# Introduction

**Games shift familiar experience into new forms, giving the bleak and the bleary side of things sudden luminosity. - Marshall McLuhan, Understanding Media, 1964**

Since video games rose to popularity in the early 1970s, they have been maligned by a media narrative that associates them with violence, addiction and antisocial behaviour. Their popularity with youth, a persistent media emphasis on violent content and a sense that they challenge social norms and values produced a moral panic once reserved for comic books and rock and roll music (Ferguson, 2008; Sternheimer, 2007; Trend, 2007). Condemnations by concerned parents, religious leaders and politicians are a regular feature of North American broadcast news cycles in the wake of school shootings and other instances of youth violence (Ferguson, 2008). Furthermore, video games are commonly considered a "waste of time" with a potentially addictive grip on impressionable young minds that draws them away from study, sports and healthy socialization (Ferguson, 2008; Hellman, Schoenmakers, Nordstrom & van Holst, 2013). These concerns are not groundless, but have disproportionately dominated and shaped public discourse at the expense of a more balanced view that might also consider potential benefits of this emergent and increasingly pervasive medium. In the last decade, however, a series of factors have converged that now cast digital games in a more favorable light. Today, video games are increasingly being leveraged for the purposes of education, health and social good.

Digital and mobile games are quickly becoming the world's most consumed and thus most lucrative cultural industry. Economically, the global video game market is expected to generate over $100 billion dollars by 2017 (Sinclair, 2015), outpacing both film and music and, in the United States, revenue from video games has surpassed film

and music combined (Entertainment Software Association, 2015). The Entertainment Software Association (2015) also reports that game design and research programs are flourishing in colleges and universities, further signaling the industry's growing economic and social relevance. The Internet and digital distribution channels such as Valve's popular Steam service have opened the door for small studios and developers to inexpensively promote and sell their games across the globe without the prohibitive costs of material manufacture and distribution (Broekhuizen, Lampel & Rietveld, 2013). The proliferation of game studies and game design programs combined with affordable production and dissemination costs have resulted in an eruption of experimentation and artistry within the medium, challenging the narrowly formulaic and market-safe approaches traditionally favored by big studios.

As video games exercise an increasingly widespread influence on mainstream global culture they have migrated from the morally suspect margins of society to become the media paradigm of the 21st century (Flanagan & Nissenbaum, 2014). In his *Manifesto for a Ludic Century*, influential game designer and scholar Dr. Eric Zimmerman (2013) suggests that we are at the dawn of the "ludic century", where art, design, entertainment, commerce and education will increasingly become game-like experiences, expanding the reach of games culture to shape all aspects of life. Similarly, media scholar Dr. Henry Jenkins believes that they will be *the* art form of the 21st century (Smithsonian, 2012). If video games are indeed a paradigmatic expression of the digital age, their influence will extend to all

sectors of society, including the work of conflict resolution and peace education.

The deliberate instrumentalization of video games for education and learning is not a novel concept. *The Oregon Trail*, a game designed to teach about early American settler life was in classroom use in the mid 1970s, and students in the 1980s learned about history and geography while playing the popular *Where in the World is Carmen Sandiego* (Young et al, 2012). The impact of these forerunners, however, was mitigated by technological limitations, a skeptical public, budgetary restrictions, and the persistent fact that video games designed for education did not appeal to students in the same way as their commercial counterparts (Sherry, 2015). Today, the eruption in game development, the emergence of the Internet, improved access to technology, and a growing body of research that studies the intersections of digital games and learning (Gee, 2003; Squire, 2011; Granic, Lobel & Engels, 2013) have produced a favorable climate for the use of digital games for teaching, learning and training. Perhaps most importantly, the educational applications of video games may prove a crucial and relevant active learning tool to engage a generation of students reared on interactive and participatory media (Jenkins, Purushotma, Weigel, Clinton & Robison, 2009).

Research on the educational and learning benefits of video games has made significant strides in the past fifteen years. The seminal work of Dr. James Paul Gee outlines thirty-six discrete "learning principles" that can be leveraged from playing commercial video games (Gee, 2003). Granic et al. (2013) review literature that examines the social and educational benefits of video games and conclude that they can provide "immersive and compelling social, cognitive, and emotional experiences" (p. 66). They also write that video games bestow cognitive benefits that are transferable to real-world contexts, operate as sites to apply problem-solving skills and enhance creativity. Despite these perceived benefits, Granic et al. (2013) also caution that

the "motivational, emotional, and social effects of gaming are more complex and harder to disentangle" (p. 70). Despite these advances, research and implementation of digital games for education are still in early stages, and much work remains to better grasp how their potential can be harnessed to produce and asses specific learning outcomes.

This paper will address how digital games may be uniquely suited to further the work of peace education and conflict resolution. There is a scarcity of research that specifically studies how digital games, as dynamic and interreactive learning tools, can be leveraged to support and enhance the closely related fields of peace education or conflict resolution; however, research in a number relevant sectors will be recruited to better understand the topic and expose gaps for further work. After defining basic terms, the first section will briefly discuss the aims of peace education and interactive conflict resolution and how digital games can assist in facilitating intergroup contact and collaboration. The heart of the paper will examine several *serious games* for their potential to cultivate perspective-taking and empathy, explore ethical dilemmas, promote intercultural understanding and encourage a sense of complicity, all crucial components in the work of peace education and conflict resolution. The final section will discuss the importance of context and reflection when implementing digital games and consider whether they can produce long-term, sustainable changes to behaviors and attitudes.

# Terminology: Digital Games, Interreactivity and Serious Games

## Digital Games

In the interest of clarity, the term *digital game(s)* will be used as a catchall that includes both *video games* (games played on dedicated game consoles) and *computer games* (games played on computers), as many of the games described

are available for either platform. Occasionally and when relevant, *computer simulation(s)* will be added to highlight that many digital games share characteristics with digital simulations.

## Inter(re)activity

One way that digital games are frequently distinguished from traditional media is that they can shift users and audiences from passive spectators to active participants who interact with and shape the content. However, this distinction may not be so clear-cut. Rousse (as cited in Smethursts & Craps, 2015), for example, points out that books, films, and other traditional media can also be thought of as interactive because they constitute interpretative and constructive acts between creators and audiences. Accordingly, Smethursts and Craps (2015) propose the term *interreactive* in place of *interactive* because in digital games, unlike traditional media, players can effect change to the game world and alter aspects of the game's space, narrative and outcome. I*nterreactivity* better expresses the common feedback loop where players not only effect a change in the game, but the game, in turn, effects a change in the player (p. 273). Thence, *interreactive* and its derivatives will be used in lieu of interactive to more precisely captures the dynamic relationship between player and game.

## Defining Serious Games

The use of digital games for education, training, and learning broadly fall into categories: the use of commercial off-the-shelf (COTS) games or digital games developed with education and learning in mind (Kafai & Burke, 2015; Klopfer, Osterweil, & Salen, 2009). This paper will subsume both categories under the broad canopy of *serious games*, or digital games that seek to address important societal issues rather than merely entertain (Sanford, Starr, Merkel, & Bonsor Kurki, 2015). Although Girard et al. (2012) distinguish serious games from entertainment-oriented digital games due to their having being

designed for "training, education, knowledge acquisition, skill development, etc." (p. 208), there is substantial support for the idea that commercially produced games employed for goals beyond entertainment can also be classified as serious games (Marsh 2011; Susi, Johannesson, & Backlund, 2007). Furthermore, as the industry has grown in scope and sophistication, there are now video games that almost indistinguishably fuse both modes, such as Ubisoft's *Valiant Hearts: The Great War* about World War I and iNK Stories' *Revolution 1979: Black Friday* set during the Iranian revolution.

For the most part, serious games are produced by small, independent studios and/or universities and are generally designed to act as catalysts for creating awareness and positive social change. Some notable examples include *Darfur is Dying*, where players walk in the shoes of a Sudanese villager living through a humanitarian crisis; *Papers Please* confronts the ethical predicaments of a Soviet era customs officer; *This War of Mine* deals with civilians surviving in a war zone; *Czechoslovakia 38-89: Assassination* examines the lives of a handful of victims of the Nazi occupation during World War II; *Hush* tackles a Tutsi mother hiding from a Hutu patrol during the Rwandan genocide; *Fight for Freedom* puts the player in the role of an American slave, and *The Dragon, Cancer* is based on the designers' true story about losing their young son to terminal cancer. Iten and Petko (2016) contend that serious games are situated, enjoyable, active, social, encourage problem solving, and afford "rapid and differentiated feedback" (p. 151).

The term "game" itself is an elusive and contested term that resists a stable definition (Juul, 2005; Zimmerman, 2004). This problematizes a conclusive definition of *serious game*, a term that is also variably defined. Marsh (2011), however, provides an inclusive definition that suits the purposes of this paper:

Digital games, simulations, virtual environments and mixed reality/media that provide

opportunities to engage in activities through responsive narrative/story, gameplay or encounters to inform, influence, for well-being, and/or experience to convey meaning. The quality or success of serious games is characterized by the degree to which purpose has been fulfilled. Serious games are identified along a continuum from games for purpose on one end, through to experiential environments with minimal or no gaming characteristics for experience at the other end. (p. 63)

Marsh's (2011) inclusion of simulations in his definition is especially relevant when thinking about serious games and their relationship to peace education. Traditionally, training and education in the area of conflict resolution has used live simulations and role-play (Hatipoglu, Müftüler-Baç & Murphy, 2014) and the distinction between digital games and simulations can become quite blurred. For example, Cuhadar and Kampf (2014) use the terms interchangeably when they examine how *Peacemaker*, a serious game about the Israeli and Palestinian conflict, can be used to produce knowledge and encourage perspective-taking. Moreover, Marsh's (2011) broad definition frees serious games from a more narrow consideration that might exclude their use in public exhibits and virtual reality, two categories that import value to the work of peace education.

## Social Contact: ICR, PE and Collaboration in Virtual Spaces

### Interactive Conflict Resolution and Peace Education

Kampf and Cuhadar (2015) suggest that interactive conflict resolution (ICR) and peace education (PE), strategies that are commonly used to negotiate intergroup conflict, might be productively applied within a serious game context. These methods, and particularly ICR, are based on the *social contact hypothesis*, or the belief that aggression and conflict is aggravated

in situations of limited contact between hostile groups (Kampf & Cuhadar, 2015). Prolonged lack of exposure between antagonistic groups can produce disproportionately negative attitudes that can dehumanize the outgroup and perpetuate bias and prejudice. Inversely, inter-group contact can temper perceived differences and emphasize commonalities in the hope of reducing "prejudice and negative stereotyping, promoting inter-group empathy and understanding, building trust, and creating awareness about the root causes of conflict and about non-violence" (Kampf & Cuhadar, 2015, p. 542). The success of this work is achieved by gaining knowledge of the other and reflecting on one's own complicity and contributions to the conflict (Petrigrew & Tropp, 2006). This will ideally foster individual changes in attitude that will reduce aggressions and pave the road to a peaceful resolution. The social contact hypothesis has been critiqued (see, for example, Cuhadar & Dayton, 2011 for a fairly comprehensive review), but these indictments tend to focus on the structures and procedures of inter-group contact, rather than criticize the premise of establishing productive communication, face to face or otherwise, between the hostile parties.

### Digital Simulations and Situated Learning

Traditionally, ICR and PE have been carried out by means of workshops, live role-play and face-to-face simulations (Hatipoglu, Müftüler-Baç & Murphy, 2014). However, these methods have been critiqued for their lack of real-world complexity (Kersten, Koszegi, & Vetschera, 2003) and because the skills practiced do not cleanly transfer to real-world situations (Movius, 2008). Cuhadar and Kampf (2014) believe that interactive technology, particularly digital games and simulations, can help remedy some of these shortcomings because they can "artificially create more complex and structured simulation settings which can help overcome the artificial, randomness, and out-of-context characteristics of traditional role-

play and simulations" (p. 513). Digital games can be immersive and interactive contexts that approximate real-world settings and respond to player actions at a speed and scope that is not duplicable in a live immersion. Furthermore, all actions carried out in the game leave quantifiable digital footprints. This rich data can be analyzed to identify patterns of behavior, as well as provide granular assessment and feedback (Bellotti, Kapralos, Lee, Moreno-Ger & Berta, 2013).

The dynamic virtual environments in digital games and simulation are central to their educational value because they enable what Gee (2003) terms *situated understanding* or *situated learning*. Rather than absorbing skills and knowledge through the abstractions of texts or lectures, situated learning is underpinned by the theory of situated cognition, "which suggests that learning is tied to the authentic activity, context, and culture within which knowledge is developed and used" (Brown, Collins, & Duguid, 1989 in Turkay, Hoffman, Kinzer, Chantes, & Vicari, 2014, p. 5). The brain, then, learns better by actively "doing" in a meaningful setting and, as will be argued in this paper, this can have important implications to the work of peace education because a situated understanding of culture and context can potentially lead to more knowledgeable mediation and improved mutual understanding between adversarial groups.

Many current digital games are social and include multiplayer features that allow players to compete, cooperate and interact in a shared virtual environment. Adachi, Hodson and Hoffarth (2015), Granic et al., (2013) and Greitemeyer (2013) found that intergroup collaboration in multiplayer video games, whether violent or not, reduces prejudice and bias and increases empathy towards the outgroups. They conclude that video games can be leveraged to create cooperative scenarios that bring opposing groups together. However, more research must be conducted to determine if "the effect on bias reduction may be smaller among groups characterized by more extreme conflict, compared to groups with less

hostile relations" (Adachi et al., 2015, p. 233). The authors also caution that further longitudinal studies must be conducted to determine if the beneficial effects of cooperation within the game will have lasting results in the real world. Another advantage of multiplayer games is that animosity between adversarial parties can precipitate a reluctance to initiate face-to-face contact; however, multiplayer game environments are a cost-effective way to mediate contact in shared virtual spaces, precluding the need for spatial and geography proximity (Adachi et al., 2015). Virtual peace education (VPE), which will be discussed later in the paper, advances the idea that, in cases of active conflict, virtual and online encounters may be the only feasible avenue to create points of contact between hostile parties.

## Perspective-Taking and Empathy in Digital Games

Empathy is defined as "the ability to understand and share in another's emotional state or context" (Cohen & Strayer, 1996, p. 988) and is central aim in the work of conflict resolution and a vital outcome of the peace education process (Kampf & Cuhadar, 2015). Research in neuroscience has determined that empathy can "increase social understanding, lessen social conflict, limit aggression, increase compassion and caring, lessen prejudice, increase emotional competence, and motivate pro-social behavior" (Feshbach & Feshbach, 2009 in Kidd, 2015). These qualities are clearly beneficial for reducing intergroup conflict, but can they be fostered through digital games and computer simulations? Moreover, can empathy that is produced from playing a digital game lead to sustained and meaningful changes in behavior and attitude that are transferable to the real world?

To answer these questions, we will examine how perspective-taking occurs in digital games, which Cuhadar & Kampf (2014) suggest "is one of the most important outcomes in conflict resolution and a prerequisite for developing empathy" (p. 515).

## Perspectives and Perspective-Taking in Digital Games

Perspective-taking is the active consideration of an outgroup member's mental state, points of view, and motivation. Todd & Galinsky (2014) reviewed empirical research and found that perspective-taking helped negotiate social complexities, diminish biases, improve intergroup attitudes, and encourage a view of outgroups as more "self-like" and a view of the self as more "outgroup-like". Cohen (2001) claims that by "introducing other perspectives and persuading others to identify with them, new possibilities for understanding are opened that may result in attitude change" (p. 260). The potential to positively impact attitudes with digital games is not only rooted in their ability to grant perspective, but also in their potency as instruments of persuasion. Bogost (2007) identifies *procedural rhetoric* as "the art of persuasion through rule-based representations and interactions, rather than the spoken word, writing, images, or moving pictures" (p. ix). A well-intentioned and effective game design can combine perspective-taking opportunities with procedural rhetoric to effect positive and beneficial changes in attitude.

However, perspective-taking does not always necessarily produce favorable results. For example, it has been found to be deleterious if enacted by someone who suffers from low self-esteem or identifies too strongly with their ingroup. Perspective-taking can also lead to negative outcomes in highly competitive contexts, or under the circumstances of a prolonged or intractable conflict (Todd & Galinsky, 2014). It bears adding that many of the relevant studies were conducted with small groups and tended to look at interpersonal social issues, rather than international, cultural or religious conflicts. Furthermore, none of the work reviewed looked at how perspective-taking operates in digital games, computer simulations or virtual environments. This is a crucial consideration because digital games can grant players the agency to guide the actions and decisions of an in-game avatar in a responsive environment, which may deepen identification and enhance the effects of perspective-taking (Klimmt et al., 2009).

Video games encompass a varied and complex ecology of interactive virtual worlds that can range from simple 2D puzzlers to highly immersive digital environments. Depending on the game, players can control and interface with objects, characters and environments and adopt diverse perspectives. The first-person perspective, for one, tends to dominate the aptly named first-person shooter (FPS) genre, that includes blockbusters franchises like *Call of Duty* and *Bioshock*, while action genres like *Assassin's Creed*, MMOs (Massive Multiplayer Online) like *World of Warcraft* and 2D platformers like the classic *Donkey Kong* and *Braid* are played from a third-person perspective, where the in-game avatar is wholly visible to the player. The second-person perspective, which addresses the player directly, is rare and most typically used by interactive fiction and text-based games like *Depression Quest*, a game that puts the player in the role of a person suffering from depression and anxiety. Strategy games like *Civilization* and *Age of Empires* employ what can be called an omniscient or "God-like" point of view, similar to that of a board game. Additionally, some games like *Skyrim*, an open-world sword and sorcery role-playing game, and *Minecraft*, a world building game, let players switch between first-person and third-person, while *This War of Mine* and *Mass Effect* allow for the control of multiple characters at once.

Each of these perspectives will have a different impact on how a player identifies with their in-game personas and variably shape player attitudes, and affective and cognitive responses. For example, the first-person perspective creates a close identification between the player and their in-game avatar. The player does not see their own face anymore than one would in real life, as they are embedded in their character's visual and auditory perspective, a fusion that is

effective for drawing one into the game world. This convention is a powerful immersion strategy, but if the game seeks to create identification with a victim or outgroup member represented by the avatar the player controls, it may not afford the critical distance to think about one's in-game persona in a meaningful way. Newman (as cited in Smethursts & Craps, 2014) suggests that when a game is at its most immersive and interreactive, and the feedback loop is most complete, players can lose sight of their in-game identity and the possibility for empathy with the avatar is diminished or lost. Likewise, Cohen (2001) suggests that, "identification is likely to increase enjoyment, involvement, and intense emotional responses, but it is less likely to produce critical stances" (p. 260). An over-identification between player and avatar may "collapse" the two identities and attenuate the critical distance necessary to contemplate the "nonequivalent singularity" of the other (Simon, 2014).

When most engaged by the game, the player's affective focus tends to shift from their in-game persona to their contextual game environment (Smethursts & Craps, 2015). For example, *Homefront* is a game that creates sympathy for the plight of the victims of war but, for commercial and functional reasons, it was designed in the style of a first person shooter. Recognizing that the player would have "no mirror to see how the character's actions would be received socially" (Flanagan & Nissenbaum, 2014, p. 102), the designers created three companions (or visible "others"), whose emotional reactions to their difficult circumstance elicited empathy for their suffering as collateral victims of war. This suggests that an avatar represented in the first person would not invite a strong empathetic response, underscoring the importance of pursuing further research to determine the nuances of how players are emotionally and cognitively affected by their in-game perspectives. Work in this area would allow for digital games to be more precisely leveraged to foster empathy

and better understand of outgroups in a bid to reduce intergroup tensions and conflicts.

## Cognitive and Affective Empathy in Digital Games

One reason that playing digital games can be so absorbing is that they can elicit a wide range of powerful emotional and affective responses, including empathy (Bachen et al, 2012; Belman & Flanagan, 2009; Flanagan & Nissenbaum, 2014; Greitemeyer, 2013; Kidd, 2013). Empathy is also "emphasized as the most critical element by many scholars in the conflict resolution literature" (Kampf & Cuhadar, 2015, p. 542). Generally, empathy is thought to integrate both cognitive and affective (emotional) elements, and "perspective-taking can increase intergroup positivity through both forms of empathic responding" (Todd & Galinsky, 2014, p. 79). Belman and Flanagan (2009) suggest that games would profit from combining both modes to effect a lasting and productive change in the player, and Happ, Melzer and Steffgen (2014) write that, "either component on its own does not fully describe empathy, as affect and cognition are typically linked in empathy" (p. 81). Although the two modes typically work best in conjunction, the examples that follow will look at their functions in digital games separately to better understand their individual operations. Cognitive empathy will be explored with *PeaceMaker*, a government simulation game about the Palestinian/Israeli conflict, and the production of emotional empathy will be explored in *Hush*, a game that takes place during the Rwandan genocide.

### PeaceMaker: cognitive empathy and the two-state solution.

Cognitive empathy requires active thought about the motivation and circumstance of the other. It is the intellectual process of assessing the motivations, beliefs, cultural norms, and mindset of the other and is closely tied to perspective-taking. Examples of cognitive empathy might

include a teacher thinking about what causes a student to act out in class, or two diplomats who familiarize themselves with each other's motives and goals before undertaking a delicate negotiation. Belman and Flanagan (2009) look at *PeaceMaker* to illustrate how cognitive empathy operates in a digital game. This game is about the Israeli and Palestinian conflict and is supported as an educational tool by both the United States Institute for Peace and the Peres Center for Peace in Israel. In *PeaceMaker*, players assume the role of either the Israeli Prime Minister or the Palestinian President and endeavor to achieve a tenable two-state solution to resolve the persistent conflict between these two groups. Cognitive empathy is exercised in the game because, regardless of what side is chosen, players must think about the needs of their own stakeholders and constituents as well as their opponent's mindset and circumstances. Belman and Flanagan (2009) suggest that it is most valuable to assume the role with which the player does not identify and/or support in order to gain a broader view of the conflict. As a virtual site that enables context-specific political decisions and negotiations, *PeaceMaker* differentiates itself from live ICR simulations in that it easily allows players to experiment with multiple perspectives in an immersive environment where actions and decisions precipitate tangible and immediate consequences. The game also incorporates authentic newsreels and photos depicting emotionally difficult scenes that provide an affective counterweight to the intellectual management of the conflict at the military and political level.

Cuhadar & Kampf (2014) also used *PeaceMaker* in one of the few existing studies that directly examines how a video game can assist in the work of peace education. The study involved 147 undergraduates in political science and conflict resolution classes: 38 Turkish students and 39 American students represented the "third party" views, while the perspective of those "directly affected" was assumed by 50 Israeli-Jewish and 20 Israeli-Palestinian student participants.

Each demographic group was composed of more or less similar male and female ratios of approximately 55% to 45% respectively. After being introduced to the game, participants filled out a questionnaire measuring knowledge, political attitude and level of interest in the conflict. The pre-survey also included questions to ascertain demographics and weekly video game play. All participants played as both Israel and Palestine and kept notes on all their major decision. Gameplay was followed by a post-survey that was almost identical to the pre-survey.

Promisingly, the researchers found that all participants who played the game demonstrated significant increases in knowledge pertaining to the Israeli-Palestinian conflict. Perspective-taking in the game also led to notable changes in attitude about the conflict by third-party participants (American and Turkish students) but, conversely, had almost no effect on the attitudes of Israeli and Palestinian participants who were direct parties to the conflict. Kampf and Cuhadar, (2015) conclude that when "attitudes are linked to self-defining values and reference groups, which is often the case in intractable conflicts, they are very much resistant to change" (p. 543). This is consistent with other studies on perspective-taking that found limited success with participants who identified strongly with their ingroup (Todd & Galinsky, 2014). These results, however, are contingent on a specific game, length of exposure, and other contextual factors. Had the game, for example, involved the use of realistic third-person avatars, as opposed to a largely omniscient and disembodied point-of-view, there may have been deeper investment in the perspective. Nevertheless, the effect on third-party participants is a promising finding because it tangibly demonstrates that a game-based intervention enlisting cognitive empathy can produce a measurable change in attitude. As research, technology, and design improve in time these benefits may eventually have a positive impact on the chief stakeholders in the conflict.

## *Hush*: terror, truthfulness and emotional empathy.

Emotional empathy is an immediate and visceral response to the feelings of others, and is subcategorized into *parallel empathy* and *reactive empathy* (Belman & Flanagan, 2009, p. 6). Parallel empathy is "roughly equivalent to the lay understanding of empathy as the vicarious experience of another's emotional state" (p. 7), and reactive empathy is an emotional response which is at variance to what the other is experiencing, such as feeling guilt for someone else's loss or pain. *Hush* is set during the Rwandan genocide and provides a good example of how a game can provokes both parallel and reactive empathy. In *Hush*, a Rwandan Tutsi mother named Liliane hides in an abandoned house with her baby as armed Hutu troops patrol nearby. The object of the game is simple: to sing a quiet lullaby to prevent the baby from crying and attracting the unwanted attention of the nearby patrol. To "sing" the lullaby, players type keys that correspond to a rhythm of materializing letters, but if they fall out of synch with the letters, the baby's cries grow louder. Too many mistimed letters cause the mother and child to be discovered and an unsettling red screen marks the end of the game and, presumably, their murder at the hands of the patrol. If the player successful manages to keep up with the rhythm of the letters and pacify the baby, the patrol passes and the mother and child flee to safety.

Visually, the game is rendered in a simplistic but disturbing abstract style of dim lights, shadowy figures and gloomy landscapes. The disconcerting audio includes angry soldiers barking orders, unseen victims pleading and screaming, and startling bursts of machine gun fire and machetes slicing flesh. The terrifying soundscape and nightmarish art unsettle players as they try to perform the otherwise simple task of keeping synch with the lullaby. The stress, tension and anxiety the player feels are, to some degree, analogous to that of the

mother's, thus provoking parallel empathy. The crying baby, however, elicits reactive empathy, as the player's concern for its life and safety are likely at variance with the reasons for the child's unhappiness (cold, hunger, discomfort, etc.). The game's designers explain that, "the player isn't viewing this horrific event from a distance and attempting to 'solve the problem.' They're in the middle of it, experiencing the terror of the Hutu raid" (Flanagan & Nissenbaum, 2014, p. 146). They add that, "it's a tense and anxiety-producing experience, but hopefully players come away with new empathy for the victims and survivors of the Rwandan genocide" (Flanagan and Nissenbaum, 2014, p. 147).

There is little doubt that the game provokes anxiety, tension and, to some degree, fear, but this clearly cannot parallel the experience of the real life victim. The player is not really "in the middle of it", as the designers suggest, but merely reacting to a low-stakes representation of a horrific and traumatic event. Keyboarding is not the same as being a petrified mother stumbling through a lullaby to save her child and herself. Is five minutes of gameplay enough to create even a tenuous analogy to the complex and drawn-out emotional experience it hopes to communicate? It is important to address the variances between reality and representation, as they can be generalized to many, if not all uses of digital games as virtual experiential spaces. Flanagan and Nissenbaum (2014) take up some of these concerns when they observe that "a game can provide players with only an extremely limited experience of a situation this dire, but *Hush* creates an empathetic bond between player and playable character" (p. 44). Despite the game's limitations, it does produce a genuine and meaningful affective connection between the player and the representation of the victim. *Hush* personalizes trauma in a way that Hirsch and Spitzer (2009) term "narrative truth" or "truthfulness" which "can tell more about the *meaning* of an event…than about the event itself" (p. 162). A mother hiding with her child is recurrent in war zones and sites of armed conflict;

it does not have to be historically located or specific to evoke empathy, create awareness and spur curiosity to learn more. In the right context, *Hush* can be pedagogically instrumentalized to encourage players to think, feel and care about the Rwandan genocide, but it also universalizes the plight of victims and survivors in all zones of conflict.

Like *Hush*, *This War of Mine* focuses on civilian victims in a warzone, but it also incorporates some elements of the decision-making opportunities offered by *PeaceMaker*. It combines both cognitive and affective empathy as players must negotiate difficult ethical dilemmas in order to survive in the wreckage of war.

## This War of Mine: Ethical Dilemmas and Quiet Moments in the Warzone

In *This War of Mine* players manage a group of civilians who struggle to survive in a war torn city inspired by the 1992 – 1996 Siege of Sarajevo during the Bosnian War. Food and medical supplies are scarce, and the survivor must scavenge by night to avoid daytime sniper fire. *This War of Mine* is an antidote to mainstream digital games that glorify war and conflict as it shifts the more common perspective of the combatant to that of the civilian. Players are immersed in the war-torn world and forced to make uncomfortable moral decisions in order to survive, gameplay conditions that can produce both cognitive and affective empathy.

Whether robbing an elderly couple, or denying limited supplies to other survivors, players are regularly confronted with sticky ethical dilemmas. Toma (2015) speaks to the game's capacity to rouse empathy in an evocative and instructive way when she states that *This War of Mine* is a "saddening and profound experience of war, famine, murder, suicide and failure, bringing the player closer to its victims, which are similar to them, thus having the potential for becoming a counter pedagogy of war" (p. 216).

Players can intellectualize the conditions of the victims and understand the difficult decisions they have to make (cognitive empathy), but also parallel their characters' guilt and remorse for having to make those decisions (emotional empathy). Occasionally, an in-game character will suffer from depression because of their circumstances and choices, rendering them temporarily unplayable. The frustration a player feels from losing a depressed character who might be put to productive work is an example of reactive empathy. In an interesting twist on reactive empathy, Evan Narcisse's review of the game describes how he empathized with his own lack of empathy: "I was aghast at how quickly my empathy eroded in a video game, which made me more cognizant of its fragility in real life" (Narcisse, 2013 as cited in Toma, 2015, p. 218).

Smethurst and Craps (2015) write that "games work with the concept of psychological trauma in ways that are unprecedented in other media" (p. 172) because they offer alternative, and perhaps even more fruitful means of representing personal and social histories of suffering and injustice. Flanagan and Nissenbaum (2014) also see digital games as potent sites for moral deliberation through player agency because "games reach deep parts of the human psyche [and]...not only reflect and express, but also activate these beliefs and values in powerful ways" (p. 3). Toma (2015) cites a poignant excerpt from an online post that underscores the unique power digital games have to provoke empathy, elicit emotion, and disseminate awareness:

And that is what *This War of Mine* does most effectively. It shows you the cost of war – body, mind, and soul. I've read plenty of great anti-war novels, seen plenty of great anti-war films. *This War of Mine* joins *Spec Ops: The Line* in a growing, prestigious genre of anti-war games. It speaks for the most silent, unrepresented victims of war unflinchingly, sincerely. It reveals the cost of war; not with the over-the-top set pieces and faceless macho protagonists, but with quiet moments."(Spirit, 18 November 2014 as cited in Toma, 2015, p. 220)

*This War of Mine's* "quiet moments", as Spirit puts it, may be a key to how digital games can produce meaningful and, perhaps, even transformational instances of empathy. Cognitive and emotional empathy do not typically occur at the heights of interreactive play, but rather when "a player is not actually capable of influencing the game state: unskippable scripted or prerecorded cutscenes, for instance, or loading screens" (Smethurst and Craps, 2014, p. 273). These moments of relative inactivity open a space where players might reflect on their actions and experience.

Digital gameplay oscillates across a spectrum of active and passive engagement. When involved in highly immersive, interreactive gaming, a player may not feel empathy in that moment, but they are steadily reminded of the consequences of their actions. In other words, "by putting their hands on the controller and becoming part of the player/game feedback loop—players become complicit with the events portrayed therein" (Smethurst & Craps, 2015, p. 277). Toma (2015) highlights this process when reflecting on her experience playing *This War of Mine*:

The game oriented us […] toward considering how we felt about our actions, how these actions affected us as persons, for the results of our decisions in the game and their effect on the characters may not be anticipated. The game has thus a strong moral component […] by playing it we learned that we must take responsibility for our actions, regardless of what the future brings […] Difficult decisions encourage self-reflection." (p. 215)

Unlike other media, player choices in digital games can precipitate palpable reactions and emotionally compelling outcomes: arriving too late with the medication leads to the death of a family member; or in *Fight for Freedom* an American slave's choice to sabotage their master may lead to the beating or death of a falsely accused fellow slave. Game worlds respond to players and hold them accountable for their actions, but they are also forgiving. If a choice

leads to an undesirable result, most games let players reset and try again to modify their strategy and explore alternate courses of action. Moreover, digital games are safe rehearsal sites as consequences tend to be low-stakes because they occur in a virtual dimension; however, the lessons can transfer to the real world. Zagal (2009), for example, found that players who negotiate moral and ethical dilemmas in games like *This War of Mine* can feel personally invested in their choices. He states that digital games can be "perfect-test bed[s]" (p. 8) to teach and learn about ethical reasoning (Zagal, 2009). Moreover, Harris (2009) postulates "ethical awareness" is an important addition to peace education programs (p. 8).

*This War of Mine* is inspired by the Siege of Sarajevo but set in the fictional city of Pogoren and, thus, is largely decontextualized of culture and history. On the other hand, *1979 Revolution: Black Friday* is a distinctive example of how a digital game can explore the complex and ambiguous ethical dilemmas faced by individuals in a historically and culturally accurate zone of conflict.

## Digital Game as Documentary: Intercultural Understanding in 1979 Revolution: Black Friday

*1979 Revolution: Black Friday* is an adventure interactive drama set during the Iranian Revolution. It follows a young Iranian photojournalist named Reza Shirazi as he negotiates and documents the complex political and emotional landscape of his country in turmoil. The game was released at the time of writing, but bears inclusion because its cultural and historical fidelity classify it as a digital game and a documentary, a status that imports a unique value to a discussion of how digital games can benefit peace education and conflict resolution.

Unlike *PeaceMaker*, the perspective in *Black Friday* is not from the vantage of a pivotal and

omniscient political figure whose decisions alter the course of history. Instead, *Black Friday* personalizes the experience and connects the player directly to the ground-level activities of an aspiring photojournalist and his family as they are torn asunder by the violent ideological conflicts of the revolution. Throughout the game, players are confronted with morally ambiguous dilemmas and pressed to make choices through dialogue and action. The options are never black and white, and the player is often put into positions that Navid Khonsari, the game's developer, describes as having to "choose randomly between two horrible decisions, which reflects the reality reported by those who lived through the revolution" (N. Khonsari, personal communication, July 8, 2016). The choices Reza makes affect his political alignments and interpersonal relationships, but the historical outcome remains unchanged. Choices in *Black Friday* subvert right/wrong or good/evil binaries, and instead evoke the moral, ideological, and political ambiguities and complexities experienced by the Iranian people during the revolution.

*Black Friday* strives for historical and cultural accuracy and shares characteristics with the vérité mode in documentary film and can thus be classified as a "vérité game", a term coined by the game's developers. Iranian-born Khonsari and his team invested the game with authentic artifacts and documents from the revolution, including films, photos, and recorded speeches from the Ayatollah Khomeini. Preliminary research on the conflict included accessing a wide range of relevant documentation, interviews with scholars and advisors, and recording conversations with forty Iranians who experienced the revolution first-hand, many of whose stories were woven into the game's narrative (N. Khonsari, personal communication, July 8, 2016). The game references real locations such as the nefarious Evin political prison where Reza is interrogated, and the Cinema Rex that was deliberately set on fire, tragically killing the 470 people trapped inside. Finally, local culture is experienced from

the perspective of an Iranian, introducing players to Persian tea protocols, the delights of street bread, and a smattering of Farsi. Additional information and media are available through unobtrusive in-game menus for those who want to learn more about Iran, Persian culture and the revolution.

According to Harris (2009), the development of intercultural understanding is a pillar of the peace education process, as it "promotes respect for different cultures and helps students appreciate the diversity of the human community" (p. 81). *Black Friday* fosters intercultural understanding by immersing players in Tehran at a critical juncture in Iranian culture and history, which aligns with Khonsari's intention to "use this extremely powerful tool to create a better understanding of what is going on around the world and reconcile multiple perspectives" (N. Khonsari, personal communication, July 8, 2016). This also contributes to the work of conflict resolution, as Gonzalez, Saner and Esenberg (2012) found that better information and knowledge about a conflict and/or an outgroup gained through gameplay helps mitigate the influence of political and religious affiliations on peace process strategies. Finally, *Black Friday's* unique cultural and historical affordances might be studied to determine if the game can be used to support the production of historical empathy (Schrier, 2015), global empathy (Bachen et al., 2012; Zappile, Beers, & Raymond, 2016), and ethnocultural empathy (Wang, et al., 2003), all which contribute to the acquisition and development of intercultural understanding.

Documentary film has been used as a tool to promote intercultural awareness and help diffuse intergroup tensions. Avni (2006), for example, discusses the use of documentary film to cultivate grass-roots intercultural understanding between Israelis and Palestinians. Connecting viewers "to the characters featured on a visceral, visual, and emotional level" (p. 281) would ideally help produce empathy, awareness and mutual understanding. Cerasani (2015) found

that her use of a documentary film with students occasioned perspective-taking, increased empathy, challenged preconceived notions and humanized the subjects of the film by showing the difficult choices with which they were confronted. Yet, the author notes that one cannot engage directly with the subject by merely viewing the film and found that adding "interactive role-play dynamics…fostered an atmosphere full of unpredictability and surprise, which not only mirrored reality, but also opened up space for new possibilities, including empathy" (p. 162). This final observation validates a digital game like *Black Friday*, which merges the documentary format with the immersive and interactive qualities of a digital game, granting players agency and the ability to engage directly with the subject.

*1979 Revolution: Black Friday* illustrates how the pervasiveness of digital game culture has expanded to productively merge with preexisting forms such as documentary film. *Matari 69200* is a final, striking example of the reach and potential of digital games as cultural and social artifacts. It is a self-reflexive work of art that employs a video game system as a medium to collapse form and content, paradoxically exemplifying the potency of the medium through its power to critique itself in the service of social justice and conflict resolution.

## Matari 69200: Spectatorship, Complicity and Mediation in a Video Game Installation

The cases examined thus far show how in-game virtual spaces can be leveraged to produce empathy, teach and learn about peace, and negotiate conflict. However, digital games are cultural artifacts that can be modified, repurposed and extended beyond their virtual precincts. Increasingly, they are being used to invigorate museum exhibits with interactive dimensions (Kidd, 2015), but are also occupying curatorial spaces as works of art in their own right (Smithsonian Institute, 2012; Pederson, 2010).

These out-of-game contexts and traditional curatorial spaces can work in concert with digital games to provoke reflections on complicity, intercultural understanding, and empathy, as illustrated by *Matari 69200*, an interactive art installation by Peruvian artist Rolando Sánchez. *Matari 69200* demonstrates how a digital game system can become an artistic medium that transcends its intended purpose as entertainment to address social injustice. Sánchez expresses his message by leveraging the interreactive nature of digital games and their oscillations between passive and active engagement, a dynamic that is "particularly suited to exploring issues of guilt and complicity" (Smethursts & Craps, 2015 p. 277). This corresponds to Simon's (2014) view that curatorial projects dealing with the subject of injustice and suffering should occasion the possibility to reflect on one's own complicity "in sustaining relations of violence and oppression" (p. 210).

*Matari* is a portmanteau blending the Spanish word for death (*matar*) and "Atari", a pioneer video game company. It was created to commemorate the 20-year conflict between the Shining Path Maoist paramilitary forces and the Peruvian military, the number "69200" referring to the fatalities suffered during the war. For the piece, Sánchez reprogrammed five game cartridges for an Atari 2600, the most popular video game console in Peru during the time of the war. The interchangeable games depict four famously televised violent events from the conflict, and the fifth cartridge is a commentary on how the events were represented at the time. Two of the games align visitors with the state-sponsored military, as they play a prison guard who partakes in the execution of 224 prisoners suspected of terrorism, and a soldier who massacres dozens of villagers. Two other games take the perspective of the Shining Path, where they massacre villagers in one and bomb transmission towers in the other. The fifth cartridge brings both sides together in a Pac-Man style game where green military "Pac-Men" alternately chase and elude red Maoists guerrilla "ghosts".

The installation is set-up with the Atari 2600 video game console and joysticks, a television screen and a few chairs, reminiscent of a family room. Visitors are invited to sit down, insert a cartridge and, depending on the game, play as guerrillas or the military, both of whom staged events for the mass media "designed to intimidate and demoralize" (Pederson, 2010, p. 10). Playing both sides of the conflict incentivizes the realization that there are no "good guys" and "bad guys", but two forces vying for power and that the true victims – the innocent villagers and *campesinos* caught in the crossfire – are without agency and only statistically represented as "scores". The project highlights how screens can mediate the realities of war and censures the privileged television audiences for their passive complicity in the death of innocents. The same family room television screens that broadcast images of the conflict were also used to play *Pac-Man* and *Space Invaders*, thus "conflate[ing] these two experiences" (Daniel Langlois Foundation, 2005). Sánchez explains that, "while parts of Peru suffered the inclemencies of war, for others war was only an experience they partook through watching TV; their position in relation to the war was similar to one of a child playing video games" (Pederson, 2010, p. 9). Visitors who interact with *Matari* have occasion to reflect on their passive spectatorial role as television audiences viewing a mediated war, a position illuminated by their active engagement with the video game, another form of mediation. The paradoxical and self-critiquing use of the video game produces a series of tensions between distance and proximity, material and immaterial, triviality and edification, absence and presence, self and other, active and passive, and public and private. These tensions resist resolution, and thus open a space for thought, empathy and, by virtue of the work's interreactivity, complicity. When faced with representations of difficult knowledge about war, injustice, and all forms of human suffering, Simon (2014) believes that the sense of complicity is an antidote to passive spectatorship and a foundation for an individual's meaningful, thoughtful and potentially transformative reflection about life in the present as informed by a mutable past.

With *Matari 69200*, the digital game paradigm becomes both the object of critique and the redemptive medium by which the critique is expressed. The game system's artistic reconfiguration to transmit a potent statement about conflict and complicity is a testament to the diverse roles digital games can occupy in contemporary culture. The meaning of *Matari 69200* relies on its curatorial mise-en-scène, which accentuates the importance of context when digital games and game systems are deployed for purposes beyond mere entertainment.

## Optimizing Outcomes through Design, Context and Reflection

Context plays a significant role when using digital games to meet learning goals and cultivate empathy. Digital games are complex cultural artifacts that, like all media texts, invite manifold readings and interpretations that are impacted by contingencies including, but not limited to, game design, technological affordances, approach to gameplay, time spent playing, and user disposition. These variables can be better controlled and directed to meet specific ends by contextualizing gameplay with ancillary material that create opportunities for productive discussion, community building, and spaces for reflection.

As previously stated, empathy is a key expected outcome in peace education and many scholars in the field support it as *the* crucial condition for conflict resolution (Kampf & Cuhador, 2015, p. 542). It would be fruitful, then, to explore how the production of empathy can be ameliorated through suitable contextualization. Empathy is generally conceived of as a desirable trait, but it should be approached carefully in both game design and implementation because, under certain circumstances, it can lead to

negative results. For example, an empathetic identification with an antisocial or violent character in a game can increase antisocial and aggressive behavior in the player (Happ et al., 2014). Belman and Flanagan (2009) also caution that empathy without attendant mindfulness or thought will not produce "significant shifts in… players' beliefs about themselves, the world, or themselves in relation to the world" (p. 10). Gorry (2009) speculates that empathy generated from decontextualized interactions with virtual spaces may not transfer to the real world. Empathy alone does not automatically produce an understanding of outgroups members or the social and historical forces that shape instances of injustice and suffering.

Furthermore, a game designed to elicit empathy may not be received as intended. Besides unfavorable player dispositions, Carvalho (2014) and Toma (2015) observe that a digital game can be played as "just a game" where its content can be ignored by a player who is driven to "beat the system", finish and win. This emphasis on gameplay over game content not only impedes the production of empathy, but can run counter to most ostensible learning and affective outcomes. Before proceeding to a discussion on context, it bears to mention that this issue can be moderated at the game design level. Rather than relying on text, dialogue or incidental environmental cues to deliver the message, the emphasis should be placed on expressing content through essential game mechanics, ideally making gameplay and content as inseparable as possible. Merging a game's content with its chief mechanics makes it more difficult to skirt intended outcomes, and learning becomes active, embodied and necessarily occurs by "doing", the key component that underpins both situated cognition and situated learning (Gee, 2004).

Shaping context is also an effective means to counter the effects of "gaming the game" at the expense of the content. For example, two studies carried out by Happ et al. (2014) found that priming players prior to a gameplay session with

videos and readings that promote empathy led to greater prosocial behavior and empathy for the characters in the game. Jin (2011) also found that "presenting pregame narratives has been successfully shown to ameliorate the deleterious effects of violent games on behavior " (as cited in Happ et al, 2014, p. 83). Therefore, it might be productive to preface gameplay with materials that help guide participants to the goals and outcomes sought from the gameplay experience.

Supplementary material on relevant themes or topics can be strategically furnished before, during and/or after gameplay to support a variety of goals and outcomes. If *Valiant Hearts: The Great War* is used to teach about soldier trauma in World War I, students can be provided with genuine letters from soldiers injured on the front to compare and contrast with the soldiers' experiences represented in the game. This approach exercises critical-thinking skills, builds knowledge and can lead to greater affective ties with the subject matter. Complementary material, for example, could also be used to test the accuracy with which *1979 Revolution: Black Friday* represents the events and perspectives of the Iranian Revolution. An article written by a journalist in Iran that accuses the game of being "Western propaganda" (Lien, 2012) might prove a convenient starting point for further research and understanding. Students could access readings and other media that comprise multiple historical, ideological and personal perspectives to arrive at conclusions about the validity (or lack thereof) of the claim. Besides better directing players to the desired outcomes, the approach in both of these scenarios would also contribute to more mindful gameplay and greater attentiveness to the in-game content.

The final, and possibly most important contextual consideration, is the inclusion and creation of spaces for dialogue, collaboration and reflection. Whether face-to-face discussions, online forums or computer mediated communication (CMC), the effectiveness of collaborative learning around games in formal and informal forums

has received broad support from educational games scholars (Ang, Zaphiris & Wilson, 2010; Gee, 2003; Jenkins et al., 2009; Steinkuehler & Duncan, 2008; Toma, 2015; Turkay et al, 2014). Learning communities that contextualize games have been shown to construct, share and exchange knowledge socially, solve problems collectively, and partake in evidence-based debates (Steinkuehler & Duncan, 2008). These interactions also encourage community building and positive social interactions (Ang et al., 2010) and, if effectively established and guided, could work in the service of a conflict resolution process. Moreover, the formation of online and virtual communities around games can also benefit virtual peace education (VPE). Firer (2008) argues that intergroup contact between participants in an active and violent conflict is "impossible to implement", and thus advocates for VPE as the only means to institute meaningful intergroup contact. Even when hostilities cease, VPE can also enhance peace education in the "post-conflict process of healing and among parties in societies torn by rifts and crisis" (Firer, 2008, p. 193). These benefits all support the value of productively contextualizing gameplay that aims to do more than entertain.

It has already been established that opportunities for reflection within the game better dispose players to empathy and mindfulness (Simon, 2014; Smethurst & Craps, 2015). It is also beneficial to structure an apparatus for individual and/or collective reflection outside the game. Ang et al. (2010) support what they term "collective-reflective play", where players give thought to their in-game experiences, but also "reflect on individual roles, goals, and knowledge shared in the group" (Ang et al., 2010, p. 375). Guided reflection can provoke deeper thought, mindfulness, and direct focus to particular aspects of the game that may further a learning agenda, produce empathy, or gain new knowledge and perspectives on both ingroups and outgroups. Reflection can also incite players to "recognize and engage with the material

relations that continue to structure individual and collective identities" (Simon, 2014, p. 211) and, consequently, catalyze action as well as changes in attitude and behaviour.

## Changes in Behavior and Attitude in Digital Games

While immersed in a game, players make decisions and are held accountable for their choices, reinforcing the reality that actions and choices have consequences. On the other hand, empathy tends to occur at moments of diminished agency, where a player is more passive and has occasion to absorb the content and reflect on the consequences of their choices. As the pendulum swings between these two states, action, agency, responsibility, and empathy combine in any number of ways to produce a range of emotions, understandings, and responses. But what is the lasting effect? Can digital games alter behaviour and shape new attitudes? These questions are of particular import to ICR and PE because they both endeavor to "target attitude change at the individual level" (Kampf & Cuhador, 2015, p. 542), and changes in attitude are prefaced by changes in behavior.

There has been some evidence in the games discussed thus far that players undergo some type of change from playing. Zagal (2009) suggests that digital games have the capacity to affect a player's ethical mindset, while third-party participants to the Palestinian/Israeli conflict who played *PeaceMaker* were observed to experience a change in attitude (Kampf & Cuhador, 2015). Additionally, Evan Narcinne's review of *This War of Mine* states that "It's the kind of game that could potentially change the way you watch the news, treat others or cast a vote in an election" (as cited in Toma, 2015, p. 218). Bogost's (2007) claim that games are instruments of persuasion also implies that games can influence thought and action. Playing digital games, then, demonstrates the potential to produce changes in their players, but are these changes in behavior and attitude sustainable and

long term? Do changes experienced immediately after gameplay transfer to the real world?

Children at play assume roles, work through feelings, and experiment with a wide range of social, emotional, and behavior constructs that inform their relationship with the real world (Piaget, 1962). Similarly, the digital game space is a site for playful simulation, rehearsal, and experimentation that may transfer to real-life, a dynamic presumably not confined to children. Most of the recent research conducted on if and how digital games can successfully alter behavior tends to cluster in the area of health and medicine (for example, Duncan, Hieftje, Culyba & Fiellin, 2014). There is some evidence, however, that players will apply social skills and prosocial behavior learned in digital games to relations outside the gaming environment (Gentile & Gentile, 2008; Gentile et al., 2009 as cited in Granic et al., 2013). Likewise, Happ et al. (2014) found that "when playing an avatar in a video game, one can still experience empathy for an opponent, and thus act more prosocially or experience a positive change in attitude toward others" (p. 91). Furthermore, research in neuroscience supports that gameplay can physically alter the brain which, in turn, can alter an individual's mindset and behavior. Buckley & Anderson (2006) found that frequent exposure to certain types of media affect internal variables (emotions, cognitions, etc.) and can lead to permanent changes in personality (as cited in Happ et al., 2014). Likewise, Bavelier et al.(2011) describe digital games as "controlled training regimens" (p. 763) and suggest that improved performance in gameplay is "paralleled by enduring physical and functional neurological remodeling" (p. 763). However, there is a lack of long-term studies and additional research is critical to identify how specific and sustained behavioral and attitude changes can be produced by playing digital games. Despite the paucity of studies, the existing evidence indicates that digital games are shedding their stigma as a force of corruption on our youth and promise to become powerful agents of social and personal transformation.

# Discussion and Conclusion

The examples reviewed in this paper offer a glimpse at the vast potential that digital games hold for the work of peace education and conflict resolution. The judicious use of these interreactive virtual environments can provide safe spaces for contact and collaboration, encourage perspective-taking, produce empathy, help negotiate ethical and moral dilemmas, stimulate intercultural understanding, facilitate the acquisition of historical and cultural knowledge and, occasion reflection on one's own passive complicity when faced with instances of suffering and injustice. The hope is that these benefits will have a lasting effect on individuals and cause positive and sustainable changes in behaviors and attitudes. However, much work remains to be done before this emergent, complex, and rapidly evolving medium can be more effectively leveraged for the ends of social good.

Research into the intersections of digital games, education and the work of peace and justice is only just beginning. Studies are scarce and perceived benefits remain largely untested by longitudinal and/or empirical studies. Also, in the few existing studies, almost no positive effects were observed in participants who were directly involved in intractable conflict, an area where success is most desperately needed (Todd & Galinsky, 2014). Despite these challenges, there is much room for optimism as advances in psychology, analytics, psychometrics, neuroscience, game design, technology, and other relevant areas will presumably further the field and lead to important breakthroughs and viable intervention strategies.

In the meantime, design and implementation must proceed cautiously, as digital games are powerful tools whose mismanagement can backfire and achieve unintended consequences.

Essentializing complex subjects, cultural appropriations, and unproductive or misplaced emotional manipulations and "emotioneering" are some perils to be avoided. Sanford et al. (2015) sum up the situation well when they advise that "creating simplistic games that are unsophisticated and non-immersive run the risk of doing the opposite of what they intend, that is, they can trivialize vitally important world issues" (p. 102). This view is counterbalanced by Carvalho's (2014) observation that designers be weary of creating overly complicated games or risk alienating players, especially those who have limited experience playing digital games. As the field progresses, designers will be challenged to negotiate the fine lines that distinguish the complicated from the complex, and representation from misrepresentation.

A critical approach must underpin the successful use of digital games as instruments of social justice. As media texts and sites of literacy, digital games are subject to the same interrogative process that underpins the responsible design and consumption of all media. Who and what is selected for representation? Who and what is suppressed? Whose narrative perspective is privileged? Whose is ignored? What is the ideology and rhetoric implicit in the design? Does the treatment of the subject provoke thought, empathy or action? If so, how? If not, does it still have value? Are there specific elements about *how* digital games transmit their message that make them more or less effective than other media or modes of representation? Who has access to game, and who does not? These questions are by no means exhaustive, but mark a path by which the once maligned and now pervasive influence of digital games can be leveraged for the causes of justice, equity, civility, and peace in the Information Age.

# Recommendations and Future Research

**Recommendations for Policy:**

- Integrate programs to instruct in the use of digital games for education, peace education, and conflict resolution in college and university curriculums.

- Train and encourage educators to implement commercial off-the-shelf games (COTS) in addition to games designed specifically with educational goals.

- Provide direction and resources to model how digital games can be modified and repurposed from their intended use to meet specific learning outcomes.

- Develop and disseminate ancillary material and resources to contextualize gameplay to better achieve desired learning objectives.

- Create online forums and/or opportunities for face-to-face discussions to contextualize gameplay with dialogue, collaboration, and reflection.

- Leverage shared virtual spaces and multiplayer game environments to enable intergroup contact and enact virtual peace education (VPE).

- Organize workshops, conferences, and symposiums where scholars, experts, and practitioners can share ideas, models, and practical experiences.

- Ensure that digital games used for the work of education and peace do not include elements of cultural appropriation, trivialize important issues or essentialize race, ethnicity, practices, and beliefs.

**Potential Future Research Questions:**

- How can digital games be designed and implemented to effect sustainable and positive changes in the attitudes and behaviors of ingroup members involved in prolonged and intractable conflicts?

- What are the affective and cognitive responses to the various perspectives players can take in digital games?

- How can empathy generated through gameplay lead to action and pro-social behavior outside the game?

- How do moral dilemmas negotiated within digital games affect or influence a player's real-world ethical conduct?

- What are best practices and strategies for harnessing digital games for the work of peace and education by practitioners who have little to no experience in this area?

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UNESCO MGIEP

35 Ferozshah Road, ICSSR Building, 1st Floor, New Delhi 110001

Phone +91 11-23072356-60

W: www.mgiep.unesco.org

E: mgiep@unesco.org



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35 Ferozshah Road, ICSSR Building, 1st Floor, New Delhi 110001

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