-4-dlc-announced-sells-1-million-copies.

Thornham, H. (2008). 'It's a boy thing': Gaming, gender, and geeks. *Feminist Media Studies, 8*(2), 127-142.

Todes, S. (2001). *Body and world*. Cambridge, MA: MIT Press.

Triana, B. J. (2015). Red Dead masculinity: Constructing a conceptual framework for analyz-

ing the narrative and message found in video games. *Journal of Games Criticism*, *2*(2). Retrieved from http://gamescriticism.org/articles/triana-2-2.

Villapaz, L. (2013, September 8). 'GTA 5' costs $265 million to develop and market, making it the most expensive video game ever produced: Report. *International Business Times*. Retrieved from http://www.ibtimes.com/gta-5-costs-265-million-develop-market-making-it-most-expensive-video-game-ever-produced-report.

Volition. (2011, November 15). *Saints Row: The Third*. PlayStation 3, Xbox 360, and Microsoft Windows: THQ.

Volition. (2013, August 20). *Saints Row 4*. Microsoft Windows, PlayStation 3, PlayStation 4 Xbox 360, Xbox One, Linux, and SteamOS: Deep Siler.

Voorhees, G. A. (2009a). I play therefore I am: Sid Meier's Civilization, turn-based strategy games and the cogito. *Games & Culture*, *4*(3), 254-275.

Voorhees, G. A. (2009b). The character difference: Procedurality, rhetoric, and roleplaying games. *Game Studies*, *9*(2). Retrieved from http://gamestudies.org/0902/articles/voorhees.

Williams, K. D. (2013). The effects of video game controls on hostility, identification, and presence. *Mass Communication & Society*, *16*, 26-48.