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Convergence Markets: Virtual [Corpo]reality

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Markets, Globalization & Development Review

Convergence markets: virtual [corpo]reality

Introduction

Computer games are now big business with an estimated sectoral value of \$137.9 billion in 2018. The forecast is for it to rise to \$180.1 billion by the end of 2021 (see <https://www.wepec.com/news/video-game-statistics/>). Within the sector there is a growing trend towards multi-user social gaming that transcends media platforms, enabled through the embodiment of game-based assets – including avatars and property components such as weapons, clothing, artefacts, and skins – by players who use their ludic affordances to extend experiences into other virtual spaces. In effect, this constitutes a convergence of markets derived from different forms of media content. In this paper, we reflect on the game-to-virtual corporeal transcendence, drawing on examples from the machinima (machine-cinema) game culture, discussing the cultural context of the game and its impacts on game players, creators and consumers who interact in virtual communities using the device of an avatar.

From Computer Game to Virtual Reality

Udsen and Jorgensen (2005) noted that computer games comprise culture, function and experience that increasingly overlap with our technofutures. The computer game has become a representation of contemporary life as entertainment, a mode of work and a means with which to access cultural experiences through a breadth of media - it is "the medium of the century" (see Brown 2018; "Unfree Space of Play", this issue). The computer game is typically but not exclusively a non-textual informational interface through which consumers mediate emotional and intellectual experiences as an aesthetic form of cultural artefact, yet such experience goes beyond mere usability to design interaction (e.g., Kirkpatrick 2011; Lowgren and Stoltermann 2004). A common device used by games and experienced by players is an avatar, a term that ironically derives from Sanskrit meaning the worldly incarnation of a deity. The avatar facilitates imaginary experiences that reflect a continuum between real life and total fantasy, and their adoption and adaptation has become a common theme of social interaction with the emergence of game cultures. This notion is poetically illustrated in the award-winning metaphorical short film created within the virtual environment *Second Life: A Journey into the Metaverse* (Tutsy NAvArAthnA 2011). Although of course imaginary, the film tells the intriguing story of an avatar abandoned by his original creator who escapes the virtual environment, staging a rescue by inhabiting the

dreams and space of another human player (see Figure 1).

Figure 1: Screenshot: A Journey into the Metaverse (Tutsy NAvArAthnA 2011)

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Such experiences are increasingly invigorated by affordable virtual reality technologies. These include computer game competitions as a spectator sport (e-sports), especially in Asia and through the live-streaming medium Twitch that Amazon recently bought for nearly \$1 billion, as well as comic conventions (comic cons) which give game players and followers a platform to discuss thematic interests. These provide ludic affordances that are described as ambiguous, excessive or functionally 'post-optimal' in ways that challenge players to critically reflect upon their experiences (Blythe et al. 2003). Post-optimal in this sense refers to the experience of play beyond the game, where game assets become a focal 'virtual resource' in their own right outside the original play context, often without the physical constraint of the game story or even a computer and technological environment. For example, game leaderboards are monetized for competitions using real currency and

game assets are turned into material costumes worn and carried by consumers at comic cons. In both examples, although representing quite different approaches, the affordances of the game are translated into physical components. Although the former is often referred to as gamification, this is a term that has been hijacked by commercial actors that seek to capitalize on the massive success of the computer games sector by exploiting components in non-game environments. The term, however, also has another connotation as exemplified in the comic con example, where gamification refers to the behavior of prosumers in their transmediation of game resources acting largely without commercial interest. This is motivated by fandom and community spirit, sometimes directed for or against the resource originator but other times idiosyncratically derived. An example of this is evidenced in Rooster Teeth's Red Versus Blue (RvB) internet TV series. RvB is a comedy based on game characters from *Halo* telling human stories about faceless astronaut-soldiers on opposing teams fighting over a worthless box canyon on a distant planet. The series began in 2003 and each episode released on its private network (and subsequently video sharing channels as these came into being) quickly became more popular than any US TV channel series, with over a million views. Now in its sixteenth series (2018), RvB has generated millions of followers for its characters, episodes and live shows, the game publisher has become its main sponsor, and characters/actors have created multiple spin-offs (see <https://roosterteeth.com>).

Kirkpatrick (2008; 2011), building on Benjamin and Adorno, suggests computer games and virtual worlds connect the experience of fun and play to invoke physical response, albeit through metaphorical modes of interaction using avatars. Kirkpatrick's thesis is that games are aesthetic objects that can be analyzed through the 'rhythm of play', reminding us that it is the imagination that shapes reality. The pleasure of the playful experience is therefore deeply embedded in consumption practices, rather than only a visual interaction with computer artefacts (see e.g., Egenfeldt-Nielsen, Smith and Tosca 2008). This is not so much about ludology – the graphical interface and game rules – but the 'embodied' emotions players derive from the playful experience channeled through visual cues during gameplay. Nor is it simply about fun. An early example of a virtual embodied experience was described by Dibbell (1993) whose classic tale of a 'rape in cyberspace' outlines the breadth and depth of emotion possible within virtual environments even when the character representation is merely textual and inferred. In such a way, game players become co-creators of consumption experiences or, reflecting Toffler's

(1980) term, 'prosumers' (simultaneously producers and consumers) of virtual resources. More recent examples include the performance of emotive ceremonies such as weddings and funerals, where virtual resources are used to embody the [mostly] real connection between players. The nature of embodiment is however transient, as exemplified in the case of the conduct of a funeral for a game player who had died in real life. The ceremony was raided by an opposing team who did so knowing that their game adversaries would be inside the game but unprepared to play and respond to their tactics. Such was the response to this that arguments ensued offline between the players who were upset that the memorial service had been interrupted and those who legitimized their attack as an appropriate use of the game (Marino 2008). Who is right in this context depends entirely on the perspective of the player and, by implication, their momentary intention.

For some, the avatar is the realization of a personified characterization of the player through which identity is projected. However, the mode of avatar is likely to be bound up with the ends it serves which are both specific to the game and inherently social (Frow 2012). The avatar is embodied as an affective sympathetic interface between the player's virtual and actual worlds (Paiva et al. 2002), as highlighted in the examples in the preceding paragraph. Characters may be allocated a name and an aural voice, yet it is the notion that it is embodied, unitary, persistent over time and performs actions that imbue it with some aspect of intentionality that is important to the player. Such embodiment does not, however, have to be a complete representation for meaning to be inferred (Frow 2012). For example, in 'first person shooter' themed computer games, the player's character is simply implied by the cross-hairs of a gun sight and there are no other cues that allude to the characterization beyond the implied actions of the sight. Moreover, the game stories are not innocent. In first person shooter games like *World of Warcraft (WoW)* and *Halo* the world is dichotomized into 'us' and 'them'. We are either part of the Alliance or else "colonial subjects and other marginalized people — in [the case of WoW] the Horde — [who] are cast largely as dirty, disorganized, primitive (in the case of trolls, orcs and tauren), or greedy (in the case of the undead and blood elves)..." (Wagner 2013, p.255). In Dholakia and Reyes (2018), violence in games and virtual spaces are strongly connected with military establishments. Indeed, the fuzzy distinction between reality and virtuality has been challenged particularly through artistic practices such as that of media artist Joseph Delappe (see www.delappe.net). Delappe's 'Dead in Iraq' was a long-running 'memorial' work that used the US Army's recruitment game, *America's Army*, and

assets (coded play, uniforms, etc.) to enact the death in service of every US soldier between 2006-11 (some 4,484 people), when US troops were withdrawn.

Conversely, Boellstorff (2008) suggests that avatars are more than a representation of an idealized self; they are also a site of 'self-making' and as such, may exhibit their own personality that may be adopted and/or adapted by the player. Thus they are 'virtually real', reflecting Dholakia and Reyes' (2013) point that virtual worlds are becoming less tied to places and texts and more integrated into real information flows. The legal distance between the avatar and the player is, however, derived from the fact that most avatars and other virtual property (assets) within computer games are owned by the game developer (or publisher) and not the player even though they may have created and embellished the content (Fairfield 2005). This does not necessarily correspond to the close psychological distance often observed between players and their avatars, such as that articulated by Baldwin (this issue, "Virtual Avatars"; see Baldwin 2018). Nor does it reflect contemporary transmedia practices where multiple media platforms (games, film, social networks, performance arts, etc.) – using a suite of emerging technologies such as motion capture and facial recognition are – increasingly used to generate embodied opportunities for players to create extended narratives, stories and experiences (see, for example, Dholakia, Reyes and Kerrigan 2018). We explore this further in the following section.

Embodiment and Agency

Embodiment theory is rooted in activity theory, built upon the notion of co-presence in the virtual space. Where an avatar becomes the nexus of communication (Mennecke et al. 2011), it is perceived to be non-mediated and proximate (Lombard and Ditton 1997). Communication is therefore through a 'whole body' experience as a social actor that has the potential to shape perceptions of others. Presence and co-presence within Mennecke et al's (2011) embodied social presence (ESP) framework implies synchronicity of communication (Bowman and McMahan 2008), sufficient realism of the social context (Nowak and Biocca 2003; Turner and Turner 2006) and use of a body schema that may be physical, virtual or imaginary (Biocca 1997). Presence, originally conceptualized by Goffman (1963), is the presentation of self in face-to-face interactions, where co-presence is co-location in space-time that allows reciprocal communication (e.g., Zhao 2003). Increasingly, however, this may be virtual and mediated through technologies that provide a sense of presence (see Subramaniam, Nandhakumar and Baptista 2013) through a

virtualized and imagined body. Activity is socially determined through interactivity among actors within a community of practice (Engelstrom 1987) and therefore the manipulation of virtual tools that elicit responses from others is the means through which a person may derive an experience (Mennecke et al. 2011). That said, the interaction is often a 'costumed performance' (Wardle 2016), where the interaction is intentionally fictionalized (Klevjer 2012) or 'puppeteered' through game control mechanisms.

While any resulting anthropomorphic customization of the virtual actor may increase a sense of ownership and 'extended identity', embodiment has been found to be temporally related to the process of performance (Ratan and Sah 2015), that is, it is primarily sensorimotor in nature. This is particularly interesting since most game control mechanisms (e.g., joysticks, keyboards) remain unlike natural human movement albeit the increased haptic nature of devices would close this gap and could potentially create even more realistic virtual experiences. Despite this, it has been proposed that embodiment is cognitively perceived as a gestalt (e.g., Masson 2015; Vallgarda et al. 2015). Through what are known as Proteus effects (after the shape shifting Greek God), players with taller avatars become confident and this effect carries over offline. Similarly, avatars in black robes commit more antisocial acts in *WoW*. Also, those with more attractive avatars are more successful, those with child avatars react quicker and have a more childlike worldview, those with older avatars become more concerned with saving and those with more physically fit avatars want to exercise more (Belk 2013). As Zhang and Dholakia (2018) suggest, the construction of a coherent identity in virtual contexts demonstrates its fluidity, which may be shaped through a breadth of on- and offline experiences.

Using the lens of agency theory (Buzonni 2016), research has primarily explored whether avatars may be experienced as social objects rather than embodied self-representations (e.g., Banks 2015; Bogost 2012; Popat and Preece 2012). It has been found that anthropomorphic characteristics influence perceptions of agency even when characters are depicted as non-living representations such as teapots or vehicles (Allen and May 2015; Banks and Bowman 2016) whilst Klevjer (2007) suggests that an avatar is a "prosthetic extension of agency and perception" (p.92). There is now recognition that the presence of a performer in a human body mediated by an avatar is subjected to different rules of existence, where the two bodies (human and anthropomorphized representation) shape each other (Stojnic 2015). Following Žižek (1994), Stojnic (2015) contends that natural existence is transgressed in two important ways: it is

possible for many persons to inhabit a single body (in cyberspace) and many persons may exist outside a single body in the actual world. Furthermore, Žižek (2000) highlights that a competing multiplicity of personae may be created in virtual spaces.

This intimates the ways in which avatars and their performance may be co-created and experienced in multiple spaces including through social media networks as a social construction (Haraway, 1984). Moreover, there is growing recognition that the plasticity of human minds and behaviors enable adaptation to new and complex affordances such as social simulations using technologies (Vogeley and Bente 2010) and virtual reality (Lanier 1990). Embodiment in such contexts may become intuitive and notional where successful 'signal transmission' within virtual social environments is thought to be related more to temporal dynamics. This refers to the speed of response within an animated interactive process rather than specific types of simulated features, which highlights the important role of co-presence in virtual spaces (Evans 2012; Heider and Simmel 1944; Vogeley and Bente 2010;). In this way, reflecting McLuhan's (1964) the 'medium is the message' mantra, humans may become so immersed in computer-mediated practices that their behaviour changes, rather than technologies being merely adopted as tools (Kay 2013; Klevjer 2012).

Much of the literature describes the nature of embodiment and performance in computer games as uni-modal human-computer interaction. With the advent of networked social media environments and emerging technologies such as motion capture and facial recognition, however, the co-created relationships between games (assets), players and communities of practice – where co-presence of multiple players generates rich social experiences – there is little research on which to draw. Furthermore, despite most visual game-based characterizations being constrained to a specific platform but with growing emphasis on portable 'datafied' assets that constitute a form of personal identity, the performance of persona and its re-enactment may already transcend a multiplicity of media platforms including games and social media networks. At least hypothetically enabled by developments in data protection laws (e.g., EU's 2018 General Data Protection Act), the portability of data in particular provides interesting new opportunities and impetus for researchers to revisit how embodiment is performed. Such legal frameworks allow for data that uniquely identifies an individual to be exported to new platforms. With advanced technological algorithms (artificial intelligence) that capture a player's 'fingerprint' (play style), in much the same way that a person can be identified from the way they

walk, the breadth of data ('datafication') that may uniquely identify an individual is an intriguing avenue of exploration. Notwithstanding this, games are already 'leaky' environments, where players are prosumers and resources are appropriated and remediated in new contexts within and beyond their originating game space.

Play, space and leaky constraints

In extending these ideas, the emergence of consumer culture associated with computer games presents unique opportunities to combine gameplay, creative practice and consumption through re-use of game-based content to generate new content (e.g., Marino 2004). Creative practice is a progressive experience that, whilst bounded by computer game rules, is transitional in that it extends the game through performance beyond the play space. As Lowood (2005) states, it is a form of 'high performance play'. Viewed from this perspective, the computer game is a set of tools and materials, rather than a puzzle to solve. The game then becomes a 'leaky constraint' through which the player incorporates their wider context (Juul, 2005). Whilst some consider it to be an example of remediation i.e., the appropriation of one cultural form into another (e.g., Bolter and Grusin, 1999), others such as Jenkins (2006) state: "we are seeing the emergence of new story structures, which create complexity by expanding the range of narrative possibility..." (p.121). Yet the narrative he refers to is not text based but multi-sensory (audio-visual and somatosensory) and must be culturally contextualized to a community of practice (e.g., Cova and Cova 2001). The 'language' context may be expressed through the adapted game-based assets and meaning derived both from gameplay and the aesthetic performance that is understood in non-game/actual life or imaginary contexts (Kirkpatrick 2011). According to Kirkpatrick (2011), whilst not everything in the game will be meaningful, the character and its performance may become a virtual projection of self, even though the avatar is merely a "set of functions, opportunities and constraints" (p.179). Through the creative 'performative' act of generating a new aesthetic form by corporeal appropriation(s) of the game, the cultural context may be interrogated through a sociological lens, as intimated in McCosker and Wilken's (2014) work. These authors emphasize the need for a way to connect experiences in order to share understanding. This is likely to be a key driver for breaking through game constraints and extending playful experiences across multiple platforms.

Within a computer games context, consumption takes place over time in a multi-dimensional virtual space and is enacted by the ability to derive meaning from the plasticity of objects, space and time within the

environment. Objects are manipulated through a multi-sensory engagement with the experience (Eskelinen 2004). Importantly, reflecting Ranciere (2009), Kirkpatrick (2011) suggests that an aesthetic form may be representational rather than a faithful reproduction of reality. For example, the cross-hair sight of a gun may infer there the presence of a person using the sight, rather than a person's 3D character representation. Empathic pleasure in the representation is simply contingent to a given moment in the virtual context. It is through active customization that players are increasingly encouraged to consume products and services, exemplified in the computer game context where without play there is no sensory experience at all (Lash and Lury 2007); a computer game until played is simply programming code. Thus, within virtual environments, players often recreate representational moments reflecting some aspect of cultural significance to themselves by anthropomorphizing and animating content, effectively ascribing a life pattern to a game asset that is essentially inanimate and/or non-human in form (it is code and pixels or some kind of non-living representation). Taking advantage of the leakiness of the game, players may appropriate and modify characters, say, by 're-skinning' them (changing some aspect of their appearance), imbuing them with new features, characteristics or powers, placing them in unfamiliar contexts, and/or engaging in behaviours not originally intended within the game. An extensive body of creative works now exists across the internet, known as machinima (a term now recognized as a concatenation of machine, animation and cinema) (e.g., Marino 2004), where this practice is exemplified. It is the creating of original content using, typically, 3D game assets often recorded and archived as film but the practice also has process and performative modes (Hancock 2014; Jenkins 2006). Harwood (2011) positions this practice as a form of visual culture where the game is a creative 'matrix' or canvas for capturing the juxtaposition between prosumers' virtual and real worlds (for examples of machinima see <https://archive.org/details/machinima>).

What is particularly interesting in the emergence of machinima is the developmental trajectory the phenomenon has taken – it is a strong case for understanding how virtual embodiment has resulted in 'fused' media practices, something we feel has come to reflect 'virtual corporeality'. Four phases are evident which illustrate different forms of embodiment and the convergence between virtual and real life for game prosumers. We next describe these phases in some detail to provide insight through historical contextualization.

Phase 1: Game embodiment (1996-2000)

This phase begins with *Diary of a Camper*, released October 1996,

acknowledged to be the first machinima film. Figure 2 is a screenshot – note the narrative at the top of the screen, “Is that who I think it is?”, made in reference to the dead character in the scene. The origins of this format can be traced to the game-culture phenomenon known as Demoscene, where video games were used to showcase the increasing software processing capabilities of computer hardware. Early popular games of *Doom* (released 1993) and *Quake* (released 1996), both first person shooter games, attracted attention because recordings of gameplay could easily be shared (peer to peer) and replayed resulting in a form of spectatorship among game players. *Diary of a Camper* (using *Quake*) was, however, unlike the many other fan films that had already been made: its creators produced narrative text subtitles through which its simplistic characters were embodied by reflecting the creators’ personalities in a playful rendition that poked fun at the game’s owner and developer (John Romero of id Software, the ‘who’ in the quote). To make the film, its creators wrote and modified game code to realize new camera angles and splice scenes together during replay. The film inspired other ‘modders,’ film fans and games experts to create *Quake* movies, becoming a cultural meme which continues today. The focal period for this machinima phase is, however, 1996-2000. The film was reproduced by sharing and rerunning game code on similar-type game consoles. Subsequently, the genre of films were distributed by early internet channels such as The Cineplex, Psyk’s Popcorn Jungle and Quake Movie Library (Marino, 2004). *Doom* remains popular today (its latest version re-released in 2014 became a best seller in 2016).

Figure 2 Screenshot: *Diary of a Camper* (The Rangers 1996)

Source: This image is reproduced from <https://archive.org/details/DiaryOfACamper> under the Fair Use Act for non-commercial, academic purposes only

Generated through hacking and modifying game code, this phase is characterized by relatively low quality graphic visualization, stereotypical 'shoot 'em up' content and 'laddish' behaviour, with narratives that demonstrate an 'in-game' embodied experience. It is hence a form of co-creation that integrates brand (firm), player and community values, reflecting social integration of real and virtual worlds (Juul 2005; Kirkpatrick 2011) by attributing characters with personalities beyond the game. For example, players' own traits may be represented alongside that of personalities with whom they are familiar (in the instance of *Diary of a Camper*, John Romero was a work colleague of a member of The Rangers), or representation is of an amalgam of desired attributes, say, imbued by game mechanics (weapons, tools, characters, environments). Thus, embodiment is the result of a creative form of play and deep knowledge of the game and understanding of related technologies.

To maximize this co-creative process, editing software emerged to facilitate the production of content (Kelland, Morris and Lloyd 2005) and subsequent iterations of Quake (II and III) were released that enabled players to post-edit their experiences. By 1999 interest had reached a critical point and the steady decline of this form of machinima was the consequence of id Software's threat to take legal action over the by now widespread sharing of game files because it wanted to protect gameplay over newly emerging internet-derived networks. Despite this, Quake has remained popular, and by 2010 the source code for earliest versions was released by the developer, enabling full customization of content that has now led to the generation of many game-based machinimas.

Phase 2: Artistic embodiment (2000-2008)

The community of machinima creators (machinimators) began to coalesce in the late 1990s and by 2000 one key proponent, Hugh Hancock, had launched Machinima.com. Hancock, along with fellow machinimator, Anthony Bailey, had originally coined the term machinima in 2000, misspelling a concatenation of 'machine' and 'cinema' (Hancock and Ingram 2007). This term was coined in order to disassociate the creative works and processes from a specific game engine. It was the beginning of the formal recognition of the process of disembedding prosumers from the game. According to Marino (2004), the term became popular because it also alluded to 'animation'. Machinima.com became a resource for the community by publishing tutorials and articles on how to make content

alongside hundreds of films created in a wide range of games. Following the release of *Quad God* (2000, Triton Films), the first machinima to be made using a screen capture method that enabled it to be viewed without a copy of the specific game in which it had been created, machinima began to attract mainstream viewing attention. The first film festival, orchestrated by not-for-profit organization Academy of Machinima Arts and Sciences (AMAS), celebrated this in 2002 (at QuakeCon). AMAS had been created by a number of machinimators within the emerging community, each individually being multi-award winning film producers in various creative formats, with machinima among them. Subsequently, AMAS hosted almost annual film festivals and formed partnerships with a number of international organizations and sponsors, including a European contingent (Institute of Creative Technologies at De Montfort University, UK) which brought together many of the most recognized machinimators around the world in 2007. AMAS continued until 2008, when funding constraints and career development opportunities for the founding members meant that time dedicated to hosting the festival became too difficult.

The phase is characterized by semi-professional and professional filmmaking practices, coupled with a deep insight into game code, play and community. During this phase, embodied performance practices more typically associated with theatrical and artistic endeavors emerged. The increasing sophistication of games, with ever-higher graphics qualities, greater anthropomorphic characterization and 3D depth is evidenced through dialogue and storytelling, game mechanics and background environments. Ironically, many Triple A games publishers brought in machinimators to assist their game development processes, some in an attempt to stem the emergence of the transformative behavior and avoid a music business style breakdown. In turn, the new games became sites of game-inspired co-created expressions, further legitimized by communities of practice that included the original game developers. The resulting sophistication led some to describe game worlds as immersive 'mirror' worlds, where 'prosthetic extension' of self through avatar characters (Klevjer 2006) enabled performance to transcend game platforms and provide stronger tangible links to real world experiences. Notable examples are:

- *RvB* as a comedic science fiction series, previously discussed (see Figure 3). *RvB* continues to have millions of followers and now promotes its own machinima festivals.

- *This Spartan Life* (series, Chris Burke, *Halo*) is a web-based chat show that mixes game and real life events. The series was launched in 2005 and is now distributed on Xbox Live.
- The first overtly political machinima, *The French Democracy* (2005, Alex Chan, made in *The Movies*) reached a global audience with its retelling of the incident that sparked the 2005 Paris riots (see Figure 4). This film led to a major movement in user-generated content for political purposes.
- The first feature length machinima to be awarded at a festival, *Stolen Life* (2007) by Peter Rasmussen and Jackie Turnure. Rasmussen was subsequently recognized for his contribution to ground-breaking filmmaking by Screen Australia with an annual prize for innovation named in his honor.

Second Life was the first mainstream virtual environment that grew into a significant creative platform, although originally ignored by the game-based machinima community. It enabled participants ('residents') to create their own content and host events, resulting in a massive growth in digital performance and artistic embodiment, but also other forms of human activity, such as learning and shopping, where the experience is no longer constrained by rule-based games (Fosk 2011). Thus this phase emphasizes a focus on visualized communication, where embodied experience is both synchronous and asynchronous through characters in game environments, to technology platforms and associated devices. Despite its mass culture popularity, artistic embodiment declined as a consequence of shifts in co-created consumption practices and the increasing dominance of transmedia practices.

Figure 3 Screenshot: *RvB*, Ep 19, *Lost But Not Forgotten* (2013, Rooster Teeth Productions)

Source: This image is reproduced from <http://roosterteeth.com/archive/?id=8313&v=more> under the Fair Use Act for non-commercial, academic purposes only.

Figure 4 Screenshot: *The French Democracy* (2005, Alex Chan)

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Phase 3: Transmedia embodiment (2009-2015)

Concurrent with developments in phase 2, Machinima.com transferred from its originator (Hancock) to new ownership, the DeBevoise brothers, Allen and Philip, in 2006. Hancock cited differences of opinion about the trajectory of the website and a need to focus on his own productions. Since it began, Machinima.com had become an increasingly influential force in the transmediation of content. By 2009, the website had become solely focused on gameplay machinima. Coinciding with the evolution of YouTube, which had launched in 2005, Machinima.com developed YouTube channels that became the dominant search engines for game-related content. Its scale became such that it was recognized as an indicator of the health of YouTube, which had been acquired by Google in 2006. From 2009, Machinima.com launched a range of programming, some in partnership with major games publishers. Its subsequent use of social media platforms such as Facebook, Twitter and emergent channels such as Twitch and Steam, further fueled its massive growth, primarily as a spectatorship platform that comprised professionally produced content.

The website generated audiences by partnering with machinimators who created content and developed their own channels under the umbrella of the Machinima.com brand. This approach was highly successful and by 2011 it had reached 70 million viewers, albeit appealing mainly to young male game players using social media (DVorkin 2011). In 2012, the site was incorporated into Xbox Live, effectively reinforcing the link to games and excluding non-game players. In 2012, Google invested \$35 million in the website, the first such investment in an external 'content production' organization and it was evident that Machinima.com was in a period of rapid transition. By 2013, it reported over 5000 channel partners on YouTube and in excess of 2.3 billion regular viewers. However, its emphasis on monetization of content (e.g., through overlaid advertising) led to criticism for its lack of transparency by its partners. In 2014, further investment funding (\$18 million from Warner Brothers), coincided with a change in management and the subsequent focus was to push its community towards live-streamed gameplay (using 'professional' game players), with content focusing on 'speed runs' and 'epic quests', as an emergent form of game-related content that is referred to as 'e-sports' (e-sports is a term that also originated during phase 1, albeit focused on play that evolved through live tournaments such as QuakeCon). In early 2019 (see e.g., James 2019), having been acquired in 2018 by AT&T along with its parent Warner Brothers, Machinima.com quietly removed all community and partner generated content from its website. This move apparently neither sought consultation nor provided means for creators to archive their originated material. In effect, a whole generation of co-created work seems to have been lost irretrievably without regard for its sociocultural value, and disregarding the interests of games publishers who benefited from community relationships through its existence. That said, there appears to have been little backlash beyond community expressed frustration, no doubt as a consequence of the extent of dissatisfaction the community had with how the site's focus on marketization had evolved beyond Hancock and his collaborators' original vision.

This phase emphasizes the role of players as consumers of content rather than active producers of embodied experience. It is the 'channel hopping' behavior that becomes the focus of embodiment as Machinima.com (rebranded as Machinima in 2014) had appropriated the term but effectively derived a disembodied cultural form where, through a process of monetization and commercialization, the co-created content became an exploited social asset. From a management and marketing perspective, Machinima.com was resoundingly successful in developing

machinima as a medium through which games were promoted to new audiences. The dominance of the channels through which games were experienced drove consumption and co-creation but focused on generating followers *by any means* rather than as a form of embodied experience of game-based storytelling per se. Despite the now almost realistic quality of game content (speed of interaction, graphics and environment sophistication), virtualized ownership and extended identity through game embodiment was less likely to occur. This led to superficial interaction with the original games but a somewhat ironic growth in demand for performing personalities thereby shifting the site of experience from game to channel, leading to the development of virtual-corporeal personalities.

Phase 4: Virtual corpo[reality] (2015>)

The transmedia effects of Phase 3 resulted in a separation of the creative embodiment of game-based assets from the cultural consumption of visual assets. What is interesting in this new phase is that creators approach machinima from any creative or technological background, not purely games (e.g., Delappe's work previously discussed). Moreover, it is unlikely to be tagged explicitly as machinima, which has now become almost indistinguishable from any other animated and CGI work, as predicted by Marino (2004). Despite this, machinima continues to have unique properties linked to its performative aspects that integrate technologies such as motion capture with immersive experiences through virtual reality and encompass various new and emerging classes of sensorial devices, which capture, imitate and replicate human behavioral interaction with virtual entities (facial recognition, artificial intelligence, etc.). These make it possible to actively embody all forms of virtual content in real-time (see for example Linden Lab's *Project Sansar*). This, in turn, results in high quality digital performance and new possibilities for embodiment encompassing both virtual and corporeal components of player-prosumer experience.

At a base level, this phase reflects the origins of machinima in its earliest phase, and for one [increasingly fragmented] community the cultural practice has converged under yet another umbrella term of 'let's play' (Boomer, Harwood and Garry 2018). This term reflects the perfection of screen capture techniques used to create 'walk throughs' or 'speed runs' of games, alongside which its prosumers provide voiceover commentaries that may be only peripherally related to the game. Emerging originally in 2005 (Klepek 2015), let's play is a form of entertainment showcasing aspects of gameplay that others may then try to emulate. The format has become popular with some creators achieving celebrity status, primarily because they post regular content to their

channels, sustaining interest and engagement with the content through varied programming. What is particularly interesting in this phase is that real life personas have fused with anthropomorphized game characters to create celebrity-player personalities (e.g., Figure 5). These are not social objects but augmented and extended personas, co-created with multiple brands (firms), the player-creator and their vast community of followers. For example, PewDiePie (creator) reported almost 80 million channel subscribers and generated over \$18 million in revenue from monetized content (by overlaying advertising) in 2018. In the process, he has become one of the most influential virtual-real personas.

Figure 5 Screenshot: PewDiePie *TubeSimulator*

Source: This image is reproduced from tubefilter.com under the Fair Use Act for non-commercial, academic purposes only.

Ultimately, this phase has legitimized embodied transmediation. As the focus shifts to the player as a virtual-corporeal personality, there is increased emphasis on the audience as community of interest rather than production. Current trends suggest that audiences will eventually, however, migrate to more interactive and performative experiences, as the interest in game play merges with real life, played out in real time, and becomes further embedded into social networks. This practice reflects the real world fused with imaginary and virtual spectra (Baudrillard 1981;

Boellstorff, 2008) – evocative of Plante’s (2016) prediction of a ‘singularity’ – representing a future new mode of intentional agency (see also concepts of heteromation and automatons, in Dholakia and Firat 2019).

A summary of the key observations of the transformations between Phases described is provided in Table 1.

Table 1: Summary of transformations between phases of embodiment in machinima

<i>Characteristic</i>	<i>Phase 1</i>	<i>Phase 2</i>	<i>Phase 3</i>	<i>Phase 4</i>
Brand role	Passive permissive	Active accommodative	Passive advertising (promoting through player)	Active permissive (promoting to player)
Community role	Active spectating (participatory)	Active spectating (participatory)	Passive spectating	Activity led
Machinimator role	Modifying and hacking	Storytelling	Game promoting	Self promoting
Anthropo-morphized visualization	Game-based	Rich (enhanced and enacted)	Branded	Mixed reality
Embodied activity	Coded	Performed	Played	Fused
Communication process	In-game	Storyfied	Marketized	Multi-modal

Source: Authors’ conceptualization

The Phases highlighted illustrate that the processes of embodiment has enabled players to transgress the constrained environment of the computer game (Hsieh and Costa 2001). As Dovey and Kennedy (2006) suggest, it reflects a wider human experience with others in a social world communicated through embodied (avatarial) gesture rather than purely textual or coded narrative. Furthermore, archived and curated content shared across multiple social media platforms such as Facebook et al is searchable, retrievable and replayable through contemporary multimedia

platforms and algorithms. These constitute a computer game-based videographic aesthetic where game worlds, using virtual and augmented technologies, have fused to create hyperrealities (Baudrillard 1981) that may in the future mediate all consumption experiences (Schreier 2017). For example, computer video games will increasingly use facial recognition technologies to customize and personalize player experiences as in-game characters on the one hand but, on the other, it has been suggested there are now over 4,000 'virtual' personalities (virtual YouTubers or VTubers) posting regular content to their millions of followers on social media. These are not game characters per se but are inspired by game and media technologies as illustrated in Phase 4 above, using them for engaging in activities that range from gameplay and commentary to fashion and style consumption, performance and 'live' appearances at gigs and events as well as corresponding with fans often presenting in real time. Thus, play, space and the leakiness of games has allowed a bi-directional flow of persona between the virtual and real.

Conclusion

Currently, computer games and the vast array of technological devices through which gameplay is distributed, imagined, enacted, re-enacted or replayed are increasingly converging with non-game experiences such as social interaction, retailing, politics, and popular culture. These experiences are persistently embodied over time, reflecting growth and change of consumers as co-created beings, influenced and modified as technological advancements and skillsets allow, and reflecting a digital lifespan that transcends multiple platforms. Even though the site of self-making may be restricted to game-based representations, the 'datafication of self' means the game is ever less of a technical constraint to players who engage in social practices across multiple media platforms. Whilst this initially manifested itself in the form of familiar behaviors associated with entertainment, the subsequent fusion of game and corporeal assets highlights tensions between the game, the player and the community of practice that differentially value the virtual experiences. Communication is corporeal and performed at multiple sensory levels, mediated through the convergence of virtual and real resources. Entertainment media have become creative technologies and social networking platforms facilitate a fusion of the material with the virtual (and vice-versa) by making co-presence in game-based environments ever more realistic and possible. Thus, actual and virtual characteristics influence each other at an existential level, legitimized through social construction by the community. There remains, however, a need for greater understanding of the impacts

of corporeal embodiment of game assets in the newly converging market contexts of game and media platforms, particularly in relation to the themes discussed in this paper and the trajectory of future technological advancements.

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