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Experience, 60 Frames Per Second:
Virtual Embodiment and the Player/Avatar Relationship in Digital Games

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Abstract

From the earliest days of video game studies as a field, and before - with discussions of virtual reality - a debate has endured over the nature of virtual embodiment. From Janet Murray's Hamlet on the Holodeck in 1997, to Edward Castronova's foundational examination of the phenomenon of MMOGs, to Valtin, Pietschmann, Liebold, and Ohler's examination of online social immersion in 2014, the concern over how embodiment is configured in virtual spaces is ongoing. Further, questions of whether such embodiment is possible, and if the experience should be called 'embodiment', continue to be omnipresent. Several of the theories put forth about virtual embodiment are, at best, not fully explored or followed through to their logical conclusion. At worst, some of these theories paint a troubling, dehumanizing picture of the perception of virtual embodiment and the player/avatar relationship. The continued focus on the phenomenology of the experience is understandable, however, as the synthesis of player/user and in-game avatar is the locus of most, if not all, video game and virtual environment experiences. Engaging with theories of virtual identity, gender, the player/avatar relationship during gameplay, and the often embattled juxtaposition of narrative and gameplay in video games, this paper explores the ways in which avatars are both characters and embodied experiences. This examination addresses ideas of the avatar as vehicle, the avatar as narrative character, and the avatar as cybernetic embodiment, and strives to find a synthesis between them, in order to come to terms with the unique structure of the player's interactions with the virtual experience.

Author Keywords

Virtual Embodiment; Identification; Player-Avatar Relationship; Phenomenology; Immersion; Performance Studies; Character

Introduction

Video games, almost without exception, provide the player with an avatar in order to navigate the experiences on offer. *Spacewar!* (Steve Russell, 1962), for example, places the player in control of a spaceship resembling those from the pulps and comics of the 1930s. Any first-person shooter provides, at the very least, an avatar's hands through which to interact (read: shoot at) with the world on offer, as can be seen from *Wolfenstein 3D*'s BJ Blazkowicz (id Software, 1992), to *Half-*

Life's Gordon Freeman (Valve, 1998), to the multiple soldiers in any given entry in the *Call of Duty* series (Activision, 2003-present). Even abstract games offer a form of avatar interaction, albeit equally abstract. *Pong* (Atari, 1972) provides 'paddles' - solid white rectangles - as players' representatives in the game space. The player is represented in the game space of *Tetris* (Alexy Pajitnov, 1984) by the tetraminos themselves, as they turn, speed up, slow down, and move left and right by the player's input.

Tied to these avatars is the notion of 'virtual embodiment' – the notion that a player can inhabit these avatars on a phenomenological level. What is meant by 'phenomenological level' is the immediate, in-the-moment, sense-experience tying body and mind together defined by Merleau-Ponty (1958), brought into the realm of video games by way of experiencing physical bodily reactions to virtual events and actions. From the earliest days of video game studies as a field and before - with discussions of virtual reality - a debate has endured over the nature of virtual embodiment. Janet Murray's (1997) foundational text *Hamlet on the Holodeck,* offered a definition of immersion which serves equally well for virtual embodiment:

> [T]he sensation of being surrounded by a completely other reality, as different as water is from air, that takes over all of our attention, our whole perceptual awareness. We enjoy the movement out of our familiar world, the feeling of alertness that comes from *being in this new place, and the delight that comes from learning to move within it*. [Italics added for emphasis]
>
> p. 98 (1997)

Extrapolating from this definition, virtual embodiment entails the bodily reactions and sensations which come from this digital immersion. The nature of this dynamic is one which is continually explored, from Edward Castronova's (2005) foundational examination of the phenomenon of MMOGs (Massively Multiplayer Online Games), in which he likens the avatar to a prosthetic, to Valtin, Pietschmann, Liebold, and Ohler's (2014) examination of online social immersion, to Ratan and June Sah's (2015) research on avatar customization and stereotype threat, the concern over how embodiment is configured in virtual spaces is ongoing.

Further, questions of whether such embodiment is possible, and if the experience should be called 'embodiment', continue to be at the forefront of the discussion, either explicitly or through implication. Several of the theories put forth about virtual embodiment are, at best, not fully explored or followed through to their logical conclusion. At worst, some of these theories paint a troubling, dehumanizing picture of the perception of virtual embodiment and the player/avatar relationship, turning human characters into mere objects; more specifically, and most commonly, vehicles the player 'drives' through the virtual landscape. The continued focus on the phenomenology of the experience is understandable, however. The synthesis of player/user and in-game avatar is the locus of most, if not all, video game and virtual environment experiences.

In the Driver's Seat

In order to discuss ways of conceptualizing virtual embodiment, it is important to examine the problematics present in various theories of the player/avatar relationship. James Newman (2002) encapsulates the more concerning side of the conception of the player/avatar synthesis in his article *The Myth of the Ergodic Videogame*. Newman prefaces his discussion with the ambiguous assertion that "the "character" is better considered as a suite of characteristics or equipment utilized and embodied by the controlling player (*Ibid*). Newman's conceptions of player-characters are already troubling, as they break down what is essentially an embodied representation (the avatar) into a series of functions. Yet Newman does acknowledge in this statement that this series of functions is embodied by the player. This acknowledgement suggests that Newman does, in fact, consider virtual embodiment not only possible, but a necessary and inherent part of the player/avatar experience.

The larger problem comes to the fore, however, when Newman elaborates on his theory of how the player/avatar relationship functions. Further to suggesting that the embodied avatar in the gaming experience is reducible to a toolset, Newman puts forth the following:

> They are vehicles. This is easier to come to terms with when we think of a racing game like *Gran Turismo* where we drive a literal vehicle, but I am suggesting that, despite their representational traits, we can think of all videogame characters in this manner. On-line, Lara Croft is defined less by appearance than by the fact that "she" allows the player to jump distance *x*, while the ravine in front of us is larger than that, so we better start thinking of a new way round…

> (*Ibid*)

By this reasoning, and almost articulated by Newman, a character like Lara Croft (from the *Tomb Raider* series) is directly equivalent to a Honda Civic or a Mazda 3, either in Newman's *Gran Turismo* example, or in terms of the real-world cars. In other words, both literal vehicle and in-game avatar can be viewed simply as an apparatus by which the user can travel and perform certain functions, and nothing more.

Setting aside arguments about the personalities with which real-world vehicles may be imbued by both manufacturers and owners, there are several issues present in Newman's conception. The first concern is the fact that Newman attributes the same level of 'vehicle-ness' to both a real-world car and the ones in *Gran Turismo*. In addition to the fact that the experience is inherently different due to remediation, racing games such as *Gran Turismo* are most commonly played from the third-person perspective. What play from this perspective means is that *the virtual cars already have virtual drivers*. The player does not inhabit the car – the player inhabits the car's driver, thus leading to another form of the player/avatar synthesis embedded in the experience of playing as a human avatar.

Further, as gaming hardware has improved, these drivers have not remained as mere implication. At the time of Newman's article, windshields in racing games remained opaque, because the hardware running these games was incapable of rendering explicit driver models within the cars (see *Figure 1*). This lack of visibility appears to perpetuate Newman's theory of the player

inhabiting the vehicles themselves, as the appearance given is that of the player directly controlling the vehicle with no mediating human avatar. With more powerful hardware, as illustrated in games such as *Forza Motorsport 5* (Microsoft Studios, 2013) and *Gran Turismo 5* (Sony Computer Entertainment, 2010), the drivers of each vehicle are clearly visible, and react to the player's inputs along with the car being driven (see *Figure 2*). That games in long-running series like *Forza* and *Gran Turismo* have both included these drivers indicates that their presence was always, if not overt, implicit throughout.

Figure 1 - Gran Turismo (Sony Computer Entertainment, 1998)

Figure 2 - Gran Turismo 5 (Sony Computer Entertainment, 2010)

The Character of Characters

The larger issue present in Newman's argument is that, if Lara Croft is simply a vehicle when controlled by the player, then Croft's individual personality, traits, and embodied existence separate from the player carry no significance – Lara Croft as a person/subjecthood does not matter. This author has already written on how this dynamic in Newman's theory is not, and cannot, be the case. Even if an avatar were to be viewed simply as a set of abilities, those abilities would be dictated and determined by the personality and past experiences of the character. Because the nature of the character informs the abilities available to the player, the avatar as an autonomous character, with his/her own experiences and personality, is immediately and inherently rendered of extreme importance to the gameplay experience (Alton, 2012).

This notion of the avatar as autonomous character is made explicit to the player in the form of idle animations – animations that occur if the player does not input a command within a sufficient time window. While the player needs to take control in order to progress the game, there are numerous examples of avatars expressing their personality independent of the player's input throughout gaming history. Examples include Lara Croft dusting herself off and kicking dirt from her heels in the *Tomb Raider* series; Donatello playing air guitar with his bo in *Teenage Mutant Ninja Turtles IV: Turtles in Time* (Konami, 1992); the various Marvel comics characters performing little character-specific and character-defining actions (for example, Iron Man lifting his visor to allow Tony Stark's face to be visible) in *Lego Marvel Super Heroes* (Traveler's Tales, 2014). These idle animations all establish that these are characters separate from the player who are working together with the player to complete the goals of the game. The most extreme example of this dynamic is Sega's Sonic the Hedgehog. From his first game forward, if left idle, Sonic will tap his foot and check his watch, impatiently waiting for the player to start playing again (*Sonic the Hedgehog*, Sega, 1991). In *Sonic CD* (Sega, 1993), Sonic will, if left too long, leap from the screen ending the player's game entirely. The character, tired of waiting for the player, simply terminates the conditions for play because of his impatient personality.

In addition, the avatar's characterization is explicitly made known to the player through various channels before Newman's 'on-line' play takes place. Using Newman's example of Lara Croft, the game's box art cues the player into the fact that "Your mission is the deadliest one to date" (*Tomb Raider* box art, 1996), an indication that the events of the game would not be Croft's first death-defying expedition, further cemented by the mere title of the game – *Tomb Raider*. Moreover, the first thing the player is presented with in reading the manual is a backstory/biography for the character. This introductory backstory details Croft's aristocratic lineage and upbringing, her near-death experience which awakened her to her tomb-raiding ways, her disavowal by her parents due to clashing ideologies, her multiple publications on her adventures, and her deep-rooted love of archaeology (*Tomb Raider* instruction manual, 1996).

Even a so-called 'blank slate' character like *Half-Life*'s Gordon Freeman is nothing of the sort. During the opening of *Half-Life*, the player is, while still able to look around as Freeman, enclosed in an underground tram car for the first five minutes of the game, unable to move around. During this time, the Black Mesa research facility is explained in visual short-hand, through quick views of labs, industrial areas, military vehicles and weaponry, and what appears to be toxic waste. As well, cues are offered by the automated message playing in the tram, such as notes on security clearances, the dangers of radiation poisoning, and non-disclosure.

All of these more subtle pieces of character priming are bolstered by the overt heads-up print out during the ride. This print-out details Freeman's name, sex, and age; his PhD in Theoretical physics from MIT; his position as research associate; his assignment to the anomalous materials lab; his security clearance level; his administrative sponsor (which is classified); and his disaster response priority (*Half-Life*, 1998). In the space of five minutes, Freeman's essential backstory is laid out for the player before they can even take one step in his shoes, as it were. This exposition does not even take into account the game's box, which, while written in second-person, establishes Freeman's position as experimental scientist and offers the only image of Freeman, illustrating him as a brown-haired white male with a goatee (but, interestingly enough, no glasses) (*Half-Life* box art, 1998). This is all to say that, while Freeman does not talk and his hands are gloved, allowing for players to picture their own ethnicity for him, his history and characteristics are laid out for the player from the outset, establishing him as a distinct character from the player and not the blank slate he is touted as being.

As such, any potential embodiment experienced by the player is experienced in a way that calls to mind Lacan's mirror stage theory of identification, as illustrated by Laurie Taylor (2003). Taylor's article discusses the fracturing of experience when the player sees the avatar, or, more precisely, the avatar's reflection, from a first-person perspective during gameplay (see *Figure 3*) (*Ibid*). Taylor's argument makes sense from a purely Lacanian perspective, but, as will be discussed later, the phenomenology of the player/avatar experience actually recovers the schism she highlights.

Figure 3 - *Duke Nukem looking in a mirror in Duke Nukem 3D (3D Worlds, 1996)*

The Subject Objectified

Returning to Newman's view of avatar-as-vehicle, this perspective further serves to negate any progressive possibilities, such as explorations of gender identity/discussion and ethnic diversity, inherent in the avatar as embodied presence. In Helen Kennedy's work on Lara Croft as both problematic and laden with potential, she states the following:

> Thus, in this complex relationship between *subject* [as individual] and *object* [of desire] it could be argued that having to play through *Tomb Raider* as Lara, a male player is transgendered: the distinctions between the player and the game character are blurred. One potential way of exploring this transgendering is to consider the fusion of player and game character as a kind of queer embodiment, a merger of the flesh of the (male) player with Lara's elaborated feminine body of pure information. This new queer identity potentially subverts stable distinctions between identification and desire and also by extension the secure and heavily defended polarities of masculine and feminine subjectivity.
>
> (2002)

This potential for a queering experience (which Kennedy recognizes as problematic, considering the character's overtly intentional design catering to the male gaze) is rendered moot, if Newman's argument is correct. If Lara Croft is simply reducible to the ability to jump, climb, and shoot offered up to the player, without the female embodiment that makes her Kennedy's subject and object, then the subjectivity – and thus the potential queering experience – are lost, leaving the play experience as empty navigation.

That Newman himself acknowledges the embodiment occurring in the player/avatar relationship means that this queering potential may still exist, which, by extension, means that Lara Croft as character is more important than Newman gives her, or any avatar, credit for. To highlight the issue further, Newman's conception of Lara Croft as nothing more than vehicle is illustrated and critiqued in Peggy Ahwesh's *She-Puppet* (2001)[1]. In her video piece, Ahwesh re-edits several sequences of gameplay from the early games in the *Tomb Raider* series, including the many deaths that Lara Croft experiences in the course of gameplay, removing context for each sequence in the process. While addressing the same cultural problematics of the character that Kennedy mentions, Ahwesh also draws attention to one of the major concerns in the avatar-as-vehicle argument. Removing all reference to the character as such, and showing Croft solely as a fetishized object highlights the inherent misogyny present in assuming that Lara Croft, as a female character, is just an object to be controlled by the player. In reducing Croft or any avatar to the equivalent of a car, or, perhaps more accurately as illustrated by the *Half-Life* example mentioned, a roller coaster car, any agency/subjectivity inherent to the human avatar, and therefore any potentially progressive aspects of the play experience, are minimized to the point of non-existence, as well.

Perhaps most concerning about this perspective is how widespread it appears to be. Edward Castronova (2005), in his foundational work on MMOGs, *Synthetic Worlds*, articulates a surprisingly similar concept of the player/avatar relationship, while also unintentionally highlighting precisely why it is so troubled. In discussing player-controlled characters in these online spaces, Castronova states the following:

> [T]he avatar's attributes felt like they were your own personal attributes. This step appears to be psychologically natural, because the avatar is an extension of your body in a new space. The body is the tool by which the mind receives sensation and manipulates the environment, and this avatar body does exactly and only that. And it makes sense to think of it as *your* body, just as someone with a prosthetic arm should think of it as *his* arm. Coming to own the avatar, psychologically, is so natural among those who spend time in synthetic worlds that it is barely noticed. No one ever says, "My character's strength is depleted," or, "My avatar owns a dune buggy." They say "my strength" and "my dune buggy". [Italics in original]

> p. 45 (2005)

It is clear that Castronova views player-characters as akin to Newman's vehicles, likening them to tools or prosthetics allowing for interaction within virtual environments.

This view reduces the investment that players have put forth in making sure that their unique characters are imbued with distinct personalities and abilities which reflect those choices. As well, the efforts and intentions of the developers to give options which allow for such investment to take place, for good or ill as pointed out by T.L. Taylor (2003), are also minimized. In fact, rather than problematizing player investment, Taylor's discussion of the technical, economic, and value constraints built into MMOs by developers highlights players' willingness to work through or around these restrictions to make the characters their own (p. 27). This is not a dismissal of the issues raised by Taylor, which are still prevalent, under-examined, and need wider address in the industry; it is simply a recognition that players and developers may have different intentions for avatars, both of which Castronova sidelines.

Further, the idea that these avatars, which many players go to great lengths to cultivate as characters independent of their real-world selves, and despite the players' making the choices for them, are simply tools or vehicles negates Sherry Turkle's findings on player experiences in online spaces. Turkle's *Life on the Screen* (1995) illustrates that players wind up inhabiting the personalities of these characters, causing a synthesis of the two, allowing players to experience different identities. Further, Turkle, as does Castronova, discusses the real-world impact of playing in these online arenas. Turkle, however, discusses how experimenting with these identities allows for exploration of aspects of one's identity in offline realms, and adoption of traits enacted online (*Ibid*).

Bessière, Seay, and Kiesler (2007) take this notion one step further, testing the notion of the avatar as an ideal self, rather than as a separate identity. Their study concluded that not only do players interact with their avatars as ideal versions of themselves, but that this ideal self actually has a positive impact on both depressive affect and self-esteem offline (p.7). These beneficial findings are mitigated by Ratan and Young Sah's (2015) study, while still illustrating the strong attachment of players to their avatars. In their research, Ratan and Young Sah found that players who used a female avatar were more likely to underperform in a math problem-solving competition in which females were the minority of competitors, regardless of the player's declared offline gender (p. 368). This finding is consistent with stereotype threat, which is, as Ratan and Young Sah explain, "that when people are made aware of negative stereotypes relating to their relevant social groups, they tend to perform worse at tasks implicated in the stereotype" (p. 368). These areas of synthesis

suggest not the operation of a vehicle or the use of a tool, but the creation of a character with a personality and an expression of empathy by way of a shared experience, for better or worse.

Castronova's description of the player/avatar experience is illuminating in one respect, however. In his discussion, Castronova makes explicit what is only implied in Newman's article: a Cartesian bias. Castronova discusses how the body is simply a tool operated by the mind, enforcing the Cartesian body/mind divide and precluding the Merleau-Pontean body/mind fusion, or synthesis. This stance, along with the conception of the player-avatar specifically as prosthesis, is doubly problematic. On the one hand, it ignores the psychological importance of the player being able to experiment with different or ideal identities and aspects of personality, as both Turkle and Bessiere et al highlight. On the other hand, it negates the very real issues, experiences of and biases toward, people who require prosthetics, as well as the psychological concerns raised by Ratan and Young Sah.

Making a Connection

Taking this body/mind synthesis notion further, if the body and mind are indivisible, then a virtual body would, once player/avatar synthesis occurs, become an extension of this same principle. As Andreas Gregersen and Torbal Grodal state in their article, *Embodiment and Interface*:

> [W]e would argue that interacting with video games may lead to a sense of extended embodiment and sense of agency that lies somewhere between the two poles of schema and image – it is *an embodied awareness in the moment of action,* a kind of *body image in action –* where one experiences both agency and ownership of virtual entities. This process is a fusion of player's intentions, perceptions, and actions. Once the player stops acting in relation to the game system and pays conscious attention to his or her own embodiment, this effect subsides in favor of a more regular body image. [Italics in original]

> p. 67 (2009)

This theory of embodiment not only allows for the experience which Castronova describes while dismissing the Cartesian body/mind divide, it also incorporates a wider theory of engaged embodiment.

Csikszentmihalyi (2008) discusses how a person engaged in a pleasurable, challenging activity will enter a state of 'flow', in which the outside world, in terms of both space and time, recedes into the background of perception, and the task consumes the person's awareness in a pleasurable manner. In this regard, the player, as discussed by Gregersen and Torbold (2009), would enter into this virtual embodiment by way of Csikszentmihalyi's flow state and only re-inhabit the original body image when that state of flow is interrupted, either through external stimulus or internal focus shifts.

Given this flow-state virtual embodiment, the question then becomes one of entry. If the player enters into this embodied awareness by way of entering the flow state, the catalyst for this state remains to be determined. Here, again, the narrative aspects of the player/avatar relationship come

into play. Andrew Burn (2006) puts forth an interesting, if not fully progressed, theory for this opening to engagement, and thus embodiment. Burn identifies the same pronoun blurring that Castronova has illustrated, but attributes the phenomenon to a different, more narratological cause. Instead of seeing the avatar as tool or vehicle, Burn sees the avatar as protagonist in the oral tradition (p. 78-79).

Invoking Walter Ong's concept of the second orality, Burn contends that the experience of playing as an avatar causes the player to engage in the experience as both audience member, in that she/he is partaking of a narrative already constructed, and author, in that the only way for that narrative to be fulfilled is through the player's dynamic actions via avatar (p. 87). This idea is reiterated in Egenfeldt Nielsen, Heide Smith, and Pajares Tosca's *Understanding Video Games* (2007). In their discussion of narrative, these authors state the following: "[t]he key to a successful mechanics is to make players feel that they are contributing to creating a plot; the most successful narrative experiences happen in games where our actions have noticeable plot consequences" (p. 183).

While this theory may at first blush offer the solution to how virtual embodiment is initiated, there are some flaws inherent in this conception which are a result of the interactive nature of the medium. While not dismissing the importance of narrative in the gameplay experience, Burn's (2006) positioning of the player as both audience and author still implies both a linearity and a sense of detachment to the act of play. Even with the improvisation and audience input inherent to the oral tradition, which Burn asserts are incorporated and remediated technologically in the gameplay experience (p. 87), the position of the subject is still that of an outsider – the subject and the protagonist of the narrative do not directly coincide.

Diane Carr perhaps expresses this concern best when addressing the ways in which players embody real-world reactions to in-game events. In her article, *Space, Navigation, and Affect*, she states:

> Certain kinds of recognition or 'identification' – this would suggest – do exist between the player and avatar. Game analysts cannot explain such phenomena simply by applying models of cinematic identification. Theories of cinematic identification were developed using models drawn from psychoanalysis, and the film spectator's stillness in front of the screen is a central premise. The player's relationship to on-screen events and bodies, by contrast, is dependent on the user taking action, and any theory of 'ergodic identification' would have to allow for this. Additionally, games position and address their players through various perspectives, modes, channels, menus, inputs, and outputs. This suggests that it would be a mistake to try to impose a single model on to all avatar-player relations.

(Carr, 2006, p. 68)

As Carr states, most theories of media identification assume an essentially passive consumer as subject (setting aside reader response theory for the moment). As the player is actively contributing, not only to the understanding of the game's narrative, but to its advancement in a way not replicable in other, more traditional, forms of media, the logical extension is that older media theory cannot properly express the dynamics in play.

Taking Centre Stage

Interestingly, Carr notes a similar phenomenon to Burn and Castronova's pronoun blurring which helps to direct the discussion toward a potential answer. As Carr states, "All players, surely, have found themselves flinching when an avatar bangs its head, have felt themselves lean over with pseudo-centrifugal forces or recoil when an avatar plunges over a cliff" (p. 68). Carr is not the only one to note this phenomenon, as Gregersen and Torbold (2009), as well as Manovich (2001), comment on similar examples. What this behaviour on the part of the player indicates is twofold. First, it reaffirms the theory put forth by Gregersen and Torbold, reinforced by Csikszentmihalyi. Second, it illustrates a *performance* on the part of the player, separate from the inputs necessary to playing the game.

From this notion, the idea can be extended that, rather than being an extension of the oral tradition, as per Burn, the virtual embodiment of the player/avatar relationship can instead be identified with a modified form of theatrical performance. To be sure, the language of theatre and performance is present in several of these discussions on virtual embodiment. Burn (2006) repeatedly refers to the player as an actor when actively taking control of the experience; Manovich discusses the virtual in terms of movement on a stage (2001); even Murray's (1997) early text invokes a Shakespeare play, to be experienced instead of simply watched or read. In fact, the title of Burn's article expressly states that the user is playing a role, a thread that Burn leaves to the side in favour of his oral tradition theory.

Taking the perspective of the player inhabiting a role explains several of the qualms/issues expressed in other theories. Returning to Laurie Taylor's Lacanian critique of the first-person perspective in video games, the player, more often than not, does not experience the schism Taylor assumes. If the notion stands that the player is inhabiting the role of the protagonist from this first-person perspective as a performance, then the inherent difference and otherness of suddenly seeing a reflection not one's own during a first-person play session makes sense - that reflection both is and is not the player's own, as it is that of the role currently being inhabited.

Frameworks for approaching game play as performance, rather than Burn's oral tradition, have already been conceptualized. Clara Fernandez Vara (2009) lays out the ways in which both digital and analogue games may be seen through a theatrical lens. In her discussion, Fernandez Vara parallels Burn's notion of the synthesis between actor and audience, but her conception replaces the oral poet of Burn's discussion with the actor on-stage during a play (p. 6). In addition, she offers a tri-partite framework by which such a performance may be conceptualized. The game's code/mechanics stand in the place of the theatre play's script (p. 5). The runtime/dynamics parallel the theatre's performance time, in terms of both length of the show and time periods internal to the narrative, as well as the actual unfolding of the plot/events (*Ibid*). Finally, the player's interaction, and the aesthetics produced through this interaction, is equivalent to the symbiosis, or mise-en-scene in her terms, of audience and theatrical performance (p. 5).

This idea of performance also allows for the variation and improvisation which Burn attributes to the oral tradition. No two theatrical performances are identical, and theatrical actors move through a pre-set narrative (the play itself, or Fernandez Vara's code/mechanics) while also contributing their own actions and expression through their embodiment of the roles being played and the choices made as a result. Further, online embodiment may be seen as improvisational theatre performance. The players are given bare frameworks, in the form of quests, back-story, and so on,

and the players themselves improvise the proceedings based on their characters' interactions with each other and the world they inhabit.

To be sure, the notion of theatrical/improvisational performance alone would not suffice to describe in full the player/avatar relationship or the phenomenon of virtual embodiment, as indicated by Carr. What this perspective does offer is the entryway into the embodied experience, as well as a reconciliation of the fracturing of perception indicated by Taylor. That these theories, as well as several aspects of Burn's conception, remain relevant is testimony to the fact that video games are a unique medium to which previous media theories do not wholly apply.

Interestingly, video game developers themselves have recognized the phenomenon of both player performance and virtual embodiment, and incorporated them into their games. In UbiSoft's *Assassin's Creed* series (2007-present), the main conceit of the game is that the modern-day protagonist is able to share in the experiences of his ancestors by way of technological mediation in the form of a device dubbed the animus. Not only is the modern-day protagonist sharing in these experiences, but he is doing so in a way that both allows for variations based on his own, and thus the player's, improvisations, as well as offering an embodied experience.

The way in which the games highlight the player/avatar synthesis via this narrative structure extends beyond simply the modern-day protagonist's mirroring of the experience of play. When players control the modern-day protagonist as an avatar, it is without the assistance of the animus; as such, there is a lack of on-screen extra-diagetic information. Once the modern-day protagonist utilizes the animus, they, and by extension the player, are fed data additional to the direct environment by way of on-screen displays provided by the animus/game.

Several other games have incorporated the virtual embodiment experience as part of gameplay, as well. In *Fez* (Polytron, 2012), for example, the avatar is the only character in the game world who is capable of seeing objects in three dimensions. This conceit not only draws attention to the mediation inherent in the use of a screen to interact with the game (by necessity, *all* of the objects are viewed in two dimensions), but also with the player's engagement and embodiment with the avatar in the movement from a 2D perception (prior to Gregersen and Torbold's state of virtual embodiment) to a perception of 3D space (as the player/avatar synthesis occurs, and virtual embodiment takes place, essentially leaving the screen behind in favour of the virtual environment).

As it is addressed by the academic community and the developers of these games, virtual embodiment as an actual phenomenon is widely recognized and is deserving of the moniker. The processes by which this virtual embodiment occurs, both psychologically and in terms of media studies, are less easily defined, and it is the hope of this author that they continue to be examined. This article is not intended to be a final conclusion to the debate; instead, it is hoped that this discussion will spur further thought into exactly how virtual embodiment takes place, both in terms of single players and in the realm of online spaces.

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