ETHICS IN IMMERSIVE GAMEWORLDS:

PERSONAL GROWTH AND SOCIAL CHANGE

by

Natasha Boskic

BA, University of Novi Sad, 1986

BEd, University of British Columbia, 2004

MDE, Athabasca University, 2003

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Abstract

This research was conducted to gain a deeper understanding of ethical issues confronting Alternative Reality Game (ARG) players who, when faced in a gameworld with actual-life problems, must collectively reach solutions which are expressed through narratives and critical literacy. The aim of this research was to draw on the experience of game players engaging in the ARG, "Urgent Evoke," in order to respond to the following research questions: 1) What kinds of moral functioning are evident in human play in immersive gameworlds? 2) How can players and educators who use these spaces grow as individuals in their ethical sensibilities?

The method of analysis for this study was virtual ethnography, including pre- and post-game surveys and interviews and the analysis of artifacts created during the game. The four-component model of moral functioning (Narvaez & Lapsley, 2005) was used as a framework for analysis with the following main categories: judgment, sensitivity, motivation, and action. However, because Narvaez and Lapsley's division in skills and sub-skills appeared too inflexible for broad understanding of the behaviours under review, additional coding was applied.

Study results suggest that ARGs motivate players to contribute to the game, and that through such contribution participants may arrive at understandings that encourage them to make shanges in their behaviours outside of the gameworld. In the four component areas, the ARG offered fertile space for growth and learning through discussion, negotiations, and reflection. The study suggests that ARGs can be used successfully to encourage sensitivity to questions of ethics.

Preface

An earlier version of the introduction of the thesis has been published. Boskic, N., Dobson, T., & Rusnak, P. (2008). Play it seriously; Juxtaposing AR and RW crisis. *Proceeding of the 2nd European Conference on Games Based Learning*. Barcelona, Spain, October 2008. The section included in this thesis comprises my own contribution to the paper.

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Dedication

For my children, Borislav and Nevena

Chapter 1: Introduction

1.1 The Beginning of a Journey

My interest in this research question began with my children, specifically my son, who spent hours playing video games. Not a gamer myself, I could not understand his passion and commitment to something he "should have outgrown a long time ago." As an educator interested in literature, I was intrigued when he told me that "World of Warcraft" was not about shooting people or gaining points, but about getting to know other players, discovering or creating your own stories, and finding yourself forced to work with others to accomplish tasks you could not complete alone.

The stereotype of the solitary, alienated computer game player was challenged by what I heard: *relationships*, *narratives*, *collaboration*. A number of questions about motivation, learning through doing, and the emergence of specific skills, competencies, and abilities that might develop through such engagement suggested themselves.

Subsequently, I talked to a colleague who described an Alternate Reality Game, "World Without Oil" (WWO), in passionate terms. Her remarks sparked my interest and led me to enter the world of ARGs.

1.1.1 World Without Oil

Jane McGonigal's game, "World Without Oil" (WWO), ended in June 2007, but both game scenarios and players' contributions were still available on the website. I found four statements on the home page describing the game promising. They read:

- A massively collaborative imagining of the first 32 weeks of a global oil crisis.

- An alternate reality chronicled online in 1,500 personal blog entries, videos, voicemails and images.
- A serious game for the public good.
- A future-changing experience. (WWO, 2007)

The motto of the game was "Play it – before you live it." First, I watched a video clip compiling participant reflections on their experiences with comments by game creators and publicists. The speakers in this video emphasized the game's global reach and impact, remarking that participants "from all corners of the world" contributed (Aguilar, 2007).

The event at the centre of the game was an imagined global oil crisis in a possible future. According to game developer Ken Eklund (2007), the goal of WWO was to make people think about the "common future" and deal with possible real consequences of living in an unsustainable fashion. The Participant Architect, Jane McGonigal (2007), stated that players used collective wisdom to look for solutions which they might then use to change their practices outside of the gameworld. She claimed the game was unique because, as a direct result of their experiences, "gamers" engaged in actual life actions for change.

Reflecting on the results of the game, the designers claimed, "more than merely raising awareness, WWO made the issues real, and this in turn led to real engagement and real change in people's lives" (McGonigal, 2007). The game was described as "a serious game for the public good," a life-learning lesson that was nevertheless "compellingly fun" (Olsen, 2007). The creators of this scenario called the game global; it boasted participants from 12 countries around the world.

The game lasted 32 days, each day representing a week. The imagined oil crisis thus ended in a month. As someone who had actually lived through an oil crisis, one of the first questions that occurred to me was: how could an oil crisis experienced virtually in 32 days recreate the intensity of a scenario that would literally last for years?

In an effort to understand more about "World Without Oil," I read newspaper reports on the game, focusing on quotes that discussed narratives and storytelling, and on posted scenarios and personal blog contributions. Participants were invited to tell their own stories, to contribute though keeping a blog, and to communicate with one another using email and postings. They constructed narratives, interacted, and engaged in collaborative problem-solving.

Storytelling is frequently perceived as an essential human practice (Fulford, 1999). People tell stories in order to make meaning out of life and the world around them, to learn from the experiences of others, and to teach. Telling a story is more than an imaginative exercise. Consciously or subconsciously, people explain and justify their experiences through narrative (Richardson, 1997). They speak of the present or future, but they are actually viewing the past and building upon it.

I was curious to tap into gamers' personal narratives, to see how stories emerged from the participants' imaginations and evolved over the 32-day period. In due course I turned to the blogs related to WWO, starting with "miawithoutoil." This blog was "a live journal of Mia, a young girl in Bristol, England, writing as oil prices soar and society creaks under the strain" (miawitoutoil, 2007). I read the first post. Descriptions of rising prices,

soaring food costs, and crowded buses tangled with my own memories. The more I read, the more familiar it sounded. This was not a fiction; this was my past.

My memories are vivid. At the beginning of the 1990s I lived in Serbia. The country was experiencing high inflation, the economy was in crisis, fuel was scarce and precious, and every day seemed worse than the one before. At the same time, I faced a personal tragedy: I lost my husband in a car accident and was left alone, struggling to raise a two-year-old boy and a baby girl.

In the inflationary turmoil it was essential to convert dinars into German Deutsche Marks (DM) the moment you got them, before they slid even further in value. This meant clandestine deals with illegal currency traders who were known to rob and kill clients in dark lanes for a better return than exchanging their money. My mother, then in her 50s and retired, made these exchanges with three salaries in her hands (my father's, my brother's, and my own). She told stories of how she used her wits to escape danger and secure money to buy food for her children and grandchildren. Then, we laughed. Now, I shiver in contemplating the real danger she faced in those moments. We relied on her for our existence.

To me WWO was neither a game nor an alternate reality. It was my reality, and I found it painful to think about those times. Reluctant to re-live them, my level of enthusiasm for the game dropped considerably. My reading became erratic; often posts brought back familiar feelings of indignation, anguish, helplessness, and humiliation. Skipping to the next blog, "Everything Falls Apart" (fallingintosin, 2007), I was immediately struck by its design: a pink page with a kitten's head in the top right corner. How could someone

go through dark moments and represent their experience this way? During the crisis I kept a daily diary. Sleepless, I wrote for hours, but I had no wish to decorate my journal. Reading how game participants played WWO became increasingly upsetting.

The "pink girl" talked about her jeep, which she named Roxy. Thinking of the new car that had been my husband's dream, I found it impossible to continue reading. That car arrived shortly after his death and sat unused on the street. My fuel limit was ten litres per month, a total I tried to stretch as far as possible. The gas stations were almost always empty, and fuel was all but impossible to get. At night I went to a shady garage or warehouse and paid a smuggler dearly for a dirty ten-litre canister of fuel. At other times, we'd hear rumours that gas would be available at a particular station. No matter how early one arrived, the line—started during the night—would be huge. Unable to run our engines for warmth, we waited in cold cars for hours, hoping the gas would last until our turn. Returning home, we might discover one of the long power outages which were a regular part of the week.

My final attempt to read through the narratives took me to a blog by a player from Iraq. I hoped initially for a different perspective, but the blog belonged to a U.S. citizen "finishing up 4 years in Iraq as a private security operator" (lead_tag, 2007). A blurry image showed a man in camouflage carrying a weapon. Rather than read from the beginning, I went straight to the last comment. He wrote:

> Hope everyone who read and wrote in the WWO community took something away from the experiment, I certainly did. I truly enjoyed reading what everyone

> contributed. Many of you are incredible writers and reminded me of why I should stick to pulling triggers for a living. (lead_tag, 2007)

Tormented by images of the life we lived during an oil crisis, I found I could not read any more imaginary stories. To know the painful reality, I could simply open my diaries.

I wondered how aware the gamers were that life as described in the WWO scenario was actually happening or had already happened in other parts of the world. The game's set-up gestured in this direction: "This is what is happening on our planet. How can we help? What would you do?" I wondered if ARGs could engage people in meaningful thinking about serious problems. The WWO participants claimed to be cycling, walking, or sharing a ride to work more often; they identified this as a positive outcome of their game experience. This seemed to be promising. Yet, postings and newspaper articles frequently referred to WWO as great fun. Living through an oil crisis was not fun for me, just as I am sure it is not fun for the millions around the world experiencing the actual thing.

My reading of the narratives created in WWO was obviously different from those of other people. In order to understand why this "alternate reality game with a heart of gold" (Waite, 2008), which received a SXSW (South by Southwest) Web Award for activism, had such a disturbing, emotional impact on me, and to grasp such diametrically-opposed opinions, I turned to research literature.

Among critical literacy approaches, Allan Luke (2004) describes Street's (1984) idea of literacy as social practice, but claims it should only be a starting point for the debate. Luke grounds his theory in the work of Bourdieu (1993) and the investment of economic,

social, or other capital that shape our social relations and identity. He cites Freire (1976), questioning the knowledge vs. power relation (Foucault, 1977) in which literacy is a means of cultural, linguistic, and political monopolization. If games, especially video and computer games, are created, developed, and played mainly by members of the upper classes – those who have money and access – then ideologically and politically-coloured literacies are disseminated among class members which promote the values and beliefs of those members. The experiences, and therefore the beliefs and values, of those who do not belong to these classes will necessarily be different.

But it may be posited that those with the opportunity to shape the social climate in games also have the opportunity to shape it in actual life. It may also be supposed that game designers have little or no personal experience of the events presented in games they create (scenarios such as war, earthquake, poverty, or a world without oil). If an "outsider" with authentic experience in actual life entered the gaming environment, how might she present herself and how might other players view her? For example, if I had participated in the game while it was live, posting comments on inflation or rocketing gasoline prices as a concrete and terrible reality rather than a future or imaginary construct, would this have ruined the game by subverting the fun? Or would these perspectives have been welcomed as expert input into the gameworld?

"Second Life" (a three-dimensional online virtual world) is a good example of a game space that by its system requirements limits participation to those whose computers have better, newer operating systems, a stable Internet connection, and good graphic cards. "Second Life," whose users interact with each other through avatars, is used for personal entertainment and exploration. It is also used for business and education. Although open

to the world, the majority of educational institutions with their own island (space) in "Second Life" are from the United States (Jennings & Collins, 2007). The teaching and learning approach often promoted in this part of the world is based on constructivist theory, which creates learning situations with the student in a central role. This approach may conflict with teacher-centred transmission models that dominate in some parts of the world.

With this in mind, in a social context that values specific approaches, how can different ideas survive and be respected? Here, we return to Luke's discussion of personal investment and identity creation. How much is a person willing to invest, even change to comply? How will self be preserved, and to what extent? Luke states that "ethnographies of literacy must bridge not just home and school, but the local and global, and the micro and macro political-economic domains." Furthermore, "we need to ask […] fundamental questions about which languages and literacies, sanctioned by which state educational systems and globalised institutions, have which kinds of material consequences in people's lives" (2004, p. 334).

In the context of this thesis I subscribe to Ciardiello's definition of critical literacy as practices that "enlighten the reader about the ulterior designs and multiple meanings of text" (p. 138). Those practices are: 1) examining multiple perspectives, 2) finding an authentic voice, 3) recognizing social barriers and crossing borders of separation, 4) regaining one's identity, and 5) the call of service (Ciardiello, 2004, p. 139). Critical literacy entails understanding through questioning. It entails not just being "critical" towards what we see and hear, but going beyond our personal perspective, being capable of "emphatic" vision, being the other, various others, with the awareness that ethics is

highly contextual. It is also a practice in which we, as readers of multimodal text, reflect on our own values and experiences, and the influence those have had on our judgment and decision-making.

1.2 Moving Away from WWO

My experience with WWO led me to ponder the following questions about ARGs: 1) What kinds of moral functioning are evident in human play in immersive gameworlds? 2) How can players and educators who use these spaces grow as individuals in their ethical sensibilities? These, then, are the questions that guide this research.

The resulting thesis consists of seven chapters: 1) introduction to the study, 2) review of the history of gaming, 3) review of relevant literature on education and games, 4) review of literature on virtual ethnography, 5) research study, 6) discussion, and 7) conclusion.

The goal of the literature review was threefold: 1) to understand games and play as activities intrinsically and inseparably connected to our physical spaces and daily lives; 2) to explore how games have been used for education and personal growth, with a focus on digital and computer games; and 3) to theorize the challenges and benefits of doing academic research about and in virtual environments.

The second chapter, History of Play, examines perspectives on play and games, how they are defined by different scientists and researchers, and the ways in which play and games are categorized. It looks at play elements and the different social functions play performs in human society, drawing on the work of Huizinga (1970), who claims play is a cultural phenomenon that can be examined historically. The chapter ends with a look at

technological progress at the beginning of the 20th century, contemporary digital environments, and game genres developed in these environments.

The third chapter, Games for Learning, explores ways in which learning occurs in virtual spaces, the elements of design that support them (agency, identity, player interactions, the notion of time and space, the impact of failure, and the idea of the "magic circle"), and more broadly, challenges of using games in education. Next, the capacity of games to provide engaging, motivating, and challenging learning spaces in which different skills can develop is discussed; I also explore how constructing narratives in social gameworlds has become a powerful tool for meaning making. A discussion of serious games that offer possibilities for changing the world through play follows with a description of identified issues around ethics in games. The section ends with attention to concerns about video games and addiction, the impact of video games on violence in actual life, and interesting challenges presented to teaching through, but also about, games.

The fourth chapter, Virtual Ethnography, examines the notion of fieldwork when research is conducted online. It considers research design, including participant selection and recruitment, the role of a researcher, issues with obtaining consent, privacy and confidentiality, and the complexity of data collection and analysis. It also touches on ideas around virtuality and reality, the identity of participants, and copyright and intellectual property law.

The fifth chapter, Ethics in Immersive Gameworlds, describes the research design, including the role of the researcher, the setting, the participants, the methodology, data collection and analysis, and presents the research findings.

The sixth chapter, deals with topics around moral functioning expressed through critical literacy practices and examines specific issues that emerged during the study. In particular: supporting and understanding others, becoming a leader, being a good citizen, and freedom of speech. The discussion of these four topics includes the examination of particular aspects of participant behaviour in the study and, more broadly, behaviour in the multicultural online social space. Unexpected circumstances that occurred during the game point to the need for increased focus on creating and building ethical sensitivity, expressing compassion and empathy, and undergoing personal transformation. Issues of 1) "borrowing" text from the web and speaking through "the words of others;" and 2) censorship of player contributions by game designers are described.

Though these aspects may at first appear somewhat tangential to the main research question, they speak to the potential of ARGs to encourage us to reflect critically about our own beliefs, values, and practices, and to question our capacity to understand "the other"—a fundamental principle of education.

The Conclusion of the thesis points to some limitations of the study and offers suggestions for further investigation.

Chapter 2: History of Play

> *To what extent does the civilization we live in still develop in play-forms? How far does the play-spirit dominate the lives of those who share that civilization?* (Huizinga, 1970, p. 195)

2.1 Approaches to the Study of Play

Universal definitions of play are problematic. However, a number of approaches to the study of play exist. In the past, the study of games focused mainly on their history. Theorists perceived games as children's pastimes, with attention given to equipment or types of games (Caillois, 1961). Less attention was paid to the nature of play and its effects. A significant step forward was made in 1938 by Huizinga, often considered the founder of Dutch cultural history and the first to claim play was a cultural phenomenon. He delineates the problem directly: to what extent does human culture result from play, and to what extent does it express itself in forms of play? His concern is not with games but with the play elements of law, war, poetry, philosophy, science, and art. He argues that play is a necessary component of culture.

Huizinga (1970) further claims that play is older than human society, older than civilization, and older than culture. He supports his argument by referencing animal and children's play, and explains that play is a result of instincts or internal drive rather than reasoned decisions or behaviour. In the first sentence of his book, *Homo Ludens*, he says that "animals have not waited for man to teach them their playing" (1970, p. 1).

However, as Huizinga (1970) realizes, play in human society is not just a simple physical exercise or a psychological reaction to stimuli. It has many functions susceptible to study. Huizinga (1970), Caillois (1961) and other theorists of play (Avedon & Sutton-Smith, 1979; Decker, 1992; Hans, 1981; Salen & Zimmerman; 2006, Sutton-Smith, 1997) begin their examination of play at the point when play passes from the realm of physiological (reactions) and psychological (instincts), seen in animals, to become a part of culture -- that is, a human social construction. To demonstrate that culture is derived from play, Caillois and Huizinga give diverse examples from art, law, poetry, philosophy, and religion. Caillois calls toys and games "the residues of culture" (1961, p. 58).

The social functions of play change as they pass through time and space. What was considered sacred in one era may be unacceptable or trivialized in another. Similarly, what is tolerated in one locality or culture may not be valuable or appreciated in another. Culture is not the same in every society; it is a social construct "consisting [of] narratives and symbolic dialogues" (Bodley, 1996, p. 10). Play, however, is "a function of the living" (Huizinga, 1970, p. 7). Some children's games could be seen as simulations of serious adult activities or as strategies for learning to cope with adult tasks in the future (Fig. 1). It would be wrong to generalize and view every game as a representation or exercise of real responsibility. Games are not only played by children, and it is reasonable to infer that they have different functions when played by adults. Rather than a stage of development and growth, adult games might represent an enacting of players' lives (Sutton-Smith, 1997). The social function changes, but the nature of play does not. In addition, "games can provide proof of the constancy of human nature on certain

levels" (Caillois, 1961, p. 82). Culture and historical moments may be reflected in games. For example:

> […] counting-out rhymes were said to be survivals of ancient practices for choosing victims by lot; the singing game of Nuts and May was a relic of marriage by capture; London Bridge was said to be a stylized vestige of the ancient custom of burying a child alive in the foundation of a new structure, or the offering of a human sacrifice to the gods of the water. (Avedon & Sutton-Smith, 1979, p. 159)

Figure 1 A mechanic

© A mechanic. Boskic, N. 2008.

Through games we can learn about customs, beliefs, and the evolution of particular cultures (Avedon & Sutton-Smith, 1979; Carter, 1992). Games and play can help us understand human nature. People are "meaning-seeking creatures" (Armstrong, 2006, p. 3); therefore play and narratives, created either in the form of children's games or as rituals and mythology, are ways of learning to live with others and with our environment.

These activities are less about gods and the supernatural and more about our own experiences (Armstrong, 2006; Avedon & Sutton-Smith, 1979; Eisenhart, 2001; Hans, 1981). Hans even claims understanding achieved through play may be more valuable than understanding achieved in other ways. Play and games often demand players go beyond that of which they think they are capable. It is sometimes difficult to separate learning from play (Thomas & Brown, 2007).

Many theorists have tried to define play, but no single clear definition has emerged or seems possible (Crapo, 1993; Sutton-Smith, 1997). Each author's definition has its own focus. Salen and Zimmerman (2004), for example, who are interested primarily in game design, argue that we need to define the relationships between games and play before we offer a definition of one or the other. On the one hand, they state, we can see games as a subset of play. On the other, play can be seen as an element of game.

Since not all theorists distinguish between game and play, the two terms are often used interchangeably. The arguments Salen and Zimmerman (2004) develop in their book, *Rules of Play*, are based on English-language lexicography. Not all languages separate these two terms, Salen and Zimmerman note. For example, in Serbian (this author's native language) *game* and *play* have one equivalent term. Nevertheless, after discussing and comparing eight different definitions of games, Salen and Zimmerman offer their own definition, one of the most frequently cited in other work about games:

> [Game is] a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome. (2004, p. 80)

Play is "a free movement within a more rigid structure" (2004, p. 304). Salen and Zimmerman's (2004) definition of play is sufficiently broad to encompass different human activities.

Play can be seen as a phenomenon in the complex wider system of human society and games as organized activities or components of play. How do we play? What separates play from non-play? How do we know, "it's just a game, not actual"? Some connections can be drawn between play and illusion and play and imagination. The word "illusion" has its origin in Latin, from in- + ludere (to play), and is defined as "something that deceives or misleads intellectually," whereas imagination is "the thinking or active mind" (Merriam-Webster, 2009). The common denominator here is *mind*, and the question emerges: how does our mind know what is actual and what is not? Crapo argues that play is a "trance-like state of mind in which fantasy and imagination overshadow the real world" (1993, p. 306). We watch a movie and cry even though we know it is a fantasy-world. We lose a game and are angry at our bad luck. We read a novel and are afraid for the character's future, as if he/she really exists.

Play is imagination, the manipulation of images which move in and out of the "real world." Huizinga (1970) often speaks of play using the metaphor of *detachment*, to detach from reality, to detach from belief. The Romantics accepted Coleridge's definition of imagination as "a willing suspension of disbelief." Sutton-Smith (1997) claims that "theories of dreams often parallel those for play" (p. 62); further, "there is a connection between the character of dreams and the character of play" (p. 63). Many creative inventions were discovered in dreams or through play. Dreams as play are a form of memory, wish fulfillment, problem-solving, and mood regulation (Sutton-Smith,

1997). Imagination, according to Kant as paraphrased by Sutton-Smith, "mediated between sensory knowledge and formal reasoning" (1997, p. 131). Psychologists state that play is the highest phase of a child's development (Cassel, 1974; Singer & Singer, 2001; Stagnitti & Unsworth, 2000), the point at which imagination reaches a height of inner representation. Sigmund Freud and Carl Jung used play and art as a way of communication with the unconsciousness. Through their practice they developed techniques of active imagination. Freud and Jung's followers and other psychologists (Erikson, 1993; Freud, A., 1960; Klein, 1975) used play as a form of therapy. As Sutton-Smith says, "play is typically a primary place for the expression of anything that is humanly imaginable" (1997, p. 226).

Mel Slater (Ruffini, 2008), Professor of Virtual Environments at University College, London, claims that while experience in the virtual environment is qualitatively different from, say, watching television, similarities do exist between the two. In both cases the subject experiences split knowledge about physical reality and imaginative space. Virtual worlds are different because they engage the whole body, and the experience is stronger.

Virtual worlds and other imaginary spaces are by no means new. People have always been aware of alternate states of consciousness, "other worlds," and have been interested in exploring them in the same way they have studied other aspects of the mind and body - to make meaning of the world and understand ourselves as living beings. People enjoy experiencing worlds different from the material through dreams, religious practices, and states of consciousness altered by various techniques or drugs. Richard Bartle, a co-creator of the first networked virtual world, in his work *Designing Virtual Worlds*, describes virtual worlds as "places where the imaginary meets the real" (Bartle, 2004, p.

16). The actual and imaginary always merge through a medium (Calleja, 2006). Play and imagination bring freedom, not in chaos, but through willing submission to the constraints of a complex system of rules.

Salen and Zimmerman (2004) speak of a new quality emerging during play which they call "transformative play" (p. 305). Sliding into the category of the *unreal*, this play is never completely predictable. Its results can be surprising and may force the structure of the play to change. Complex systems are possible only when there are context-sensitive constraints (Juarrero, 1999) -- in this case, the rules that govern play. They impose limitations on players, but at the same time those limitations create possibilities. When rules are learned well, players are free to manipulate them and use them for their benefit. As a result, new relationships are enabled and new solutions found. The system as a whole changes (Salen & Zimmerman, 2004).

Very often play is viewed in opposition to seriousness or work, but play has no opposite. It is hard to find a word or term to represent the opposite of play (Huizinga, 1970). Play has frequently been discussed or defined as something not serious, but Huizinga argues that "the contrast between play and seriousness is always fluid. Play turns to seriousness and seriousness to play" (1970, p. 27). This view of play as not work, i.e. not serious, is particularly evident when play is taken to be a degradation of or distraction from adult activities (Caillois, 1961; Ellis, 1972; Sutton-Smith, 1997). Despite numerous attempts during the course of human civilization to separate work from play and maintain that distinction, there are always points of intersection and merging (Ellis, 1972; Hans, 1981). The twenty-first century digital age, characterized by technology that is playful and still insufficiently explored, offers more possibilities for such encounters and fusions.

Despite disagreements about simplifying a concept of play as x=y, there is a unity of opinion in seeing play as a phenomenon worthy of study (Caillois, 1961; Castonova, 2005; Huizinga, 1970; Sutton-Smith, 1997). The urge to play is universally human and fosters harmony and well-being in individuals (Schiller, 1967; Sutton-Smith, 1997).

2.2 Categorization of Play

Play functions are social manifestations. Huizinga (1970) calls them "the higher forms of play" (p.25) and divides them into two main categories: "a contest for something and representation of something" (p. 32). He describes a male peacock parading in front of a female, competing for her attention and acceptance as a mate, as an example of the former, and a child playing the role of a tiger as an example of the latter. The dividing line between these two functions is not always clear or stable. Sacred rituals or performances may be simultaneously representations and contests. Participants believe their performance will be actualized in an altered way of living (such as status in the community or access to knowledge), but they also compete with other players engaged in the same experience or with themselves to prove they are worthy of passing into the "new life."

Representation and its enactment in sacred rituals often has consequences in actual life. Similarly, in contemporary culture, actors in theatre or film represent a situation or a character; the quality of their play influences their future work as actors, leading to fame, fortune, or disaster. Through the process of play, people undergo a mental process of transformation. Beyond their conscious step into the unreal, the representation or the contest may take participants to other extremes such as addiction, mental illness, emotional imbalance, or instability. In some cases, total identification with the

representation is favourable and expected, as in rituals and sacred religious ceremonies (Fig. 2). However, at the end of the theatre performance we await the "villain" or "killer" bowing and smiling at his audience.

Figure 2 Baptism

© *Baptism. Boskic, N. 1991.*

Caillois's primary criticism of Huizinga's (1970) categorization of play is that it is "too broad and too narrow" (1961, p. 4). Huizinga, however, states that his intention was not to theorize all possible forms of play but to focus on their social manifestations. Despite acknowledging that the variety of games in existence and the diversity of the characteristics they offer make it almost impossible, Caillois (1961) attempts to classify them. In *Man, Play and Games*, he categorizes games into four distinct groups: agon (competition), alea (chance), mimicry (simulation) and ilinx (vertigo). Some of Caillois's groups, which are based on player experience, may be paired. In competition, the outcome of the game is in the player's hands and is dependent on skills and competence. Chance is the opposite: the player must "surrender" to his or her fate. The third and fourth types of game are closer to the idea of illusion. In simulation, the player becomes

another character, as in theatre or role-playing games, while in vertigo he or she purposefully causes an alternate state of mind, destroying reality. Caillois (1961) describes a dance of Dervishes as an example of vertigo.

Sutton-Smith (1997) takes a different approach, looking at diverse forms of play and examining the implicit ideological rhetoric of various disciplines marginal to play. The interdisciplinary method, he believes, is the best way to investigate play's ambiguities. His study led him to distinguish seven different types of play:

1) the rhetoric of play as progress (usually applied to children's play);
2) as fate (usually applied to gambling and games of chance);
3) as power (usually applied to sports, athletics, and contests);
4) as identity (usually applied to traditional and community celebrations and festivals);
5) as imaginary (usually applied to playful improvisation of all kinds, in literature and elsewhere);
6) as the rhetoric of the self (usually applied to solitary activities like hobbies or high-risk phenomena like bungee jumping); and
7) as frivolous (applied to the activities of the idle or the foolish) (1997, p. 9).

This focus on rhetoric, instead of on contest or representation as in Huizinga (1970), or on variety of play experience as in Caillois (1961), reveals the essence of Sutton-Smith's (1997) theory: human dialogue, communication, and language. Sutton-Smith argues that rhetoric is created around actions which become everyday reality through play. A narrative is interwoven into the action of play. At the same time, the language and

terminology we use around play and games demonstrate "how far culture itself bears the character of play" (Huizinga, 1970, p. i). Huizinga devotes a chapter to the ways in which the play concept is expressed in different languages, from Latin and Sanskrit through Japanese, Chinese, modern European languages, Hebrew, and Arabic, to the languages of North American indigenous peoples.

2.3 Play Elements

In examining play, we may follow Huizinga (1970) in looking at the elements of play rather than moulding a single definition that excludes other possibilities. A number of theorists (Avedon & Sutton-Smith, 1979; Caillois, 1961; Salen & Zimmerman 2004, 2006; Suits, 2006) concur with Huizinga's first characteristic of play: it is a **voluntary activity**. If it is not voluntary, Huizinga says, it is the forcible imitation of play; however, he does not develop this further.

Some games may be "forcible imitation[s] of play" for some participants but not others, such as gladiators' games. Gladiators fighting for their lives may not find the experience "voluntary," but it is voluntary for spectators betting on the winner. Similarly, the film *Apocalypto* (2006), which is set in ancient Central America during the period of Mayan civilization's decline, depicts captives released in pairs and forced to run the length of an amphitheatre; they serve as target practice for the leader of the attackers, Zero Wolf's men. The reward for those who reach the end of the field alive is freedom. Of course, the men expect all the captives to be dead before they reach the end of the field. Caillois (1961) claims that "a game which one would be forced to play would at once cease being a play" (p. 6). Its freedom is destroyed (Ellis, 1972), and thus the experience is not a game for slaves or gladiators. Engaging in play as a voluntary activity highlights one of

play's most important qualities: freedom. Since people enjoy playing, their engagement is a manifestation of freedom.

The second characteristic of play is that it is done **in its own time**, a time of leisure. Even when it is part of a ceremony or ritual, it is performed during non-work time. When we look at sports, however, we see that they are organized activities performed at a specific time that could be considered work for the professional sportsmen involved. Nevertheless, no one will argue that they are not play.

The moment that distinguishes playtime from non-playtime is the moment we step into the unreal, into a "temporary sphere of activity with a disposition all of its own" (Huizinga, 1970, p.26). This unreality is an intermezzo in our lives; it does not happen when *actual* life is taking place (Turner, 1969). Caillois (1961) stresses the importance of viewing games as a side activity, the opposite of reality. Any intervention by ordinary life ends the play. Because it is a moment (an intermezzo), it has a starting point, a duration, and an end (Caillois, 1961; Huizinga, 1970).

Both children and adults, aware of real/non-real time, manipulate their ideas about reality rather than reality itself (Sutton-Smith, 1997). Play requires its time and its **space**; therefore it introduces order (Avedon & Sutton-Smith, 1979). The playground is often topographically or virtually defined, drawing the line once more between those who are in and those who are out.

In order for play to stay in the realm of the not-real, play has **rules**. For many theorists (Avedon & Sutton-Smith, 1979; Caillois 1961; Crawford, 1996; Huizinga, 1970; Salen & Zimmerman, 2004), games require rules that must be obeyed by all players or the game

will not function. Referring to playing with dolls, soldiers, and other similar toys, Caillois argues that not all games have fixed or rigid rules. Rules remain in the sphere of the imagination. If someone from the "outer world" enters and puts the dolls back in the toy box, the game is spoiled. The whole play may be improvisation, but the rules are not nonexistent. They are invented as the game proceeds. In *The Ambiguity of Play*, Sutton-Smith quotes Eigen and Winkler:

> Everything that happens in our world resembles a vast game in which nothing is determined in advance but the rules, and only the rules are open to objective understanding … chance and necessity underlie all events. The history of play goes back to the beginning of time. (1997, p. 59)

By obeying the rules, participants become part of the community; they are part of play. Play therefore inculcates a sense of belonging in its members. This membership can be temporary, lasting only until the game ends, or it may be permanent, as for boys and girls who enter the world of adults after going through rites of passage. The play is always surrounded by a feeling of secrecy (Huizinga, 1970). Those who are in the *game* world do not know what is happening in the *outer* world. Rules of ordinary life do not apply to those who are *in*. This sense of belonging is very important for the development of identity and agency, as discussed in the next section about games for learning.

Being different from others who are not members can be emphasized by wearing a mask or, as in current video games and virtual worlds, by having an avatar that allows one's true identity to be completely hidden. Some games can be played alone, but in most cases game play is not a solitary activity: "Play lacks something when it is reduced to a

mere solitary exercise" (Caillois, 1961, p. 39). Even when games are played alone, the game soon becomes a representation/exhibition or a competition with oneself.

Huizinga (1970) sees the element of **tension** as very important to play. Tension for him denotes uncertainty, chance, striving to achieve and then to end the game, "absorbing the player intensely and utterly" (p. 13). Later theorists of games call this engagement arousal-seeking (Ellis, 1972), flow (Csikszentmihalyi, 1990), immersion (Murray, 1998; Turkle, 2005), or interactivity (Salen & Zimmerman, 2006). The careful design of a participant's experience is critical for his or her engagement. The quality of interaction depends on the relationship between the player's choices and the system's response (Salen & Zimmerman, 2004). The existence of more possibilities for the player raises the uncertainty of the outcome and increases tension. A variety of possibilities does not mean arbitrary play, however. Salen and Zimmerman (2004) consider a good design to be a game with a simple set of rules and a limited set of objects that lead to unpredictable results. Caillois (1961) believes that if an outcome is known in advance, there will be no game. It is against the nature of play.

Constraints that exist in a game are imposed by the environment, by the prescribed rules, and by interrelationships among the players (Ellis, 1972). The complexity of games may be expressed through occurring social interactions, a variety of strategic options, and developed narrative or cognitive challenges. Complexity gives rise to **emergence**, which Salen and Zimmerman (2004) perceive as an important element of play. New patterns are created, and new relationships appear within a system. Those patterns are the result of a combination of interactions in a certain context. The changes that appear are not the same every time, but are context-dependent and dynamic, making the outcomes

unpredictable (Campbell, 1982; Holland, 1998; Juarrero, 1999; Logan, 2007; Salen & Zimmerman, 2004). What adds to games' complexity is an internal duality of forces: freedom vs. creativity, fantasy vs. discipline (Caillois, 1961). There is equilibrium between *agon* and *alea* (Caillois, 1961). By disturbing the equilibrium and creating a new system with changed relationships, players undergo transformations that become part of their experience, part of their history (Juarrero, 1999). Hans (1981) argues that play may create a false illusion of simplicity. The more complex the skills needed to play a game, the more human growth and adaptation are increased (Sutton-Smith, 1997).

The most difficult aspect of defining a play-concept is explaining why play is **fun**. According to Huizinga (1970), Crapo (1993), and Sutton-Smith (1997), fun is an essential element of play; at the same time, "the fun of playing resists all analysis, all logical interpretation" (Huizinga, 1970, p. 3). Personal enjoyment in play, art, or any other field is a primary preoccupation of Csikszentmihalyi's (1990) theoretical work. He accounts for motivation with his celebrated theory of flow, a state of full immersion and focus in which people are intrinsically motivated to do that which they are doing. Play is seen as an intrinsically pleasurable experience (Crapo, 1993). Playing a game can have a goal (material or symbolic interest), but people finally engage in play because they enjoy it. Therefore they are ready to practice and repeat. Sometimes "the play of the game is an end in itself" (Salen & Zimmerman, 2004).

2.4 Play Functions

2.4.1 Play and development

A variety of disciplines have acknowledged and studied the importance of play in the life of a child, and there is considerable evidence that playful behaviour is critical for the

development of the young (Ellis, 1972; Lancy, 1996). Cultures and societies have different values and beliefs about how children are raised and nurtured; forms of play thus vary considerably (Hans, 1981; Sutton-Smith, 1997). In Western societies, which are primarily child-centred, parents usually take an active role in their offspring's development through play (Fig. 3). They organize, encourage, and participate in their child's play. Other cultures, such as that of the Kpelle-speaking people of West Africa, have no such tradition (Lancy, 1996). In these communities, according to Lancy, the children play "on the mother-ground" close to their parents. Their play consists primarily of observing and imitating adult work until they can take over some of the activities. This is similar to what Lave and Wenger (1991) describe as situated learning or legitimate peripheral participation. Learning and apprenticeship is a social process in which learners living with practitioners slowly reach full participation. "It is through the playing that society expresses its interpretation of life and the world," Huizinga writes (1970, p. 46). Learning through imitation of adults is a risk-free activity safe from external constraints of actual life (Avedon & Sutton-Smith 1979; Caillois, 1961; Sutton-Smith, 1997). Learning for life includes play to gain knowledge and sharpen the mind. Knowledge is power, and games like riddles, rhyme-making, and answering challenging questions are perenially popular with both children and adults.

Figure 3 Participating in children's play

© *Participating in children's play. Boskic, N. 1998.*

2.4.2 Play and contest / play and war

Decker (1992) argues that the oldest sources for sport history come from Egypt. He explains the meaning of the Egyptian word for hunting as "to amuse oneself" (p.2), or more literally, "to have the heart forget" (p. 2), which returns to the idea of illusion (in + ludere = in play) mentioned above. When hunting ceased to be essential for preservation of life, it became sport or competition. Many contemporary sports teams have names such as the Lions, Grizzlies, or Sharks (Golden, 1998). Golden sees victory wreaths as reminiscent of camouflage for hunting, just as a sportsman's habit of putting oil or dust on his body evokes the masking of a hunter's smell.

Play is a stage for competition, glory, manliness, warfare, and resistance (Sutton-Smith, 1997). Social conflict can be mediated by play (Huizinga 1970; Sutton-Smith, 1997). Huizinga asserts that play is an orderly and rule-governed affair in which the good will triumph. Mihail Spariosu (1989) criticized Huizinga's platonistic view that if order is followed contestive play will honour excellence and perfection. Spariosu finds the

exclusion of disordered games of chance, in which the indeterminate interaction of forces rules, to be one of the main weaknesses of Huizinga's theory. Sutton-Smith, on the other hand, points out that even games of chance such as the lottery are organized and not chaotic. Huizinga places more emphasis on the positive, rather than negative, aspects of competitive games. Avedon and Sutton-Smith (1979) claim that "war games are exercises in physical skill and strategy" (p. 271). Decker (1992) concurs, noting that "there is a close connection between sports and warfare" (p. 107).

Researchers describing sports and contestive games in ancient Egypt (Decker, 1992), ancient Greece (Golden. 1998), or the Middle Ages (Carter, 1988, 1992), agree that these activities are and were strongly class-determined. Those with time for leisure who could engage in sports and games were usually members of the upper class, the elite. In Greece, for example, Golden explains that foreigners and slaves were forbidden "to oil themselves (as Greek athletes did), let alone compete in Athenian palaestras" (1998, p. 3). The Greeks participated in Panhellenic games, while non-Greeks and slaves could only take part in local games. It was unimaginable for a poorer athlete to take part in classical competitions or for a Greek athlete to lose to a social inferior. Similarly, as the head of society the king of Egypt could never lose a game (Decker, 1992). In the Middle Ages, class differentiation prescribed separate roles of warfare for the three orders of medieval society: "The knights fought the wars, the clergy attempted to regulate war […] and the peasantry supported the other two orders in their martial activities" (Carter, 1992, p. 29). While the knights as warrior elite practiced their skills in mock combat at tournaments, the peasantry engaged in different ludic activities. Carter divides those ludic activities into two categories: humans struggling against the natural environment;

humans struggling against other humans. In this period, play's function as contest or war was reserved exclusively for men. Women generally did not take part in competitive sports.

Huizinga (1970) states that there is no material interest in play; no profit can be gained by it. To accept this is to exclude games such as the lottery or gambling (Caillois, 1961). Nor does this approach accommodate professional sports. Huizinga appears to contradict himself by saying that "every game has its stake" and that "it can be of material or symbolical value" (p. 50). Champion athletes in Greece were highly respected. Poems of praise were written for them. For some, their athletic engagement gave them an identity, such as "Timositheus, the runner" (Golden, 1998, p. 158). Parents would readily invest in a son's athletic training. In medieval times, minstrels and heralds spread news of knights who were victorious in tournaments (Carter, 1992). In contemporary society, successful sportsmen are respected and rewarded for their play. Athletes in some sports are among the most highly paid professionals.

Contestive conduct is also observable in politics (Decker, 1992; Huizinga, 1970; Sutton-Smith, 1997) with the competitive spirit most dominant during elections (Caillois, 1961). We can identify the overlap of two categories, *agon* and *alea*, in political systems such as constitutional monarchies. Chance is 'in play' when the population respects inheritance (i.e., the royal family), but also votes for political party representatives based on merit. These two categories, competition and chance, can be contradictory, but they can also be complementary (Caillois, 1961).

2.4.3 Play and religion / play and myth

Huizinga (1970) believes that the question of play's essence leads us to the problem of the nature and origin of religious concepts. When people became conscious of their mortality, they created narratives in the form of myths and religious stories to manage their anxiety (Armstrong, 2006). In Australian aboriginal culture, *dreaming* is a term used to denote a multidimensional concept that recognizes the interdependence of all parts of the cosmos (Bodley, 1996). It sees the world as timeless and unchangeable. In some cultures, the stages of life are marked by rites of passage to symbolically announce important points of change. Rites of passage are religious rituals (Crapo, 1993; Mushengyezi, 2003). Armstrong compares them with the journey of the shaman, the process of death and rebirth, and departing from childhood to enter the world of adulthood.

Crapo (1993) argues that religion is a major force in the maintenance of social order. It reinforces the place of individuals in the community, society, and universe. Individuals each have a role to play. If they fail or refuse, they risk personal distress or rejection from society. The role, or "knowing your place," is important in all societies. In some – India, for example – social status in the form of castes is highly distinctive and hierarchical, with clearly defined rules of separation and distribution of labour (Bodley, 1996). In contemporary times this social grouping has been transferred to virtual realities, where the convention of guilds and other communities allows specific privileges for members.

Religion supports a belief in supernatural powers and necessitates rituals to influence those powers. It gives answers to universal, existential human questions: who we are, where we come from, what our purpose is. Therefore religion and its rituals, as Crapo

(1993) points out, provides guidelines, shapes beliefs, and offers comfort in moments of stress, anxiety, and fear. Persons such as shamans, believed to control supernatural powers or speak with supernatural beings, are highly respected. They frequently contact the spirit world or communicate with the spirits when in a special state of trance. They willingly subject themselves to alternate states of consciousness in which they detach from reality.

Armstrong (2006) is of the opinion that the period from the 16th century, and notably the 19th and 20th centuries, marks the "death of mythology" (p. 119). Western civilization, she asserts, favours technological and scientific experts rather than those inspired by myth. Spiritual and religious views of the world have been replaced by a scientific view of history and environment. Armstrong cautions that pragmatic and logical thinking is not sufficient for mental well-being:

> We need myths that help us to realize the importance of compassion, which is not always regarded as sufficiently productive or efficient in our pragmatic, rational world. We need myths that help us to create a spiritual attitude, to see beyond our immediate requirements, and enable us to experience a transcendent value that challenges our solipsistic selfishness. (2006, p. 136)

One avenue through which educators and researchers can address the development of empathy and other challenging social issues is games, especially those termed *serious games* which use contemporary social media. Some anthropologists identify technology as having the power to instigate cultural movements (Crapo, 1993). Indeed, these games offer innovative, promising approaches to promoting positive sociopolitical change.

2.4.4 Play and literature / play and art

The connections between literature and play are diverse and abundant (Sutton-Smith, 1997). All forms of art, literature, music, and play incorporate make-believe, letting us explore possibilities and not uncommonly leading us to new discoveries and inventions (Armstrong, 2006). If as adults we do not play the same games we did as children, we continue "playing" through art and creative projects in which we hope to find truth and meaning. This play is "liberated from the constraints of reason and logic" (Armstrong, 2006, p. 9) and free of risks "associated with real-world decision making" (Thomas & Brown, 2007, p. 163). The world of the novel, Armstrong points out, is compelling; it "breaks down barriers of space and time and extends our sympathies, so that we are able to empathise with other lives and sorrows" (2006, p. 147). An experience out of ordinary life, just as Huizinga (1970) described play being, it teaches us to see the world from other perspectives. For Crapo (1993), art is a part of a socially-constructed reality.

Play function in literature is closely related to its connection to language. Bakhtin (1981) sees the history of the novel as an endless dialectic play within the human imagination. Similarly, Derrida (2007) finds that every language contains a multiplicity of meanings. Sutton-Smith (1997) explains the diverse ambiguities of plays through rhetoric. Oriard (1991) looks into metaphors used in the discussion of play and games in American history. Huizinga (1970), Sutton-Smith (1997), and Thomas and Brown (2007) also emphasize the importance of the metaphors people use when talking about play.

Theatrical performances and dramatic interpretations are part of mimicry (simulation) (Caillois, 1961). In English language the word "play" is used to denote a dramatic work for the stage. A good actor will lure spectators into a *magic circle* (a term coined by

Huizinga (1970) and later elaborated on by Salen and Zimmerman, 2004), keeping their experience in the world of fantasy. The spectators, for their part, willingly suspend disbelief, agreeing to succumb to the illusion of reality (Caillois, 1961). In theatre, as in festivals and dance, play becomes an aesthetic performance (Sutton-Smith, 1997) (Fig. 4).

Figure 4 Dancers

© Dancers. Boskic, N. 2008.

2.5 Contemporary Western Settings: Games Manifestations

World War I and World War II were more than "a state of […] armed hostile conflict between states or nations" (Merriam-Webster, 2009). The idea of stability and progress dominant before the wars was replaced by confusion, uncertainty, and new mysteries surrounding human nature and mental awareness and the possibilities of technology. Through their fiction, James Joyce and Virginia Woolf offered a new narrative mode called stream of consciousness. Vannevar Bush (1945) wrote in "As We May Think"

about a new electromechanical device, memex, that would help us read a large research library following an associative trail of links.

The complexity of human consciousness was reflected in the complexity of the outer world. With the unexpectedly fast evolution of technology and technical devices in the second half of the 20th century, humans confronted new difficulties understanding technologies and their effects. New ideas about human thought, its multilayered nature, its dynamics, and its ability to cross boundaries of time and space found resonance in new technological inventions such as the microwave, the pacemaker, the credit card, optic fibres, the computer, the laser, the videocassette, the cell phone, and so on. Each of these technologies poses more questions about the way we learn, cope with everyday reality, and live together. In discussing this period, Janet Murray (2003) notes that "all creativity can be understood as taking in the world as a problem" and calls for "more powerful methods of mastering complexity" (p. 4). Learning how to use specific technologies proved especially problematic. Hardly would one novelty be adopted when a new interface appeared requiring different knowledge and skills. Computers, globalization of information, and 'life online' rapidly became part of everyday existence.

Murray (2003) sees computer technology as a medium that has brought engineers and social humanity workers together. Alongside Sutton-Smith's (1997) approach to studying games, Murray (2003) believes in the necessity of a multidisciplinary perspective, claiming that "new *multimedia* games became intentionally interdisciplinary" (p. 10). In their introduction to *Rethinking Media Change*, Thorburn and Jenkins (2003) point out the benefits of media change and the introduction of new technologies. These technologies promote a time of reflection and reassessment. Since

the natural tendency is to apply the same practice from old to new, to imitate what we are familiar with (i.e., *remediation*) (Bolter, 2001; Bolter & Grusin, 1999a), authors invite us to re-examine new forms and discover the unique qualities and potential that emerges. Technologies change the way we do things—and the way we think (Turkle, 2004).

Humans and machines have become so connected and interdependent that theorists and scholars see the period of the emerging digital environment as initiating a "post-human" era. They raise the question of what it means to be human (Calleja & Schwager, 2004; Haraway, 2004; Hayles, 2002, 2004, 2006). Hayles (2004) draws attention to the tight connection between human and machine, claiming that they cannot be separated, that "the subject has been fused with the technology" (p. 295).

2.6 Digital Environments

The digital environment in its early stage was primarily textual and very linear, imitating print technology. In the last decades of the 20th century, however, it emerged as hypertextual, multimodal, multimedial, and highly visual, with the capacity to process increasingly large amounts of data. Writing and storytelling had always been a multimodal activity (Page, 2008). However, technology has turned our attention to the relationships and influences of different modalities on one another. Every semiotic mode carries a particular kind of meaning, and careful consideration is necessary when creating and analyzing a multimodal environment or presenting ethnographic evidence in multimodal ways (Dicks, Soyinka & Coffey, 2006).

Hypertextuality enabled easy and rapid searches and increased mobility through virtual space. Information became first accessible and then shareable with millions of other

cyberspace inhabitants. Basic digital literacy has become a part of culture. Beyond the use of computers for retrieving and acquiring knowledge, the digital environment has become a space for the collective generation and management of knowledge. Tools enable easy dissemination of ideas. Publishing information, communication with others, and the creation of communities of like-minded individuals are among the Web's main functions. Knowledge is not centralized. The continuously exchanged information and knowledge is not easily controlled or managed (Lévy, 2001; Robins, 1999). Global networks have started to create a collective awareness (Lévy, 2001, 2005; McLuhan, 1998), bringing people together in the "network's hypercortex" (Lévy, 2005, p. 197).

One of the major qualities of the World Wide Web is its constant dynamism and flux (Robins, 1999). It has been seen as a work of art, never finished, capable of continual alteration by its creator or by another (Lévy, 2005). Boundaries blur between actual and imaginary, physical and virtual, work and play (Castronova 2005; Thomas & Brown, 2007). Reality is produced by the collective imagination (Lévy, 2005). The question thus arises: what are the significant developments in gameworlds? Salen and Zimmerman (2004) argue that there is no difference in the qualities that define a game from one medium to another. However, some properties unique to digital games need to be identified and have their value acknowledged.

Technology has also had an impact on how and what games children and adults play. Educator and linguist James Paul Gee (2007) argues that games offer benefits in learning and are underused in formal educational settings. Game and virtual spaces, having a variety of semiotic modes, are informal educational settings that foster learning (Gee, 2004, 2005). Language is only one of many modes of communication (Gee, 2006).

Participation can therefore increase because of the equal opportunity for expression and more choices of how to do so (by words, drawings, images, or action).

The use of images and video representations has become a dominant semiotic mode in digital space; it is one of the major elements of design in gaming environments. Every system of signs, verbal or visual, relies on recognition; to a large extent, it also relies on interpretation (Eco, 1976). Meaning resides in other modes of communication: visual, aural, behavioural. Semiotics is not limited to verbal language (Hodge & Kress, 1988). Visual language abilities develop prior to, and serve as the foundation for, verbal language development. Memory for pictures is superior to memory for words (Kress, 2003). Furthermore, visual communication depends not only on the *content* of an image but on colours, spatial relationships, incidences of light, and medium (Eco, 1976). Kress (2003) also compares visual and verbal representation of content, but he does not see the two modes being in constant competition and rivalry as Bolter (2001) does, who says

> Printed books, magazines, and newspapers are changing typographically and visually by incorporating more elaborate graphics, while at the same time prose is attempting to remake itself in order to reflect and rival the cultural power of the image. (p. 49)

Kress (2000) questions the full communicative role of images or any single semiotic mode. Messaris (1994) states that "there are good reasons to believe in a substantial degree of cross-cultural similarity in basic visual syntax" (p. 172), but there also may be exceptions to this principle in cultural and social perception.

The question of universal language is often raised among theorists. It would be presumptuous to claim that visual language can be universal (misinterpretation of images is possible without sufficient contextual background). However, video and computer games, which are mostly visual, are extremely popular and played by people of highly diverse backgrounds. In asking why, we may explore whether game designers target emotions or basic instincts beyond language or other rational forms of communication. What is the level of purposeful creation of visual imagery aimed at eliciting reactions of fear, loss, pleasure, or danger?

The ability to follow the flow of information or narratives presented through different modalities and to make sense of them is one of the most important social skills a learner should acquire (Jenkins, 2006). Through what Jenkins terms "transmedia navigation," inhabitants must learn how to navigate the environment, understand the value of each representational modality, and use that knowledge to construct their surroundings. Khetrapal believes that the "simultaneous presentation of information in different modalities helps in developing understanding about the problem situation in any domain" (2010, p. 190). Gameworlds can be seen as literacy environments in which players produce meaning in a variety of semiotic domains (Steinkuehler, 2007). Gamers must continually read and write multiple threads of communication, icons, symbols, gestures, pictorial representations, texts, or maps, and react quickly, adjusting their behaviour to instantly changing conditions.

Computational machines enable digital games to offer instant feedback and to adapt accordingly (Salen & Zimmerman, 2004). Each time a player acts differently in a situation, the system responds to it. Most operations are automated, and a game may

sometimes continue without much input from a player. When a player logs off, the game continues; the world is still "alive" (Thompson & Brown, 2007, p. 151). Over time, the player's engagement with a gameworld has transformed from interpretative to configurative (Eskelinen, 2001; Moulthrop, 2004): that is, the gamer simultaneously plays a game and changes its "temporal, spatial, causal and functional relations and properties" (Eskelinen, 2001). In his article, "The Gaming Situation," Eskelinen compares static/dynamic relations in various games in terms of space, time, characters, and the progression of the game.

In some games, particularly Massively Multiplayer Online Role Playing Games (MMORPGs), a network of other players is important for the game's progress. Communication is relevant since players do not play alone, especially if they seek to advance to another level. They need to collaborate with other players and use each other's skills and faculties. Communication takes place through email, text chat, or real-time video or audio conference. Communication happens between players regardless of their physical location (Salen & Zimmerman, 2004). MMORPGs and virtual worlds create a "situated understanding" (Thomas & Brown, 2007, p. 154) which forces players to react and adjust to new conditions on the spot.

Lévy (2000, 2005) and Tapscott (1998) speak of collective intelligence as a source of power. New media forms have facilitated new kinds of authority and ownership. Players frequently engage in collaborative practices either to solve a problem or to "survive," negotiating the rules, authorships, and relationships they wish to establish. People are increasingly working together, collaborating on content, and socially producing meaning (Gee, 2003; Jenkins, 2006; Tapscott & Williams, 2006). Some theorists believe that the

role of the individual is diminishing through virtual death. Hayles (2003) describes such work as "assemblage," starting with the individual who creates a code for hardware but ultimately produced by many. She writes, "everything is simultaneously a translation of everything else, each united to the others in a rhizomatic network without a clear beginning or end" (p. 284). In order to survive in a virtual world, that world's inhabitants must develop skills for collaborative work and build their capacity to network.

Cyberspace, according to Robins (1999), has lost touch with the world's reality. Users can present themselves as someone else, using a pseudonym or avatar (Page, 2008). This representation could be actual or completely imaginative, even gender switching. Players of online role-playing games in virtual worlds create their realities (Lévy, 2005) (Fig. 5).

Figure 5 A virtual world

© A virtual world. Boskic, N. 2009.

A number of researchers of new media have drawn attention to the role and transformation of the body in virtual environments. Computers are becoming our closest companions; we are becoming part of them (Haraway, 2003; Ronell, 1989; Turkle, 2004). A new sense of identity as de-centered and multiple is thus emerging (Turkle, 1995). In

her book, *Life on the Screen*, Turkle suggests that computers are causing us to reevaluate our identities in the age of the Internet. We engage in new ways of thinking about evolution, relationships, politics, sex, and the self. Inherent in this argument is the need to explore the self and make sense of our own embodiment and materiality in the new space. Gee (2003) states that by creating new identities, participants achieve a better understanding of themselves and their role in society. Through our different identities we project our ideologies, beliefs, and political standpoints. In *Growing up Digital*, Tapscott (1998) asserts the benefits of embracing the potential for adopting various identities. Stone (1992), however, cautions against over-enthusiasm:

> Their participants have learned to delegate their agency to body-representatives that exist in an imaginary space contiguously with representatives of other individuals. They have become accustomed to what might be called lucid dreaming. (p. 94)

In order to navigate the space, residents of virtual worlds often create "avatars," other selves. A question arises over aesthetics: how do we perceive *beauty* when surrounded by fictional bodies and fictional reality? New conditions and changed concepts call for a reexamination of the principles of aesthetics—not only the aesthetic of the product but of the process, wherein visual manipulation is not an exception but a requirement.

On the one hand, the constant growth of the game industry forces game designers and developers to find new ways to improve, creating more believable characters and more state-of-the-art, lifelike animated environments which attempt to approach the actual as closely as possible. Images need to be of movie quality, environments lifelike, and reactions of characters and objects equivalent to those in the actual world (Wong, 2006).

According to Castronova (2005), typical users spend about 20-30 hours per week inside a virtual world. Some of them reported feeling that Earth was just a place to sleep and eat; 'real life' was happening in their fantasy spaces.

On the other hand, different kinds of games have begun to emerge: so-called Alternate Reality Games (ARGs) which Bogost and Poremba (2008) call "documentary digital games." In these games, real people reconstruct an historical moment or place themselves in the possibilities of the future. Lieberman (2007) calls ARGs off-the-screen games where "people interact with each other and the drama unfolds in the real world." The game players may act as themselves or as imaginary characters. But the question remains: what is actual in these "synthetic worlds" (Castronova, 2005)?

2.7 Game Genres

Games have appeared on a variety of platforms. While children continue to play with their toys or play hide-and-seek, they have added many electronic devices to their repertoires. In addition to arcade games (e.g., "Pac-man," "Street Fighter"), newer formats have been developed:

a) consoles such as Sega (e.g. "Super Mario"), Sony Play Station (e.g. "Need for Speed"), Nintendo Wii or Xbox (e.g. "Helo");
b) handheld devices such as Nintendo Game Boy (e.g. "Zelda," "Tetris") PSP (e.g. "Medal of Honour");
c) computers (e.g. "Counter Strike," "World of Warcraft"); and more recently
d) iPhones, and PDAs.

The demographic of games has necessarily changed. According to the Entertainment Software Association's (ESA) 2008 consumer survey, 65% of American households play computer or video games. The average game player's age is 35 (49% are 18-49). Twenty-six percent of gamers are over the age of 50, and 40% of all gamers are female. Even though this survey covers only American households, the information about gaming demographics is important to the industry. The same survey shows a continuous increase in video and computer game sales from 2.6 billion in 1996 to 9.5 billion in 2007. The most advanced graphic capabilities are developed for games, and every new software improvement requires players to upgrade their machines (Rapoza, 2006). Some gamers end up with a collection of different machines and devices (Fig. 6).

Figure 6 An ode to gaming

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Video and computer games can be categorized in a number of different ways. One way is to look at the platforms used: arcade games (played on a coin-operated entertainment machine), console games (played on a specialized electronic device such as Nintendo or PlayStation which connects to a standard television set or video monitor), games played

on handheld devices (cell-phone, PDA, PlayStation Portable, GameBoy), and computer games played either on a local machine or online. Some theorists divide games by their availability as free, shareable, or licensed. Other ways involve: determining whether players act as themselves, choose offered characters, or create their own avatar (new identity); whether games are designed to offer a first-person perspective (for example, in shooting games where a player can see only a gun in "his hand"), second-person perspective (the system addresses a player directly), or third-person (a player can see his/her character or avatar).

Most frequently, games are grouped by the types of challenges players face. Bateman and Boon (2006) distinguish the following categories: action games (including shooters, platform games, fighting games, racing, survival horror), quests (adventure, role-playing games), strategy games, simulations (sports, life sims) and miscellaneous games (puzzles, traditional games, party games). The list is certainly not exhaustive. As Chris Crawford (1996) states, the field is growing so quickly that any taxonomy developed to organize games quickly becomes outdated and requires redefinition (Table 1).

It is difficult to distinguish game genres and game types. The definition of virtual worlds made by the New Media Consortium (NMC) in their 2007 report (Johnson, Levine, & Smith, 2007) is that virtual worlds are three-dimensional environments and highly immersive social spaces. Virtual worlds provide opportunities for socializing and community building, engaging in dialogue, and sharing digital media content.

While "World of Warcraft," for example, is typically referred to as an MMORPG it is a virtual world as well; players meet online in virtual space and play together. The report's

definition, however, better describes spaces such as “Second Life” which are currently inhabited by millions of players worldwide. Virtual worlds frequently have numerous players interacting simultaneously, but they are not goal-oriented in the same sense as other games. There is no score for a successful win, and no *game over* in a virtual world – it is up to a player to enter or exit. Very often the virtual worlds remain live and continue to change even when the computer is turned off.

Table 1 Categorization of games

Categorization of games by				
Platform	Arcade games (played on a coin-operated machine)	Console games (played on a specialized electronic device that connects to a standard television set or video monitor)	Games for handheld devices (played on cell phone, PDA, GameBoy or other portable device)	Computer games (played either on a local machine or online)
Example:	"Pong," "Pinball"	"Street Fighter," "Mortal Combat"	"Tetris," "Mario Brothers"	
Availability	Free	Shareable	Licensed	
Example:	"Bubble Trouble"	"Dance Dance Revolution"	World of Warcraft (WoW)	
Player representation	Act as themselves	Choose offered characters	Create their own avatar	
Example:	ARGs	"WoW," "Need for Speed"	"Second Life," "Spore"	
Perspective	1st person (such as shooting games where the player can see only a gun in his hand)	2nd person (the system addresses the player directly)	3rd person (the player can see his or her character in the game space)	
Example:	"Doom," "Quake"	"Tetris"	"Second Life," "WoW"	
Type of challenge players face, from Bateman and Boon (2006)	Action games (shooters, platform games, racing, etc.)	Quests (adventure, role-play)	Strategy games, simulations	miscellaneous games
Example:	"Grand Theft Auto," "Counterstrike"	"AdventureQuest," "Spore"	"Gettysburg," "Blue Max"	puzzles, traditional games, party games
Hybrid	MMORPGs	Virtual Worlds	Alternate Reality Games	Games for social change

According to the same 2008 report by the Entertainment Software Association (ESA), adult gamers have played computer or video games for an average of 13 years. The most frequently played games include not only First Person Shooter (FPS) games and various simulations or Massively Multiplayer Online Role Playing Games (MMORPGs), but the so-called serious games often played in virtual worlds.

Calleja (2006) claims that virtual worlds cannot be properly studied without examining their social aspect. Many scholars conclude that virtual worlds, because they are social, stimulate creativity and provide an immersive, engaging, and active space in which participants may explore the tension between fiction and reality (Ohler, 2006; Schaafsma, 1989). Bartle (2004), in fact, completely separates virtual worlds from games. He argues that although people can play games in them, they are primarily venues.

The term *serious games*, which is often associated with virtual worlds, may appear to be an oxymoron. According to many theorists, games are by definition fun—a term to which seriousness is opposed. Castronova (2005) says that games should not be serious as this defeats their purpose. Yet serious games are gaining in popularity and variety. As their name suggests, they address serious world issues: poverty, hunger, war, environmental problems, energy crises, global warming, health, and crime. Many games designers have taken up the challenge to create a game that will bring about social change.

Alternate Reality Games are usually thought to be a subset of serious games, though they can also belong to quest or mystery types of games. They are a relatively new genre that encourage participants to interact with each other in real-time using the Internet, phone,

forums, blogs, and other social software such as Facebook or Twitter. They often have a common goal: to solve a problem, imaginary or actual. The designers of ARGs are known as "puppetmasters." One of their primary tasks is to release a narrative in fragments and to invite response from players, forcing them to work together and solve numerous puzzles (Miller, 2004; Szulborski, 2005).

The first ARG is thought to be "The Beast," a game developed by Microsoft and DreamWorks in 2001 to promote Steven Spielberg's movie "A.I." ("Artificial Intelligence"). One of the ideas behind the game design was to make it as realistic as possible without admitting its essential identity as a game. The TINAG (This Is Not A Game) philosophy later became a main principle of ARGs. (Szulborski, 2005). "The Beast" generated a group of more than 10,000 players or fans (Szulborski, 2005) who collectively took the name of "Cloudmakers." The still-active Yahoo group forum has over 6,700 members. Not all ARGs follow the TINAG principle. The game "Majestic," which announced itself as a game before it was launched, won the Best Original Game Award in 2001. Combining fictional elements with actual life assets sometimes occurs: for example, an Amazon account for a character in the game "Exocog" (Brown, 2001; Szulborski, 2005).

All ARGs are immersive, i. e. involving players so deeply that the border between actual and fictional is blurred. Titles include"Chasing the Wish," "Urban Hunt," "Perplex City," "I Love Bees," "Ocular Effect," "World Without Oil," "Find The Lost Ring," and "The Truth About Marika." They use a vast array of assets, from photos, movie clips, web sites, blogs, emails, phone calls, audio recordings, and TV shows to physical artifacts. These assets are often created by players, not just designers. Many newer games

incorporate mobile technology as well, such as "The Hidden Park" (Alhadeff, 2009b), an ARG for children.

Jane McGonigal (2008) calls the imaginary world of ARGs a *sandbox* in which all players play together, but not necessarily in the same way. McGonigal finds that different approaches to the games makes them very powerful. She says,

> I certainly don't think it's the Puppet Masters' job to define a single approach to the game, or to try to prevent different kinds of gamers from proposing unique paths through the game. When their path twists and intertwines with your path, that's when minds get expanded, when individuals get amplified, when things get interesting, when powerful new combinations of personal strengths emerge. (2008)

ARGs are usually short in duration, lasting several hours to several days or weeks. Some of McGonigal's games lasted only a day or a weekend. Her project "Cryptozoo" was played in New York and other cities during the summer of 2009. Participants were invited to follow mysterious tracks through the city and chase *cryptids*, strange but lovable creatures in masks. The goal of the game was to make players active participants who worked together to find clues and have fun. Many ARG designers create games that tackle issues in actual life. The game "Operation: Sleeper Cell," which won the "Let's Change the Game" competition in 2008, was designed to raise money for cancer research in the United Kingdom.

Based on this brief overview of old and emerging game genres, when theorizing games for education the following apply:

1. Computer games cannot be dismissed as 'lazy entertainment' as they have been in the past (Crowe & Bradford, 2006, p. 332). De Castell, Jenson, and Taylor, claim that "play has been a critically under appreciated resource for learning" (2007, p. 597). Post-modernism has broken the binary of work/play (Jagodzinski, 2007). We are not, however, at the point where most educators accept creative play as a pedagogically-sound method of teaching.

2. Computer games are social spaces. Learning is situated in action – it is social. An interactive networked culture is enabling new forms of learning. It is achieved through active participation in the process and through collaboration with others.

3. Computer games possess possibilities other media or genres do not. Playing is intrinsically enjoyable (Murray, 2006), and therefore might help achieve different goals, from learning new skills and competencies to making positive world-wide changes in actual life.

2.8 Conclusion

Games reflect the values and beliefs of the culture in which they are played. Through games and the rhetoric surrounding them, it is possible to understand the customs and ideologies of a certain part of society at a particular historical moment and location. Children and adults play because they feel drawn into a game, and because it is fun. Games were long considered mere entertainment with no connection to serious activity or work. Although games have always been used for learning, they have not previously been seen as an accepted teaching approach in formal education contexts. The explosion of video and computer games, in terms of both quantity and the high level of skills and

competences required from players, has encouraged educators to consider their learning potential.

Some researchers are wary of the negative aspects of playing games; the concerns they raise remain a topic of ongoing debate. Holmes (2005) argues that the social context in which today's MMORPGs are played is "artificial in both its nature and its participants" (p. 108). Juul (2005) expresses his uncertainty about games' capacity for dealing with themes like love and social conflict.

Categorizing video game genres is not an easy task when the difficulty of defining what exactly constitutes a genre is considered. It may be overstatement to say that every game theorist, game designer, or game player has his own classification, but the variety of approaches is certainly numerous. Many games are not limited to a single genre; some combine two or more game types. As gaming evolves, in fact, lines between genres blur more frequently than not, especially with online multiplayer games. While the future direction of game development is uncertain, it is clear that play has significant implications for the ways we think and work, as individuals and as a collective.

Chapter 3: Games for Learning in Digital Environments

3.1 Introduction

Numerous studies address the importance of games for children's cognitive and social development. The more recent debate, emerging with the spread of video games, concerns their role in formal education. What is the place of games in education or education in games? Before responding to this question, we should first examine how contemporary game culture adds to the complexity of the study of serious games.

3.2 Games in Education: A Different Classroom

While a number of theorists believe that games should be kept strictly within the boundaries of entertainment, the evolution of games and the expansion of their possibilities suggests otherwise. The question of whether games should be used for learning and whether there is anything teachable in them is obsolete.

Play is often used as a reinforcement technique in education (Sutton-Smith, 1997). Most researchers today agree that learning does take place in play (Castonova, 2007; Gee, 2003, 2007; Jagodzinski, 2006; Prensky, 2006), and that games undoubtedly have the power to teach (Branston, 2006). The problem is not whether they should be seen as useful in education but in identifying the elements of game design that contribute most to student success. Branston supports using games for learning, but only if the educational goals are somehow hidden from the players, concealing potential for a learning outcome and pretending the game is "only for fun." Branston is not alone in the attempt to reconcile fun and learning. DiSalvo, Crowley and Norwood (2008) agree, arguing that a game should not appear to be educational. This argument may be seen as troublesome and even fallacious in that it advocates an expedient, morally-questionable approach to

teaching: while pedagogical objectives may be met, students will also learn that expediency and sophistry are an appropriate means to an end.

Games can and should be used for education (de Castell, et al., 2007). Castronova goes even further, claiming that "synthetic worlds are methodologically superior teaching and training tools" (2005, p. 252) because they are immersive. According to his view, school systems are not as engaging as virtual worlds. Students require different kinds of education. This view is sustainable only if the term 'immersive' is narrowly construed to mean participation in events happening exclusively online with no connection to reality. Many other activities, either online or offline, may be equally if not more immersive and engaging for students, and may offer students an opportunity to experience what Csikszentmihalyi (1990) calls "flow."

Nevertheless, many researchers believe that virtual environments make the learning experience more interactive (Inoue, 2007; Sheehy, Ferguson, & Clough, 2007). Hodge, Tabrizi, Farwell, and Wuensch (2007) conducted research on student learning in the virtual reality classroom. They assert that they were "imitating the traditional on-campus space and improving upon it" (2007, p. 106). Jennings and Collins (2007) state that "within four years, 80 percent of active Internet users will participate in virtual worlds" (p. 185).

Kupperman, Stanzler, Fahy, and Hapgood, (2007) compare student attitudes towards school and games, beginning with the premise that games are a voluntary attempt to overcome obstacles not common in the practical world. The connection between schoolwork and what it can lead to in the future is weak and difficult to project, they

claim; schoolwork is an "involuntary attempt to overcome unnecessary obstacles." Kupperman et al. argue for developing a "lusory attitude" (a term borrowed from Suits [1978]) in students which will make schoolwork more like a game and increase student engagement, interest, and participation in consequence. Their project, "Place Out Of Time" (POOT), is described as an example of how to interest students in learning about history or historical characters, law, and writing. Students took on a role or a character in a court trial and, according to the findings of Kupperman et al., these role-playing activities enabled them to "write with a greater sense of self than if they were writing in their own voice" (2007, p. 163). What helped players overcome the barriers to literacy, they assert, was the "trick of mattering-yet-not-mattering" (2007, p. 166): what they wrote in the game was important to the students because of the audience and their engagement in the outcome, but at the same time, as they were portraying another person it didn't matter .

3.3 Designing for Learning

Well-designed computer and video games have good principles of learning built into them. Gee (2007) lists thirteen, the majority of which incorporate a possibility for creating new opportunities for knowledge gain through interaction with others. The quality of interaction depends on the relationship between the player's choices and the system's response (Salen & Zimmerman, 2004). The more possibilities there are for the player, the higher the uncertainty of the outcome and the greater the tension. Careful design of the experience is critical to the participant's engagement. Salen and Zimmerman (2004) view a well-designed game as one with a simple set of rules and a limited set of objects whose combination leads to unpredictable results. Caillois (1961)

believes that if an outcome is known in advance there will be no game. It is against the nature of play. Games are complex systems; through the realization of their autopoiesis, they keep the players constantly engaged. As Aarseth says, "a typical adventure game is not mastered by being "read" once but by being played over and over, the way we reread a great and complex novel" (1997, p. 114). Gee (2007) wonders why these principles have not been applied in schools and learning environments.

3.3.1 Agency

The concept of agency conventionally refers to the ways in which people make things happen or influence events through the exercise of personal control. Agency involves intentionality: "it is not just a matter of expecting or predicting future events, but also of intervening proactively in order to bring them about" (Carr, Buckingham, Burn, & Schott, 2006, p.139).

Virtual worlds offer a context for agency. Mateas (2004) defines agency as the "feeling of empowerment that comes from being able to take actions in the world whose effects relate to the player's intention" (p. 21). Such agency is expressed more overtly in playing than reading. Reading allows for different interpretations by the reader, but playing requires configuration of the activity (Aarseth, 2004; Eskelinen, 2004; Moulthrop, 2004). The player is able to manipulate complex systems, adding to his or her motivation.

De Castell et al. (2007) claim that there has been a shift from reception-oriented to production-based approaches in game design. They state that agency is also adaptable. If initial intentions in a gameworld are not met because of unpredictable events, the player may reconsider and revise those intentions using new information. For Galloway,

"modifying games is almost as natural as playing them" (2006, p. 112). "The player's intentions become a new source of formal causation" (Mateas, 2004, p. 24). In order for players to be immersed in gameworlds, they need to have agency (Mateas, 2004).

3.3.2 Identity

In a game players have different options of who to be and how to present themselves. The majority of MMORPGs require adopting an avatar. Some games have a pre-designed set in which players can modify only elements of appearance (clothes, armour, etc), but not character traits. Other game spaces, mainly virtual worlds, allow for free avatar creation, which means creating practically another self. Adopting a different identity is like wearing a mask which liberates the user from social constraints (Caillois, 1961). Players configure and re-configure their identity continually (Crowe & Bradford, 2006; Mackay, 2001). They build their social space and community and base actions on established relationships and rules of behaviour. The players create self-identities based on subjective perceptions of what is right or wrong, appealing or disagreeable, acceptable or not acceptable, and act regardless of social stratification in their actual worlds.

For some, the change in identity or beliefs in the virtual world is due to players' wishes to escape existing social structures (Aarseth, 1997). They look for utopic worlds. Castronova calls this "a rebellious act, an exit from ordinary life" (2005, p. 76). According to him, contemporary society has built cultural and emotional emptiness which gamers try to fill in gameworlds. "Those who feel alone or discriminated against *here* may feel connected and accepted *there*," Castronova writes (2005, p. 77, emphases in the original). Jagodzinski (2006, 2007) states that the avatar acts like an empty "I"

which can be occupied by anyone. It is present and existent only as long as it remains "alive," as long as it is in the game.

The gameworld characters offered to players are designed to interact with each other and with the imaginary environment (Mackay, 2001). The players choose their roles, and in doing so allow themselves to explore their emotional depth from the creative distance permitted by their roles. On the other hand, death in virtual worlds is not permanent – everyone can be born again. Taking a risk in a video game is not a life-threatening act but an endless exploration without consequences (Jagodzinski, 2006, 2007). There is no physical pain or risk; it is "the thrill without the danger" (Jagodzinski, 2006, p. 292).

"Synthetic worlds," as Castronova calls them, "are imaginary spaces where the players enhance their Earthly experiences" (2005, p. 26). Because of the possibilities for players to present themselves as different characters, a dialectic between individuality and multiplicity emerges (Maietti, 2008). This creation of"our distributed self" (Cutler, 1995, p. 22) can be very exciting and engaging, and it opens opportunities for self-discovery.

3.3.3 Interactions / social spaces

Virtual worlds and MMORPGs are social spaces (Carr et al., 2006; Castronova, 2005; Crowe & Bradford, 2006). Players cannot survive alone. They must rely on each other (Mackay, 2001). They collaborate to manage resources, fight the enemy, and overcome challenges. Playing against everyone leads to self-destruction.

Complex systems such as MMORPGs rely on prescribed content and programmable objects to support the social interactions that emerge. Players, unable to act solely on their own will, must follow a prescribed rulebook or sourcebook. Nevertheless, in this

process players create social relationships and a fantasy social space. Events occurring in gameworlds are the result of "constant mediation between the players and their immersion into the imaginary-entertainment environment" (Mackay, 2001, p. 37).

Evaluating and establishing "price" and "value" is not only metaphorical. In the worlds of games and virtual realities, economy blossoms. Players buy energy, tokens, and gear in fantasy worlds—and in the actual worlds as well. Price is not determined by world distribution but by the simple rule of demand and availability. Value is determined by the society of the fantasy world and has meaning only inside that space (Castronova, 2005).

Gameworlds have different status levels just as actual-world systems do. Being a member of a specific group/guild results in differentiated progression through the game and a different experience. Even though the behavour of virtual worlds members is partly defined by their traits or social status, it is more difficult to predict future actions and events in socially-constructed imaginary spaces than in actual life (Carr et al., 2006). Crowe and Bradford note that, "Virtual self is closer to the image of ourselves than the one we present (in the material world)" (2006 p. 336) because players are liberated from the constraints and expectations of social behaviour in actual life. In virtual worlds, people present themselves as they wish to be seen; and interactions in virtual environments can be different from or even opposite that which is considered acceptable in actual worlds. Gameplay is an intimate experience between the player and the virtual world, and opens up new possibilities for identity (Maietti, 2008).

As learning is a social activity, it – like game play – does not happen in isolation but in interaction with others (Holland, 1998). Through playing games, players learn better eye-hand coordination (Castronova, 2005); they also learn to solve problems together, to make quick decisions, to distribute knowledge and manage systems (Gee, 2007; Helm, 2005). Gameplay is an experience that is simultaneously kinaesthetic, functional, and cognitive (Aarseth, 2004). Learning occurs not through information assimilation but through participation in forms of social practice (de Castell et al., 2007). Because of the episodic nature of role-playing games, interactions enabled by the game setting in one episode remain consistent throughout, allowing the player to remember and improve.

3.3.4 Time and space

Games exist outside of actual time. Eskelinen (2004) looks at the ways in which time is expressed and experienced in games and narratives. In gameworlds, he asserts, we can distinguish between user time (when the player acts) and event time (happening in the game), or what Juul (2004) calls mapping. Eskelinen identifies six categories through which he explores the notion of time in games: order, frequency, speed, duration, simultaneity, and the time of action.

Narratives, on the other hand, have story time (the time of the event in the story) and discourse time (when the story is told). Narratives talk about something that has already happened; games and simulations talk about what may happen (Frasca, 2004). For Juul (2004), time in games is always chronological; the non-chronological presentation of events makes sense only in other media where everything has already occurred.

In games, flashbacks or foreshadowing can potentially ruin the play. If we see the future, what we do in the present has no meaning. The player can stop, speed up, slow down or repeat/restart a moment in video games. Despite this, game action is continuous, in contrast to cinema, for example, where there may be cuts, transitions, or montages (Galloway, 2006), or where events may not necessarily follow a chronological order. When someone plays a game, there is no editing. Similarly, books are not necessarily continuous. To Juul (2004), the ability to pause or save a game presents a manipulation of game time, and to Crawford (2003), this quality even presents a design flaw.

Games can be seen as architectural spaces, particularly because of their three-dimensionality (Jenkins, 2004). Jenkins says that "spatial stories are stories that respond to alternative aesthetic principles, privileging spatial exploration over plot development" (2004, p. 124). Despite the distance between the actual and imaginary worlds, actions in the actual can have effects in the virtual and vice versa (Castronova, 2005). Players can be both here and there at the same time.

3.3.5 Failure

Failure is part of game design (Jagodzinski, 2006). In a game such as"World of Warcraft" a player is transferred to another, progressively more difficult and challenging level as soon as he or she achieves a goal or reaches a certain point in the game. When failure occurs, it can potentially be as engaging as success (Jagodzinski, 2006; Juul, 2008a). Woods (2009) conducted an online survey of over 700 board-game players to explore their attachment to the outcomes of games in relation to player-to-player negotiation, drawing on Huizinga's (1970) idea of the magic circle. Woods' study confirms that social relationships and the building of self is of greater importance in

making “a voluntary attempt to overcome unnecessary obstacles” than achieving the goals of the game (i.e., winning).

In a study similar to Woods’, Juul (2008a) looked at what it means to lose a game. He found that there is more to failure than simply making the ultimate win enjoyable. Juul argues that “failure serves the deeper function of making players readjust their perception of a game” (2008a, p. 237). Based on the results of his study, he concludes that a game should be neither too easy nor too hard. The development of new skills, personal growth and learning through the process of trial-and-error is what Juul calls a “core attraction of video games” (2008a, p.250).

3.3.6 The magic circle

The player inhabits a fictional world (Maietti, 2008). Huizinga (1970) used the metaphor of a magic circle in his book, *Homo Ludens*, to describe a game-playing space wherein mutually-accepted rules determine model behaviour and delineate relationships between those who are *in* and those who are *out*. The term “magic circle” was later used by Salen and Zimmerman (2004) to clearly define the boundaries between actual and fictional worlds. The magic circle has since become a topic of debate and criticism.

In Juul’s (2008b. 2008c) analysis of different views on this topic, he claims that most theorists, such as Taylor (2007) or Copier (2005), actually agree with Huizinga (1970) or Salen and Zimmerman (2004) but present their argument as disagreement. These theorists all focus on the social aspect of gameworlds. Summarizing the variety of perspectives, Juul (2008b, 2008c) emphasizes two points: 1) that there is no clear separation between what is inside and what is outside the game; and 2) that boundaries

are constantly negotiated by the players. Arsenault and Perron theorize a situation "where it is necessary to break the circle, but only to get into the magic cycle" (2009, p. 129).

Game players talk about virtual worlds as if they were actual (Crowe & Bradford, 2006). They sometimes have to remind themselves of what is actual and what is not. Games are "self-contained worlds," a combination of "artificial intelligence and human-controlled beings" (Calleja, 2006, p. 129). Virtual and actual merge, especially in MMORPGs, and exist independently of users and programmers (Calleja, 2006).

Jagodzinski (2007) expands on Juul's (2008b) argument, claiming that virtual and actual are not two separate realms. Hayles (1991) concurs with this statement, arguing that where the world is experienced as a merge of reality and social constructs, reality is subject to constant revision and re-construction. Virtual and actual blur (Castronova, 2005). The two worlds become so similar that the players simply choose which to live in (Castronova, 2005). Castronova believes that artificial intelligence may soon be capable of meeting the emotional needs of players, which may lead to an increased preference for the virtual over the actual. He claims that the membrane separating these worlds is already porous, a term borrowed from psychoanalytical theories on mental patients with difficulty distinguishing actual from imaginary (Cooper, 2007; Hamilton, 2006). Castronova does distinguish three areas that are distinct in actual and imaginary worlds: market, politics, and law. In a similar argument to that used in discussions of gameworlds, Moulthrop (2004) claims an interactive story is good only when we lose our sense of time and place, when the medium is transparent. Hansen says, "All virtual reality is mixed reality … All reality is mixed reality" (2006, p. 5).

People have always been aware of alternate states of consciousness, of other "worlds," and have been interested in exploring them. Interpretations of experiences in these other worlds change over the centuries depending on contemporary beliefs and established frameworks of understanding. As in the study of the human mind and body, the impetus is to make meaning of the world and to understand ourselves as living beings (Calleja, 2006; Varela, Thompson, & Rosch, 1991). People enjoy experiences different from those available in the material world, entering other worlds such as dreams, religious practices, and states of consciousness altered by various techniques or drugs (Calleja, 2006).

How, then, is it possible to determine what is truth and what is part of the imaginary magic circle? Bolter and Grusin (1999a) use the term 'immediacy' to describe the perfection, or erasure, of the gap between signifier and signified such that a representation is perceived to be the thing itself. In their book *Remediation*, immediacy (or transparent immediacy) is defined as a "style of visual representation whose goal is to make the viewer forget the presence of the medium (canvas, photographic film, cinema, and so on) and believe that he is in the presence of the objects of representation" (1999b, pp. 272-273). In formal terms, the desire for immediacy is the desire to move beyond the medium to the objects of representation themselves. Different media enact this desire in different ways. While linear-perspective painting and film may keep the viewer distant from what he views, in virtual reality the viewer steps through Alberti's window and is placed among the objects of representation. But what if there is no distinction between the object of representation and the representation itself? What if, as Baudrillard (1988) argues, the representation replaces the object and becomes the only actual?

Richard Bartle, a co-creator of the first networked virtual world, describes them in his work *Designing Virtual Worlds* as "places where the imaginary meets the real" (2004, p. 1). Even the actual world is sometimes like a game. Mackay calls this state of accepting the unreal a "cultural illusion" (2001, p. 90), which is similar to Gibson's description of the future world in his science fiction novel, *Neuromancer*, as a "consensual hallucination" (1984, pp. 51). Game players rework reality and beliefs (Mackay, 2001). Based on the postmodern view, which accords with Varela's (1999) argument about ever-changing perception, reality is experienced differently by every individual. Therefore it does not have a permanent and indestructible structure. This scenario becomes yet more complex when we juxtapose a designer who constructs reality in virtual worlds and a player who reconstructs that reality, generating his/her own knowledge from existing knowledge and information.

Virtual worlds create their own culture and sometimes become their own reality, no longer imitating the original. How do experiences in the virtual realm thus change the way people behave and think of themselves in actual life? Can these social spaces complement us as social beings and fulfill our need for human company, from which we derive protection, enjoyment, and sympathy? Or will they leave us isolated and alone amongst millions of virtual bodies? At this point there is no way of knowing whether we will eventually take a representation as actual, without knowing the actual any more, as Baudrillard (1988) has predicted.

3.4 Learning by Doing

Game players often do not read game manuals. They begin playing and learn by doing. They draw from community knowledge and from collective intelligence (Jenkins, 2006;

Lévy, 2005), relying on other players' experiences with the game. They will only seek a manual to find answers if there is a difficulty they cannot overcome (Hoechsmann, 2008). Looking at contemporary cognitive psychology theories, Jagodzinski (2006) states that players in a game act on the basis of pattern recognition. They may apply those patterns to problems in actual life, adapting them to new experiences. As a result, they establish new patterns they subsequently recognize in games, and so on.

Salen and Zimmerman (2004) perceive games as a fertile field for emergence (new qualities, structures, and patterns arising out of relatively simple interactions in complex systems) enabled by rules. "A game is defined by rules," they write, but "play is a free movement within a more rigid structure" (2004, p.80). Their definition concurs with Gadamer's (1982) description of play as the possibility of movement. He claims that "one enjoys a freedom of decision, which at the same time is endangered and irrevocably limited" (p. 95). A player's choice of movement is not completely limitless; it is contained in an area "specially marked out and reserved for the movement of the game" (Gadamer, 1982, p. 96). Galloway (2006) claims that "the game, like all other digital objects, is but a vast clustering of variables, ready to be altered and modified" (p. 112). The attractiveness of a game, then, lies in the player's experiences and expectations. The availability of different possibilities and the risk of choice are among the top motivators to play and stay in the game (Gadamer, 1982; Maietti, 2008). The purpose of the game is not its solution, but the "ordering and shaping of the movement of the game itself" (Gadamer, 1982, p. 97).

When an opportunity for adaptation or learning exists, the possibility of emergence arises (Holland, 1998). Some systems are capable of self-modification and self-production.

Pleasure lies in reorganizing, adjusting, modifying, and reproducing new patterns (Murray, 2006). In 1974, Francisco Varela and, Humbert Maturana used the word *autopoiesis* for the first time to describe biological living systems as self-producing machines. The term has been used in other fields of study, such as sociology, psychotherapy, management, and anthropology (Davis & Sumara, 2006; Holland, 1998). Autopoietic systems are simultaneously producers and products. The possibilities in video and computer games enable players to make connections with other players or game components and collectively create conditions for new possibilities.

In a game, and especially in MMORPGs, a move may lead to unexpected twists and turns (Holland, 1998). A single player cannot predict all possible moves by other players. Even for a system designer, it is impossible to predict the results produced by every individual's actions (Aarseth, 1997; Salen & Zimmerman, 2004). Salen and Zimmerman find this exciting. They say that,

> One of the great pleasures of being a game designer is seeing your game played in ways that you never anticipated, seeing players explore nooks and crannies of the space of possibility that you never knew existed. (2004, p. 168)

Good video games make learning deep and effective (Gee, 2007). The configurative aspect of games described by Eskelinen (2001) (i.e., the ability of the player to change the trajectory of the game) is one of the key elements of engagement. It keeps the player motivated (Gee, 2007).

Gee (2003), a linguist, looks at literacy practices adopted in games. He acknowledges that forms of communication have changed as a result of the invention of computers and

the Internet. He broadens the definition of literacy from "being able to read and write" to other semiotic domains, especially the visual realm. Literacy is a social practice (Street, 2003), and in highly social spaces such as online video games it becomes a fluid phenomenon in which meaning and manifestation are constantly negotiated.

The skills players acquire through play are transferred to the ways they learn outside the game, how they interact with others, and how they take roles in society. Jenkins (2006) and Jenkins, Clinton, Purushotma, Robison, and Weigel (2006) use the phrase "participatory culture" to describe this shift from individual expression to collective engagement. They list the following skills as part of new media literacies: play, performance, simulation, appropriation, multitasking, distributed cognition, collective intelligence, judgment, transmedia navigation, networking and negotiation.

Young generations of students are often characterized as having short attention spans and lacking the ability to focus; new media is identified as the cause (Brown, 2000). Brown (2000) goes on to question the assumption that children who are multiprocessing cannot be focused. Hayles (2007) points out the necessity of distinguishing between *hyper-attention* and *deep attention*, the former being a new cognitive style capable of multitasking and the latter characterized by being able to focus on a single object for long periods. She claims that children growing up in media-rich environments have "brains wired differently" (p. 192). Hyper-attention is more adaptive than deep attention, and may better meet the demands of contemporary developed societies.

3.5 Learning by Storytelling: Narratives and Games

Many game designers look for inspiration in literary work, especially the genres of adventure novels, mystery novels, and thrillers. Games are also created based on comic-books ("X-Men") and cinematic work (Mackay, 2001), on anime or manga (Akira), television programs or other media, on mythology, and even on popular toys. Game designers try to either transform the known work of art or to borrow only certain features, techniques, or ways of representation from the original medium.

The influence is not one-way. Galloway (2006) claims it is a cliché to say that movies are like video games. Even the actual/non-actual are often blurred in recent cinematographic production (Galloway, 2006). The relationship between digital games and narrative and digital games and film has long been a subject of debate among media theorists (Jenkins, 2004; Murray, 2006).

Because the distinction between narratives and games is not clear-cut (Carr et al., 2006), the boundaries between those media are becoming confusing (Murray, 2006). Carr et al. claim that "understanding the coexistence of these elements might eventually require us to rethink what we mean by narrative in general" (p. 38).

3.5.1 Narratives

Narratives have always been an important part of human life. Fulford (1999) claims that "humanity clings to narrative" (p. 5) and that "children grow into adults by learning stories, and so do nations and communities" (p. 33). Sherman and Craig (2003) consider cave painting an early medium for storytelling and conveying virtual worlds from one person to another. Instructional science research has confirmed that exposure to narrative

contributes to the development of cognitive skills (Laurillard, 1993), emphasizing the structure of narrative that teaches causality and temporality (Mandler & DeForest, 1979).

With the emergence of technologies beyond oral narrative and print text, other venues for constructing narratives have been explored. Two are: a) some forms of electronic literature where sequence is user-determined and no clear point of conflict or denouement disrupts the traditional understanding of narrative (Hayles, 2008); and b) gameworlds where narratives are woven through kinesthetic, vivid, and bodily experience.

3.5.2 Games

A narrative may not be part of every game, but it certainly has its place in the new interactive worlds of video and computer games. Narrative is embedded in a game, in action; it is not an add-on (de Castell et al., 2007). Zimerman and Salen (2004), addressing role-playing games, discuss narrative structure and narrative settings. Many game designers take into consideration the development of a narrative as an important part of the game. LeBlanc (2006) claims that a dramatic arc gives a sense of wholeness to a story, defining the beginning and end; he describes this arc as "part of the fundamental rhythm of human condition" (p. 444). He looks into ways of building this dramatic tension in games and defines two necessary ingredients: uncertainty and inevitability.

Both ludologists and narratologists once saw narrativity and interactivity as irreconcilable categories. Typically, they did not see any techniques to mediate tension between narrative flow and the freedom of the player's action to change that flow. This argument presented the core of their opposing standpoints. Over time, such sharp arguments have given way to more accommodating solutions that seek similarities rather than differences.

Ryan (2005) calls this situation "the split condition of digital textuality," and finds video games and avant-garde digital art to be two ends of a spectrum. In order to examine this spectrum, she explores three types of interactive narrative: embedded stories, emergent stories, and interactive drama. Mateas and Stern (2004) developed an interactive story, "Façade," where a player takes the role of the protagonist and by his actions influences the flow of the story.

Instead of the term interactivity, Mateas and Stern used the term agency, arguing that a character can experience agency even with constraints. This extremely important differentiation opens a door to interactive dramas similar to "Façade," and to other forms of game worlds such as embedded stories, alternate reality games, or virtual spaces. In these, the game drops its win/lose finale or is mediated into a different experience. The experience has a different purpose: besides developing problem-solving abilities, it permits moral dilemmas to be tackled.

This is the effective domain of deeper emotions, access to which has always been problematic for game designers (Bizzocchi, 2007). It is easier to identify with a character in a novel or a movie, for example, than in a game (Perlin, 2004). We are still far from creating interactive actors that are emotionally effective. The reason for this, according to Perlin, lies in agency. Our imagination allows us to think of a novel character existing somewhere outside the novel as a real person, like Jane Austen's Emma, for example; but this is not so in the case of a game character. As soon as we walk away from the screen, the game character is frozen in time and space – unless we are the character that we continue to role-play in the actual world.

Many theorists describe narratives inside gameworlds as interactive, but not all of them agree on what exactly interactivity means (Douglas & Hargadon, 2004). It can mean "everything and nothing" (Zimmerman, 2004, p. 158). No player knows where the story will take her. Like reading a cybertext, Aarseth claims, the reader is constantly aware of "paths not taken, voices not heard" (1997, p. 3).

A creator of a game has to open different possibilities for players and build them into the structure of the game (Zimmerman, 2004). Otherwise, "if the interaction is completely predetermined, there's no room for play in the system" (Zimmerman, p. 160). The player, on the other hand, must decide what actions are dramatically probable and worth taking (Mateas, 2004). It is difficult to say, however, how much control or freedom a player has or should have over what is happening and how much is determined by pre-written scripts and the capabilities of the machines (Carr et al., 2006).

For Aarseth (1997), there are three sides in the struggle over who controls the text: the author, the reader, and the text itself. It seems that moving through or creating a narrative is a constant process of finding the boundaries of what players can do and decoding the designer's intention. Because of these ambiguities, an interactive narrative can be read and re-read numerous times. Similarly, a game can be played and re-played. Zimmerman (2004) claims that eventually all narratives are interactive; Aarseth states that for a fiction to be successful, it has to be narrative, "just as a lie needs a believer in order to work" (1997, p. 50).

Bizzocchi and Woodbury (2003), on the other hand, develop an argument from the question of whether narrative and interactivity can ever come together. They wonder "if

narrative design and interactive design integrate in any meaningful way" or if "they operate in shared solitudes" (p. 554). At the end of the article, they conclude that narratives in digital spaces should be approached differently; they argue that a third element of narrative design should be added to the classic narrative modes. That is, next to *diegesis* (telling) and *mimesis* (showing), we should add *praxis* (doing). The point is to identify ways in which narratives are interactive (Jenkins, 2004; Zimmerman, 2004) and what elements make them different from other narrative forms. The presence of other players makes play more complex. The position and action of one player affects the other. This is rare in hypertext narrative (Eskelinen, 2004).

Print media give us the convention of seeing text on a surface (Cayley & Lemmerman, 2006), from plate to screen. Hayles writes that "to some extent, we see what we are taught to see" (1991, p. 7). Virtual space enables a spatial perception of text through which that text becomes navigable. Just as Jenkins (2004) sees games as architecture, so can text be presented as an architectural object. Words become "playable objects" (Cayley & Lemmerman, 2006, p. 6).

Questions about the dual role of users of an interactive system, as readers and authors, have been posed many times (Maietti, 2008). Role-players are seemingly readers and authors of the narrative at the same time (Mackay, 2001). As forms of communication have changed, so has the relationship between author and reader. There is no authority based on social structure: everyone can be an author; everyone is a reader. The media in question are playful: "This is a world of play, a world at play" (Hoechsmann, 2008, p. 69).

Authorship and readership in interactive systems can thus be quite problematic (Maietti, 2008). The author is re-configured. The responsibility for text and narrative transfers to the reader/player. Pleasure results from these interchangeable roles. As Maietti says:

> The pleasure derived from using the interactive system is not the pleasure of authorship, of creating texts out of a language, selecting and recombining tokens, but is the pleasure of acting and reacting to a realm of potential that can widen or narrow at each step. The potential is not a landscape of different configurations, but a systemic matrix of textual strategies that, when actualized, create effects of meaning, for instance reducing or magnifying the user's range of possible interaction at a given point. The pleasure of the user does not derive from the fruition of the actual, but from the fruition of the potential or, better, from the transition between the two. (2008, p. 104)

Murray (2004) believes we should not oppose games and narratives but examine ways of improving both. Since they overlap, we should look for game elements in stories and narrative elements in games; instead of focussing on their absence or presence, we should speak in terms of "matters of degree" (Murray, 2004, p. 10).

3.6 Games for Social Change

Simulations for learning and training, as in medicine and health sciences (Amaro, et al., 2006), offer a new haptic technology that enables students practising dental procedures to have a realistic sense of touch. Besides health, topics of serious games include humanism, cognition, energy management, business (Alhadeff, 2009a), and many others.

In 2004, Frasca wrote that it might be possible to design games capable of dealing with social and political issues. A year before Frasca's article, Bizzocchi and Woodbury (2003) discussed differences between narrative and gameworld immersion and the possibilities of games to evoke emotion. Although they identified similarities, they found video games to be far from having the same effects as narratives. They concluded that it would be difficult to design video games which were able to make us cry.

The current market has proven Frasca (2004) right, offering innumerable serious games exploring a variety of fields. These games at least have the goal of creating change. The degree to which they achieve that goal is open to question. Can games be made about any possible topic? Castronova (2005) wonders whether a game such as "9-11 Survivor" is "a shameless exploitation of a tragedy? Important public safety tool? Subtle memorial to the fallen?" (p.229) Frasca (2004) offers a similar example. He says that making a video game about Anne Frank, for instance, could "trivializ[e] the value of human life" (p. 86). How then is it possible to make a video game about genocide in Darfur which does not "trivializ[e] the value of human life?" Games such as "Darfur is Dying," "Global Conflicts: Palestine," or "Peacemaker" were created to evoke empathy and enable better insight into conflict situations. To design a game which raises consciousness or initiates significant debate is, however, challenging, and the success of such games to date remains questionable.

This is true in large part because it cannot be taken for granted that players will apply ethics of social behaviour from the actual world to a fictional space (Maietti, 2008). On the contrary, these two worlds, actual and imaginary, can have different sets of ethical norms. Both sets, however, determine the choices of those who obey them. This is a

direct consequence of assuming a different identity and individual characteristics when entering a fictional universe (Maietti, 2008). Although Maietti recognizes the process of identity transparency (a user's actions having consequences in fictional worlds), he claims that the distance between the users (acting in the actual world) and the avatar (acting in fictional space) is a measure of ethical responsibility.

Being interactive is not enough in itself, Perlin argues (2004); rather, the narrative must make the player act and feel as though unreality is actual. Only then will he be able to care about the characters and feel empathy. Wright (2004) points out that interactive media has more potential to teach empathy because the player is not only an observer but a creator. He writes that characters are controlled and defined by users: "she [the character] contains a part of me in a way that other media forms can only loosely approximate" (p. 14).

The player often experiences what is happening to the character as a personal journey (Mateas, 2004). Immersion "enhances empathy and the experience of flow" (Mateas, 2004, p. 22). Immersion in video games is more active, whereas in narrative such immersion takes place on the level of the imaginary. However, "they do both involve cognitive interpretation and emotional engagement" (Bizzocchi & Woodbury, 2003, p. 551). In the same way as being engaged with a stimulating book or movie, a video game can enable us to live lives that are not our own and experience emotions that are not ours (Armstrong, 2006; Maietti, 2008). Frasca (2004) observes,

> Neither art nor games can change reality, but I do believe that they can encourage people to question it and to envision possible changes. (p. 93)

3.7 Ethics in Gameworlds

Generally speaking, when asked a question about distinguishing between good and bad, people are likely to be certain in defining one or the other based on their moral standards and values. But in morally ambiguous situations which require an instant reaction, "the good" is not always rationally done. The boundaries are not simply black and white.

It is not easy to predict the future and the various ethical dilemmas we may face. It is even less likely that we will be able to predict our own behaviour and choices. In a classroom situation, for example, the right choices are clearly identified and it is easy to make appropriate ethical decisions (Balzac, 2010). But faced with the same ethical challenge under pressure, the decision may be different. Only in retrospect can someone recognize the triggers to action. Balzac compares this with an athlete who can see the cues for a defeat only when reviewing their performance after the game.

Phelps (2010) questions our definitions of good and harmful, our standards, and the criteria we apply to measure these values. Such standards and criteria should be questioned given that the value systems of different social environments and structures do not always coincide (Vikaros & Degand, 2010). Furthermore, societies change their value systems over a historical timeframe. According to Vikaros and Degand (2010), the origins of morality can be traced to early childhood "with the immergence of both fantasy play and language acquisition" (p. 198). Moral development is a form of social development.

Drawing on the eighteenth-century philosopher David Hume, Simkins and Steinkuehler (2008) distinguish between normative and descriptive ethics and dogmatic and critical

ethics. The only appropriate ethics for education, according to them, are descriptive, critical ethics, in which norms are not given and applied to all situations equally but are developed and described based on people's behaviour. As Reynolds (2002b) notes, there are different types of ethics and ethical theories. All of them can seem valid, even when evaluating the same actions.

In recent debates on the impact of video games, focus on the topic of ethics has increased. It is obvious that different authors look at different ethical dimensions inside and around gameworlds. Broadly, the debate may be divided into the following categories:

1) ethics of the medium;
2) ethics of the design;
3) ethics of the play and the players; and
4) issue of teaching ethics and ethical behaviour using games.

3.7.1 Ethics of the medium

The ethics of the medium is explored from the perspective of games as a cultural and social phenomenon, looking at their treatment in comparison with other media. Interesting questions arise around their status and legal inferences, including their positive and negative psychological and sociological impacts. Some theorists still wonder if games could and should be created around any topic regardless of its controversy, inherent perspectives, and sensitivity. Hoffman, for example, claims that "just because a game can be made doesn't mean it should" (2010, p. 115). Her concerns are similar to Frasca's (2004) comments on trivializing human life. She worries that difficult issues

which are hard to confront and view will be glamorized, thereby sending a completely opposite message from that which may have been intended.

Brenda Brathwaite (2010), on the other hand, describes how in play with her daughter an unthreatening game environment presented exactly the right medium to learn about difficult moral dilemmas. As a result of this realization, she created six non-digital games under the name "Mechanic is the Message" on the following topics: 1) Cromwellian Invasion, 2) Slavery, 3) The Holocaust, 4) Illegal Immigration, 5) Politics and Poverty in Haiti, and 6) The Trail of Tears. Sharp finds them "a powerful, medium-appropriate series of serious or educational games" (2010, p. 329), and notes that Brathwaite received a standing ovation for her talk on Train, a game on the holocaust, at GDC 2010 (Game Developers Conference).

Pohl (2008), exploring the influence games have on their players, compares this influence to the experience of reading books. She looks at Martha Nussbaum's (1990) discussion of how reading books, particularly the way she selected titles, shaped her character. Pohl (2008) wonders if games are a new form of art that, like narrative texts, will have a strong ethical influence on players by engaging them in moral conflicts and forcing them to take a stand.

How are games treated in a legal system? Some theorists see games as one way of expressing the basic human right to freedom of speech (Reynolds, 2002b). Squire (2006) cites a 2002 Missouri court decision on the legality of restricting access to violent games. The judges' perception of video games was that they had more in common with board

games and sports than movies and other forms of art. This decision was overturned a year later under a ruling protecting free speech as in literature and film.

Reynolds claims the decision is about limiting "the right to hear rather than the right to speak" (2002b, p. 7). That is, any content can exist but access to it will be restricted to different categories of audience. Buchannan and Ess (2005) report that the United States' "Entertainment Software Rating Board (ESRB) uses five different rating symbols and over 25 different content labels that refer to violence, sex, language, substance abuse, gambling, humor and other potentially sensitive subject matter" (p.3). Some European countries have seen efforts to introduce legislation that would prohibit games with the potential to encourage aggressive, violent tendencies in players (Buchanan & Ess, 2005).

Consalvo directs us to the paradoxical expectations of games. Gaming "by definition demands activity and volition" (2005, p. 8). Yet, some media theorists become upset when that activity is a violent progression through the game. Consalvo questions the term *active audience*, which is itself oxymoronic. Players are asked to be active, but the word *audience* suggests someone less active.

Video games, like works of art, are protected by intellectual property law. It is not uncommon in MMORPGs that a player will develop his/her character, achieve a higher level, and sell the character to another player. A question arises over character ownership: should it lie with the game designer who created the capacity for the character in the first place or with the player who works on his/her character, customizes it, and develops its attributes through his/her progress in the game? As the character interacts with other people and characters, interaction also influences its status and growth,

creating a network of social relationships that further construct it (Reynolds, 2002a). Reynolds (2002a), drawing from the work of Turkle (1995) and Žižek (1997), claims that a game character is a player's extension of self. It can therefore be inferred that the right to sell or use the character lies with the player, not the game designer. The game designer is the one who provides the initial potential, but the player is the one who builds upon it to create the final elaborate character, which is possibly completely different from the designer's initial idea of what that character should look like.

Some of the designers' work is easy to recognize as copyright protected material: computer code and audiovisual output, for example (Burk, 2005). Burk believes, however, that "even the most limited electronic game scenaria contain some element of player creativity and choice" (p. 40); he therefore sees co-authorship between a game designer and a player. The creative contribution of the player is not generally recognized by US law, which presents legal and ethical challenges. However, owing to the increased number of multimedia products, pressure for recognizing multiple-platform properties to which intellectual property rights apply has mounted (C.R., 2009; Coleman & Dyer-Witheford, 2007).

3.7.2 Ethics of the design

The ethics of the design includes the presentation of content, representation of race, gender, and ethnicity, as well as rules and limitations that guide the play. The content in the game can be ethically questionable as well. Yao, Mahood and Linz's research on the impact of sexually-explicit games on players' behaviour implies that "playing sexually-oriented video games significantly decreased male participants' reaction time, in responding to sexual words and sexually objectifying words pertaining to women, as

compared to neutral words and non-words and those participants in control conditions" (2010, p. 85). Similar results were reported by Dill, Brown and Collins (2008). Sexual content may vary in degree, from abstraction to explicit depiction, and so may the level of its impact on the players. Cultural and racial stereotyping is as equally present in video games as it is in other media (Al-Rawi, 2008; Dickerman, Christensen, & Kerl-McClain, 2008; Eastin, Appiah & Cicchirllo, 2009). In making choices about game characters' looks and traits, game designers offer a certain view of racial, ethnic, or gender representation.

But while video games may potentially exert a negative influence on their players, they can also serve as a classroom for educating players about positive social values. Game designers are interested in creating spaces for experiences that offer the opportunity for moral education. According to Simkins, they should "offer an ethical experience that is practical and descriptive" (2010, p. 72). Gameplay should go beyond exposure to content and include challenges, goals, and practices (Squire, 2006). It must allow for right and wrong decisions (Brathwaite & Sharp, 2010). The limitation of most games, according to Raphael, Bachen, Lynn, Baldwin-Philippi, & McKee (2010), is in their very simplistic moral-decision model, where actions are inherently good or bad.

Most games have their rhetorical position established through their rules, leaving the players little scope for choice (Brathwaite & Sharp 2010; Sicart, 2005, 2010). Players make the decisions they are permitted to make. Travis cites the game "Knights of the Old Republic" (KOTOR, a BioWare MMORPG) and claims that it does not teach ethics but an "existing ideology" (2010, p. 95). Pohl (2008) states,

> By offering the player a set of options (for example to kill people in the game world) and denying others (for example to kill kids in the game world) the designer of a game also makes a moral statement. (p. 95)

Players have to play in a certain way. In accepting the game's role, they accept a "certain way of being in the world" (Squire, 2006, p. 26).

How and to what extent videogames influence the player through their built-in ideologies and perspectives has not been fully explored. A teacher using games for education must carefully select the world views the games offer, or at least be aware of the experience students will have playing particular games (Squire, 2006). Many commercial games display embedded ethics (Bogost, 2006; Sicart, 2005; Squire, 2006). Squire gives an example of "Civilization III," while Bogost uses "Tax Invaders," in which the language of metaphors is a powerful tool to reinforce ideology. Even its title, "Tax Invaders," suggests a hostile attack rather than a constructive discussion of tax policy. The other example in Bogost's article, "Videogames and Ideological Frames," is the game "Grand Theft Auto: San Andreas" (GTA), which implants a message about fast-food restaurants negatively influencing the population's health. The game's main character, low on the social hierarchy and living with a limited income, must feed himself by buying cheap food which makes him fat but not healthy. Good food is more expensive and thus less accessible. This design choice reflects contemporary U.S. society, in which "obesity presents the major nutritional problem, which is at best encouraged, and at worst directly caused by the food market itself" (Bogost, 2006, p. 176). The solution proposed in GTA to this vicious circle, Bogost (2006) notes, is hard work and discipline. Bogost (2007)

believes there is still no single ideology for the medium, but he warns that strong political groups may pressure dissenting voices as in other media.

Games which offer evident rewards are generally weaker than those that require no external motivation (Staines, 2010). Sicart (2005) analyzes games as systems and worlds, distinguishing between rules which are part of the game design and the space in which a player has the opportunity to express agency. He claims that games have different potential, but until they are adopted those potentials remain unexpressed and no ethical reasoning takes place. Only when the player obeys or does not obey the rules will values be chosen. For Sicart (2005), even a decision to play a game is a moral statement.

Where the "good" is transparent and explicit, it is not certain whether players' actions are morally appropriate because they feel that is how they should act, or because they wish to gain points. In the same way, Phelps (2010) expresses concern about role-playing in which a player chooses to be a villain. He wonders if the player will achieve insight into the motivation and agency of the character and understand the meaning of villainy, or whether the player will simply be evil and kill others without remorse. At times the traits of game characters are not obvious, and only at the end of a game may a player realize that he or she was only a puppet in the hands of a villain (Svelch, 2010).

In talking about game design, Sicart claims,

> Designing ethical gameplay challenges conventional wisdom, requires a reinterpretation of design as an aesthetic process, and more importantly, puts players as the centre of a moral universe created with the sole intention of

challenging who they are, and who they want to be, as players, but also as moral beings. (2010, p. 13)

3.7.3 Ethics in play

Ethics in play is reflected through players' relationship to one another. Two important elements of that relationship are considered here: harassment and cheating.

Harassment is especially present among new players. These so-called *newbies* are easily recognized by experienced players. They explore the environment without knowing what to do next, and because of their lack of experience they may appear to be intentionally blocking other players' actions (Suler & Phillips, 1998). Newbies sometimes experience harassment, being followed and/or verbally abused by other players (Warner & Raiter, 2005). This verbal abuse can escalate into more severe types of violent or deviant game behaviour in which newbies are prevented from playing or "killed."

Virtual murder and violence is often tolerated, but other virtual immoral behaviour is not. Luck (2009) attempts to analyze why virtual murder and virtual pedophilia, for example, are treated and viewed differently. Beginning with what is socially acceptable, Luck examines what is virtual and what is actual. He discusses the impact on a player acting immorally. Finally he discusses media theory. The aim of his paper, he writes, is "to highlight a possible inconsistency in the social acceptance of virtual immoral acts" (p. 36). As he develops his argument about how virtual murder is more frequently permitted while virtual pedophilia is prohibited, the complexity of the issue becomes evident.

Cheating in video games is treated differently than cheating in other games. Cheating in cards or a board game is regarded as unacceptable and not fair play (Kimppa & Bissett,

2010). In video games, however, the playing community may help members cheat by providing codes or ways of manipulating the system. Players distance themselves from other players – rather than a direct action against another player, cheating is seen as reaching a personal goal or achieving satisfaction (Kimppa & Bissett, 2010). In some cases, finding ways to cheat is considered an achievement. In single-player games, extra *cheat* features are designed purposefully and serve as a marketing tool (Kimppa & Bissett, 2010). That players cannot see each other may have helped undercut conventional notions of cheating. Although they communicate and interact, they remain in their own virtual spaces.

3.7.4 Teaching ethics through games

Introducing moral education in computer games is not new (Sicart, 2010). In the context of video and computer games, Phelps (2010) examines Maslow's hierarchy of needs and Kohlberg's stages of moral development, claiming these theories do not provide criteria for evaluating moral behaviour. He proposes the four-thread "Humanistic Ethos" (p. 128): poetic imagination, dialogic relations, systemic thinking, and existential vigour; these principles help us understand not only videogames, but what it means to be human.

In his discussion of poetic imagination, Phelps (2010) talks about other forms of art that convey ethical messages and raise awareness of critical human issues. In comparing games with movies, books, photography, and other artwork, he joins other commentators, such as Brathwaite and Sharp (2010) and Hoffman (2010), in questioning games' capacity to evoke emotions.

Simulation, as created in a magic circle, can be equally if not more real than reality. To assert that the game space and reality are completely separate is to *choose* not to see any ethics in games (Consalvo, 2005). As Buchanan and Ess state, "the nature of e-games is complex and both reflects and is reflexive of reality" (2005, p. 4).

Players, particularly MMORPG players who interact intensively, have the opportunity to learn about life choices, about others, and about themselves (Nordlinger, 2010). Phelps' second thread, dialogic relations, explores the truthfulness of interactions in digital environments and cites Sherry Turkle's (1995) discussion of life on the screen. Squire believes that players of MMORPGs participate in social practices with real consequences for the gameworld, but wonders whether they are transferable to actual life.

Many other scholars theorize the concept of the *other* and our understanding of others, especially in terms of emotional expression (Gee, 2004, Simkins, 2010; Staines, 2010; Vikaros & Degand, 2010). One of the solutions to better understanding the perspectives of others is role-playing (Gilbert, 2010), which Phelps (2010) calls systemic thinking and "opening ourselves up to multiple levels of analysis, considering multiple viewpoints and maneuvering through multiple value-systems to craft decisions that we recognize can always be improved upon" (p. 145). Through interacting with others in gameworlds and understanding various viewpoints, we come to comprehend the values, morals and needs of others in the same way we do in actual life (Phelps, 2010). Along the same lines, Schrier, Diamond and Langendoen (2010) refer to historical morality, in which one can put oneself in the shoes of someone who lived in a certain historical context and thus achieve historical empathy.

The key to understanding virtual space, Staines (2010) states, is learning how to connect with the environment and feel comfortable in it. Even when the characters are imaginary and abstract, the abstraction becomes actual and meaningful if the player invests his time, interest, and emotions in them, (Brathwaite & Sharp, 2010). When there is no personal stake in the outcome it is easier to make a choice, and learning usually does not happen (Balzac, 2010). Another important condition for connection is the creation of a social narrative and opportunities for interaction (Vikaros & Degand, 2010). Opportunities for cooperation enforce moral reasoning and reinforce positive behaviour (Koo & Seider, 2010; Phelps, 2010).

Many disciplines employ role-play as an educational method, as in formal school, military, and counselling settings. Simkins (2010) claims that "the experience [of role playing] opens the door to an emphatic understanding of others" (p. 72). Because they are in role-play, gamers change players' identities. In a social situation, inside a gameworld, our identity, as Vikaros and Degand (2010) point out, is based on comparison to others. Frequently, identity is based on players' affiliation with different groups. The more open and transparent behaviour is to other players, the more they tend to behave ethically. They feel ethically obliged to fulfill their role in a group (Travis, 2010). On the other hand, Balzac writes, based on Zimbardo's (2004) studies, "the more people perceive themselves to be anonymous, the more likely they are to engage in evil behaviour" (2010, p. 295).

Because it is a game, players can re-live the same experiences a number of times in the safety of a virtual environment (Swain, 2010). However, emotional and cognitive investment in a game can be so high that it influences the player's behaviour outside the

gameworld. Games have the capacity to transform us and transfer our skills from the virtual to the actual environment (Barab, Scott, Siyahhan, Goldstone, Ingram-Goble, Zuiker & Warren, 2009; Koo & Seider, 2010; Phelps, 2010). Balzac's (2010) study notes a correspondence between player behaviour in a game and at their regular jobs. There is a vast amount of research on the negative influence of games (i.e., violence in game content affecting aggressive behaviour in game players) (Gilbert, 2010; Koo & Seider, 2010), but Balzac believes games tend to bring out "not so much the worst in people but the most in people" (p. 298).

The most frequently cited theory about how violence can be justified is Bandura's (2002) findings on Moral Disengagement. In 1996, Bandura, Barbaranelli, Caprara and Pastorelli listed a number of mechanisms for moral disengagement. They pointed to the difficulty of observing and measuring ethical reasoning, asserting that it is much easier to make decisions about hypothetical moral dilemmas in a controlled setting than to study them in critical life situations. One way of justifying immoral actions is to claim they are in the service of valued social or moral purposes ("for the greater good"). They identify another mechanism, one of the most effective, as euphemistic labelling and behavioural contrasts (e. g., comparing an immoral act with a more repugnant activity). Displacement of responsibility happens under social pressure, while diffusion of responsibility indicates group action – in both cases, the avoidance of personal responsibility. To minimize harm, people tend to disregard or distort the consequences of an action. Other justification mechanisms include dehumanization, in which victims are seen as not having human qualities, and attribution of blame, in which a victim incited harm against him or herself through provocation.

Simkins and Steinkuehler (2008) are less concerned with a player acting violently or criminally in actual life because of the game he/she played. However, they believe individuals may grow used to seeing or witnessing violence because of repeated acts of violence in games, and may therefore become highly desensitized. This could not happen if self-regulatory mechanisms and self-censure are present and strong (Bandura, et al., 1996). Such mechanisms can be reinforced by moral education. Contrary to those who believe that games cause increased aggressive behaviour, Simkins and Steinkuehler claim that in most cases acts of violence will lead to moral reasoning and "foster empathy, tolerance, and understanding for others—aptitudes crucial for humane behavior in a complex and culturally diverse world" (p. 334).

When there is no right or wrong choice, the teaching of ethics through play becomes complex – decisions are made based on personal value systems and an understanding of the context at hand (McDaniel & Fiore, 2010). Koo and Seider (2010) argue in favour of game design that models desired values through content or rules. In this way, a player's ethical standpoint and development can be "shaped and encouraged" (p. 15), which can be a life-long process (Vikaros & Degand, 2010).

Sicart (2010) calls games in which players do not have to doubt the ethical meaning of their actions conventional. He criticizes such design and system-driven, machine-computed ethical feedback, since there is no easy or definitive way of evaluating ethical values. He claims that the meaning of the game as an ethical experience should not be "a matter of computations, but a matter of the active interpretation of a reflective player" (p. 10). Svelch (2010) agrees with Sicart, calling such gameplay "merely statistical" (2009, p. 209), not ethical. In addition, gameworlds may create in-game values that differ from

the values of the players. Sicart (2009) believes those in-game values should be harmonious with the values of the players as cultural beings.

How can we know that moral education can happen? According to Schrier et al. (2010), to "navigate our globally interconnected, rapidly evolving world" we need to learn to use games to "foster the development of ethical reasoning skills and encourage citizenship" (p. 255). Does a role-playing game help a player overcome his own prejudices (Phelps, 2010)? Not necessarily. Our own livelihood must be at stake in order for us to care and be responsible; only then can we really be transformed by the experience (Phelps, 2010).

Svelch (2010) posits that not all games have been made to promote moral development, but that good games will include moral choices and dilemmas, containing "an implicit system of morality" (p. 59). Good videogames must be both entertaining and instructive and must present effective teaching tools (Staines, 2010).

Context -- the situation in which a person acts -- is critical for making ethical decisions. Role-playing games presents environments in which such situations and opportunities to practise take place, and this enables situated learning (Simkins & Steinkuehler, 2008). RPGs are also favourable for observing such actions. Simkins and Steinkuehler identify a number of factors which are important for developing skills of critical reasoning. They are as follows:

- participation (actively taking part in the event);
- the ability to make choices (influencing the flow of the game or the gameworld);
- mirroring (seeing what effects the decision has on others or on the gameworld);
- feedback (response from other players);

- context (social context that allows the taking-on of roles and interaction);
- relevant choices (making decisions that matter and are important for achieving goals); and
- reflection (opportunities to critically reflect on who players would like to be and what kind of relationships they want to have in the gameworld and in real life).

Expanding on Simkins and Steinkuehler's (2008) important factors, Raphael et al., (2010) make a distinction between civic training and civic education and between games that teach "about basic citizenship roles (voting, participating in organizations, and the like) and about civic leadership (running for office, starting or running organizations, and so on)" (p. 218).

ARGs, on the verge of the imaginary and the actual, demand that participants make choices with an impact on their lives outside the game. Such games, according to Macklin (2010) trouble the concept of the magic circle. When players are asked to interact with people in public, the boundaries of what is *inside* and what is *outside* the game disappear. The ethical norms and rules move into the public space, and other questions arise around moral values and the right of the game to intrude into that public space. How ethical is it to conceal the fact that actions players take are part of a game and not actual? Should players be visibly marked, as in Macklin's example of "Re:Activism," whose participants wore matching-colour bandannas? Through this gesture, the players reestablished the boundaries of the magic circle and visibly invited people to spontaneous play. Simkins, on the other hand, advocates that the boundaries of the magic circle be "nurtured, protected and enforced" (2010, p. 83).

Can video games teach us about the future, help us predict what could happen, and prevent catastrophes or negative behaviour (Phelps, 2010)? Phelps claims that "as game players, we are not just systemic thinkers, but ethical actors" (p. 145).

3.8 All the Wrong Learning: Areas of Concern

3.8.1 Addiction

Concerns that video games can be addictive, and that if parents are insufficiently attentive their children will be *hooked* on this new form of "evil" have been raised (Crowe & Bradford, 2006). Such fears could have developed in part because of the generation gap, which has widened with the evolution of technology in modern times (Crowe & Bradford, 2006). Parents who do not play computer games may be oblivious to what is happening behind their children's closed doors.

Castronova (2005) questions whether emotional investment in imaginary spaces is inspired by more than rational choice. Does immersion in the gameworld cause a chemical response akin to smoking nicotine? Rice (2009) argues that the term "addiction" should be used for describing chemical dependencies; what is happening with game players is overuse, not addiction. The delineation of terms is important because the consequences differ greatly. Heroin addicts, for example, can lose huge amounts of money or even die; in contrast, the consequences of *addicted* gamers who spend hours in front of the computer tend to be loss of social opportunities or disregard for their job or school duties. Although there are extreme cases of players who die playing video games, for Rice "a heavy video game player does not sink to the same level of addiction as a heroin addict."

3.8.2 Violence

Jagodzinski (2006) explores whether there is any causal relationship between violence in video games and physical violence in the actual world. He notes that it is an established psychological practice to let children express violence through fantasy worlds. Instead, he suggests we should look for causes of violence in current social structures, the decline of paternal authority, and deteriorating economies. Jagodzinski approaches the values embedded in game design critically, and cautions against seeking happiness by buying bigger and better possessions, a "moral calculus under which 21st century technocapitalist economies still operate" (2006, p. 286).

Both violence and addiction can be measured in reference to player behaviour in ordinary life and the choices he/she makes (Castronova, 2005). Players may not seek help because they are incapable of realizing their need. Interactive entertainment has been insufficiently explored from psychological and sociological perspectives (Penny, 2004). Penny considers simulations to be training; that training is only efficient if it becomes automatic. Consequently, she questions what games teach players and identifies a danger in training mainly young males to kill.

Klimmt et al. (2008) agree that there is reason for concern. They base their argument on Bandura's (2002) Moral Disengagement Theory, which explains strategies for justifying immoral actions such as euphemistic labelling (*servicing the target* instead of *bombing*) or displacement of responsibility (*following orders*), and so on. Death in video games is often experienced as a death of the other (Jagodzinski, 2006). Desensitization is achieved through repetition, one of the features of games. On the other hand, Moulthrop argues

that "there is more to game culture than simple aggression" (2004, p. 63). As McAllister points out, "music has been blamed for corrupting youth for centuries" (2004, p.6).

3.8.3 Learning about games

Despite the long existence of play, which is older than human civilization and culture (Huizinga, 1970), ludology, as Espen Aarseth (1997) terms it, is still an unexplored and under-theorized field of academic research. However, the number of higher education institutions initiating studies in games has been increasing (Branston, 2006; Zagal & Bruckman, 2008) in response to public demand for knowledge and skills in this area.

A number of challenges still exist. On the one hand, instructors suffer from a lack of solid theoretical background. On the other, they have a diversity of students in different academic disciplines who, while they may be experienced game-players, have difficulty approaching games critically and analytically.

Game studies or ludology is in need of well-defined terms and concepts that will help students articulate their ideas and experiences. Zagal and Bruckman (2008) express concern over the large number of students who are ill-equipped to move beyond colloquial forms of argument about how well a given game is liked into the rigors of academic debate.

Games now occupy space in libraries, hitherto traditionally connected to academia, literacy, and serious work (Branston, 2006). Librarians offer spaces for young readers/players to play games, organize tournaments, or supply teachers with resources about using games for their classes. Wardrip-Fruin and Harrigan (2004) and Carr et al. (2006) compare the difficulties of taking scholarly approaches to games with the way

movie-making and other new media were initially considered no more than pastimes or entertainment. The field is a new "uncharted territory" (Douglas & Hargadon, 2004), which gives rise to debates over critical approaches and frustration in developing frameworks for analysis (Zimmerman, 2004).

Many theorists of games have focused on a new feature of games, aesthetics, and have analyzed digital gameworlds as art forms (Mackay, 2001). Aarseth (2004) and Murray (2006) believe that games have finally been recognized as a phenomenon worthy of scholarly work.

3.9 Conclusion

Games have generally been used for learning in informal rather than formal educational settings. Since playing is fun and intrinsically enjoyable, it has often been used as a motivator or reward. As games have become part of the computerization of everyday life, their existence can neither be ignored nor viewed as being without consequences for learning. The booming video game industry produces an enormous number of video and computer games for the global market. Among that quantity, there exists potential for pedagogic quality.

Educational researchers and practitioners are finding ways to use games for learning. They are working with game designers to enhance those possibilities. Through video games, students may develop an understanding of self and the world around them and an ability to function in and contribute to society.

Besides developing motor skills and competencies in the use of computers and other technical devices, game content allows players to test their own capabilities, work with

others, respect norms of behaviour and communication, develop leadership skills, and contribute to finding problem solutions. Players gain valuable literacy skills and grow by constructing narratives that are meaningful, developing a sense of self and the power to change. In addition, learning happens in immersive and engaging spaces, which, if well designed, are capable of holding a learner's attention for longer than any previous teaching method, owing to the unpredictability and openness built into their algorithms. As with any standard pedagogical practice, the effects may be both positive and negative. It is the task of educators to explore these new fields and identify what these effects may be.

Chapter 4: Virtual Ethnography

Digital media have allowed humans to experience life and express themselves in different ways and different spaces. New questions necessarily arise. In cyberspace, how do we know what is here and what is there? How do we interpret what we see? How can we discover valid, objectively sustainable knowledge, and what significance might such discoveries have for understanding human relations and experience? One way to seek answers is through virtual ethnography.

4.1 Research in Digital Environments

In 2004, Elizabeth A. Buchanan published a collection of papers written by contributors from a number of nations and diverse disciplinary backgrounds. The papers discuss issues and controversies surrounding virtual research and offer perspectives on ethical challenges, directions for developing ethical guidelines, and suggestions for practical online research work. There is no consensus on how to ask fundamental questions and/or what methods to use in digital environments. The guidelines that exist are largely confined within disciplinary, institutional, or cultural borders; this produces an ongoing debate.

As with any new technological concept, many terms are used to denote research on the Web: cyberethnography, virtual research, Internet inquiry, anthropology in cyberspace, cybermethodology, cyberanthropology, online research, Internet research, and so on. Researchers use diverse qualitative and quantitative methodological approaches, employing surveys, interviews, and different types of correspondence to gather data.

Regardless of the term used, however, most researchers agree on two points: 1) that some of the methods used in traditional face-to-face environments can be used online, and 2) that digital environments have unique characteristics which are challenging and call for exploration (Beaulieu, 2004; Eichhorn, 2001; Hine, 2005; Suri, 2008; Sveningsson, 2004; Turkle, 1995; Ward, 1999; Williams 2007; Wilson & Peterson, 2002). Simply transferring strategies for in-person ethnographic research to online contexts will likely prove inefficient, inadequate, and lead to unsatisfying results (Baym & Markham, 2009).

Researching virtual spaces is problematic. However, Crowe and Bradford (2006) believe "cultural immersion (and therefore ethnography) is possible in virtual space" (p. 333). To that end, we must develop new technical skills and "new ways of thinking about the process of our fieldwork" (Beaulieu, 2004; Ruhleder, 2000). Miller and Slater (2000) point to cyberspace's diversity as a primary challenge in exploring it. When exploring, they write, we need to take into consideration the fact that cyberspace is being created and inhabited simultaneously by different people at different locations using various technologies. Generalizations about cyberspace are thus usually unhelpful.

According to Miller and Slater (2000), we should strive to understand a variety of social and technical possibilities and the ways in which they influence each other. The authors find it difficult, however, to bridge detailed case studies with unique specificities tied to localities to reach a general understanding of human behaviour across contexts. They advocate comparative ethnography. A need for clear guidelines on ethical considerations while conducting virtual ethnography is also voiced by many (Hewson, Yule, Laurent, & Vogel, 2003).

4.2 Research Design

When the fact that much contemporary professional work and many social interactions are performed online is considered, it is not surprising that an increasing number of scholars make cyberspace their site of research (Eichhorn, 2001). Interest in how technology has been used and with what effect is growing (Howard, 2002). Witmer, Colman and Katzman (1999) argue that electronic communication has huge potential for democracy, culture, and workplace productivity. They believe we can study the role of technology in group dynamics and interpersonal relationships. Jones (1999) claims Internet technology is an engine of social change which has modified "our hopes and dreams" (p. 2).

Despite the ubiquitous nature of technology, some researchers have difficulties labelling the examination of web conferencing, email correspondence, or other CMC (Computer Mediated Communication) as ethnographic work, perceiving ethnography to be "the systematic description of human behavior and organizational culture based on first-hand observation" (Howard, 2002, p. 553).

4.2.1 The focus of the research – selecting what

The main objective of any ethnographic research is to obtain a *thick description* (Nocera, 2006; Wittel, 2000). Geertz (1973) defines this phrase (originally used by Gilbert Ryle) as keeping extremely descriptive ethnographic records. The ethnographer is present in his or her participants' daily lives, collecting all possible data to facilitate understanding of the issue of concern. Ethnography in cyberspace is a study of online interactions (Gajjala, 2000) which can be realized in various forms. Beaulieu (2004) makes a distinction between information spaces, such as the web, communication spaces, such as

news groups and listservs, and interaction spaces, such as chat-rooms or virtual worlds. All of them, according to Beaulieu, offer fertile ground for gaining knowledge.

Numerous researchers have undertaken social network analysis, choosing an identified community and selecting important nodes in the social network as field sites. Such nodes represent key events full of important social interaction. Some researchers use archived materials, while others prefer collecting *live data*. The selection of the field site depends on the purpose of the research and the research question. The most generic division of online research would be between research about the Internet and research by means of the Internet (Beaulieu, 2004; Harrington, 2000).

4.2.2 Recruiting participants – selecting who

Recruiting participants for a research study, as well as obtaining consent from the existing members of the community, is challenging (Beaulieu, 2004). Online participants frequently inhabit the virtual space under an assumed name and/or an avatar. In addition, presence in a discussion forum, blog, or game is voluntary and lacks regularity in frequency of access, obligation, commitment to the virtual community, and even consistency in purpose for any given appearance.

Utz (2002) wonders how to announce a research effort. Sveningsson (2004) claims there is no way of informing everyone potentially affected by the study or the researcher's presence. In practice, that would require the researcher to introduce herself at every log-in, which might disrupt the community, conversation, or throw off natural behaviour. Getting permission to conduct research from a forum facilitator would not mean the actual participants had agreed to be under observation. According to Lindlof and Shatzer

(1998), the researcher should try to obtain some degree of informed consent. A way of avoiding the whole process is to ask for consent after the phenomenon has been observed and the data collected, which in itself raises a multitude of ethical questions.

4.2.3 Being "in the field" - selecting where and when

The meaning of field-site has changed, and the notion must thus be redefined (Gupta & Ferguson, 1997; Rice & Berg, 2004; Wittel, 2000). A contemporary cyberethnographer faces numerous questions. What constitutes fieldwork (Eichhorn, 2001)? Where is the field (Isabella, 2007)? What constitutes a community, and where are the borders? The researcher must examine an identified community in a social network (Howard, 2002; Lyman & Wakeford, 1999). Community can no longer be understood in relation to geographic location (Eichhorn, 2001; Kuntsman, 2004): the community turns into a network; local community is not local geographically. As Beaulieu (2004) states, "the net is ambient – nowhere in particular but everywhere at once" (p. 154). Jewsiewicki and Pastinelli claim that "networks have brought emancipation from geography" (2000). People grouped into physical localities create functional communities, whereas people online aggregate into symbolic communities based on lifestyle or identity (Fernback, 1999). Virtual communities are "communities of meaning" (Fernback, p. 210).

Wittel argues that the absence of physical context is a result of the "displacement between ethnographer and her field" (2000, p. 7). Many theorists question the appropriateness of the Internet as an object of ethnographic study for scholars, particularly because it lacks a notion of place and face-to-face interaction (Beaulieu, 2004; Eichhorn, 2001). While Beaulieu claims multi-sited ethnography can be costly because of "a moving field and changing actors" (p. 144), Gatson & Zweerink (2004)

believe cyberethnography is inexpensive research. Much online research is done at the ethnographer's home, so the notion of field is less clear (Eichhorn, 2001). In addition, the researcher easily "moves" from one location to another with multiple online sites as research fields (Hine, 1998; 2000). Instead of defining physical research locations, it is often more useful to define online research locations.

Ethnography is a long-term engagement with a social setting (Miller & Slater, 2000) through a variety of methods. While it may be long-term, however, the presence of the researcher in the community remains temporary. Eichhorn (2001) describes her experience as an ethnographer as follows:

> I remained a tourist: awkward, lingering on the sidelines, unsure of how to participate, and always forced to explain my presence and my motivation for being there in the first place. (p. 572)

Not only is the researcher's presence in the community temporary, so is that of the members (Ward, 1999). Jewsiewicki and Pastinelli (2000) find one of the appealing characteristics of online communities to be the ease of access and departure. Anyone can come and go (Jacobson, 1999). Social engagement with no real commitment gives members an additional sense of freedom.

Virtual spaces are not only immersive but highly dynamic. Miller and Slater (2000) identify four aspects of the Internet which enable its users to change. This *transformable* aspect of the Web makes ethnographic research even more difficult. Hine (2009) emphasizes the complexity of the digital environment's dynamic nature in terms of deciding when to start and end the research process, while Schwaller (1998) is more

concerned about the constant updating of information on the Web and consequent changes, revisions, and deletions of data.

4.2.4 Deciding on the research instruments – selecting how

As Hammersley and Atkinson note, ethnography "bears a close resemblance to the routine ways in which people make sense of the world in everyday life" (1983, p. 3). Hammersley and Atkinson distinguish between two basic paradigms used to study the social world: positivism, which promotes experimental and survey research based on scientific principles, and naturalism, which promotes study in the natural state during which a researcher observes the social world without interference. No matter how much the researcher tries to stay neutral and objective, in both cases the explored site influences the researcher. The results of the study are a combination of observation, interpretation, and reflective practice (Hammersley & Atkinson, 1983).

The main ethnographic instrument is observation. The researcher can and should take notes constantly. Throughout, the researcher pays attention to formal and informal interactions and how participants use the virtual space (Williams, 2007). This can be challenged by occasional visitors. There are also *lurkers*, observers who are difficult to track or record. The researcher can record data using audio (Williams, 2007), video, or photographs (screenshots in online environments), and collect stories and information on how participants see the world (Howard, 2002).

The researcher can observe the interactions of people with each other, with technology, and with artifacts. To document the research process, the researcher may choose to use a blog or create a wiki if contributions from participants might be expected. Open-ended

interviews (Ruhleder, 2000; Bortree, 2005) are frequently used in ethnographic research, although the researcher cannot have complete control over the interview process (Ward, 1999).

Online research is multimodal (Dicks, Soyinka & Coffey, 2006; Thomsen, Straubhaar & Bolyard, 1998). Both participants and researcher may use emails, instant messages, discussion boards, websites, virtual environments, phone, listserv, off-line interviews (Taylor, 1999), images, or videos. As Dicks, Soyinka and Coffey argue, ethnographic work should be seen as a fusion of different media forms rather than an application of discrete, easily separated semiotic modes. These different media forms offer different aspects of the observed phenomenon, and only when taken holistically can we gain a more comprehensive understanding. Dicks and Mason (1998) claim that "the synthesis of the visual, aural, verbal and pictorial planes of meaning holds considerable promise for the expansion and deepening of ethnographic knowledge" (p. 1).

4.3 Observer vs. Participant

A researcher must ask herself a number of questions about her role in this process before she begins recruiting participants and collecting data. Who does a researcher represent? For whom does she speak? How will she say what she must say (Gajjala, 2000)? The ethnographer should make her goals as clear as possible (Beaulieu, 2004) by answering these questions.

A researcher conducting research can take different roles. Sveningsson (2004) describes two approaches: Lieberg's distinction of four categories (Lieberg, 1994) and Patton's two views based on extent of participation and extent of openness (Patton, 1990). According

to Lieberg, a researcher can take the following roles: 1) a participant observer, 2) a reporter (with no participation), 3) a "wallraff" (hidden participant) and 4) a spy (hidden observer). Patton, on the other hand, claims there are three levels of participation: full, partial, and no participation (only observation). Observation can be open (known to all involved), partly open (the researcher is known to some), or hidden.

For successful collection of data, the researcher must gain trust and form genuine friendships (Howard, 2002). This is difficult in online environments where neither the participants nor the researcher can be sure of each other's intentions and honesty, especially in the absence of visual cues (Ward, 1999).

If the goal is to observe and record the behaviour of participants in their natural setting, then the presence of the researcher may influence that behaviour and lead to misleading or incorrect results (Beaulieu, 2004; Eichhorn, 2001; Fox & Roberts, 1999; Goldman-Segall, 1989). Beaulieu wonders how authentic human interactions can be when the presence of the researcher is known (Constable, 2003). Power relations are in place even when unintentional. Online environments, however, offer an opportunity for the researcher to be invisible, to lurk (Gatson & Zweerink, 2004). The question constantly arises: should the researcher disclose her identity (Beaulieu, 2004; Crowe & Bradford, 2006; Gatson & Zweerink, 2004)? According to Sveningsson (2004), remaining hidden may have advantages because participants will behave naturally. However, remaining hidden presents ethical challenges. As well, lurking is not sufficient for understanding what is happening inside a community (Isabella, 2007). Participation means acceptance and access to thoughts and knowledge that are otherwise difficult to reach (Nocera,

2006). Participation versus Observation -- in a game, for example -- is a completely different experience.

In order to be a participant, the researcher must understand the dynamics of the game and interact with other players (Mortensen, 2002). By participating, the researcher becomes a subject and a part of the narrative (Howard, 2002). The ethnography becomes auto-ethnography as well; part of the content is the researcher's personal experience (Howard, 2002). Active participation and self-reflection can be a valuable part of research and can inform it in a rich, unique way. Schwarz McCotter (2001) describes the transformation she experienced in moving from an observer to participant role:

> I endeavored to critically look at and question everything that went on, particularly my role in the research. What I was not prepared for was the emotions and discomfort that would arise from such close examination. My role in the group changed from being just a participant to being a participant observer, and who knew such a seemingly subtle shift would feel so disquieting? (p. 10)

The researcher's active participation in the online community has its own consequences (Gatson &Zweerink, 2004). The researcher can be extremely self-conscious about her presence and her influence on the direction of a dialogue or event (Schwarz McCotter, 2001). Being at the same time observer of, participant in, and interpreter of the behaviour and data makes the research process more difficult. Keeping these roles separate is what Beaulieu calls "disciplining the ethnographer" (2004, p. 148).

4.4 Data Collection

One of the main tasks of the ethnographer has always been to take field notes and record participant commentary. In traditional ethnography, verbal interactions are the primary form of self-presentation; in online environments, this primary position is often occupied by text (Bortree, 2005). Often online interactions take place through writing, which becomes an important and already visible permanent trace of individual and social engagement (Beaulieu, 2004; Eichhorn, 2001; Harrington, 2000). Discussion postings, quotations and transcripts can all be traced using search engines (Beaulieu, 2004).

In the past, the ethnographer bridged the gap between oral and literary cultures. In the present, where thoughts, feelings, ideas and experiences have often already been written down by research participants, the ethnographer becomes a mediator between raw data and theoretical conclusions (Fabian, 2002). Beaulieu (2004) suggests,

> If ethnography of the Internet is not about writing down the oral other, it may be about capturing and putting down on paper the digital other. (p. 158)

Beaulieu argues that "textualization is at the heart of the ethnographic enterprise" (2004, p. 156); she thus wonders how already written stories on the Internet change the ethnographer's role. The legitimacy of these stories and their writers are not necessarily questioned. Fabian (2002; 2008) claims the role of the ethnographer has changed profoundly and wonders whether the ethnographer will become a commentator only, with commentary emerging as a new genre.

The ethnographer is not interpreting culture through text; culture is itself a text (Beaulieu, 2004). Despite the increased multimodality of the web, "Language is [still] a central

component in the construction of cyber-reality and the virtual community" (Ward, 1999, p. 97). Communities are expressed through text. Therefore, according to Gajjala (2000), all participants could be seen as informants at various levels. Gajjala argues that "online texts are ethnographies" (p. 6), and sees online texts "as embodied digital subjects" (p. 2).

At times it is easier to type or write about sensitive issues and learn about another person's thoughts or feelings than to discuss them verbally (Bortree, 2005; Gatson & Zweerink, 2004). What is not said can be as important as what is said. Catching and exploring moments of silence is extremely difficult in online environments where the majority of communications could be realized asynchronously.

Bringing the text forward pushes the body and non-verbal communication into the background. Slater (2002) discusses the issue of body absence in online environments. He claims that the participants are present through textual interaction: "you are what you type" (p 231). The environment is therefore dematerialized. Eichhorn (2001) states that when bodies are no longer present they are no longer relevant. However, later in the article, she recognizes that, while invisible, the bodies are not inconsequential. Slater's article is based on his study of participants who communicated exclusively through chat. His discussion does not take into consideration other possible modes of communication which the improvement of high-speed internet access in many countries make increasingly present, such as video contributions, and the photos that appear with posting in forums or blogs.

Photographs may or may not be realistic. With video and photographic self-presentation, the validity of "dematerialization" alluded to earlier comes into question. As Williams

(2007) points out, "forms of interaction need no longer be restricted to text": "social interaction becomes more complex, with the combination of the textual utterance and the corresponding avatar gesture" (p. 9). Avatar positioning, appearance, and performance, he continues, add to identity creation. Williams (2007) recognizes the limitations of observing avatars as representations of individual identities; their creation may depend heavily on the programmable features of the application in use and the participant's technical skills in customizing the avatar.

Some researchers, according to Ward (1999), question the possibility of human interaction based only on text without face-to-face contact as a mechanism for building a community. Williams (2007) concurs with Atkinson (1990) that "ethnographies are textual constructions of reality" (Williams, 2007, p. 8). He emphasizes the need for further exploration to understand how communities are maintained "within spaces devoid of physicality" (p. 11). Beaulieu (2004) notes that some researchers see online communities as only illusory and para-social, with technology forming a barrier to the study of real phenomena.

Integrating into an online community, just as in face-to-face communities, means learning how to fit in through an understanding of netiquette, jargon, acronyms, emoticons, and other conventions (Nocera, 2006; Gatson & Zweerink, 2004; Howard, 2002; Williams, 2007) commonly used by members. Becoming a recognized and accepted member of a community is not easy and can take time (Gatson & Zweerink, 2004). In virtual worlds where avatars can move through a three-dimensional space it is even more difficult to make an observation, as the researcher's avatar cannot unnoticeably follow another avatar (Williams, 2007).

4.5 Identity

Data collection in online environments presents a unique challenge since the identity of the research participants is practically unknown. New media are especially suitable for exploring identities from various sociological and psychological perspectives (Jewsiewicki & Pastinelli, 2000; Lindlof & Shatzer, 1998; Wilson & Peterson, 2002). Virtual spaces allow participants to become "what one thinks one really is (even if one never was)" (Miller & Slater, 2000) and project what one would like to be or could be. Role-playing games, such as Massively Multiplayer Online Role Playing Games (MMORPGs), Multi-User Domains (MUDs) and virtual worlds are, according to Utz (2002), spaces to play with identities. Utz writes:

> This sort of slipping into another role is not only a possibility, but the focus of attention. When logging in for the first time, a name, gender, and race (e.g., dwarf, elf) have to be selected for the character. (p. 276)

Mortensen (2002) claims that we always play a role, either consciously or unconsciously, responding to the expectations of others or ourselves. In his study, he explores how these imaginary roles are embedded in the fiction within a game, and how the ways in which they develop are limited by game constraints and rules. Mortensen sees the players as identities that create their own reality and make meaning of their existence in the gameworld. The participants are often known only by the name/pseudonym they present themselves with or by their avatars. Their identity is based on textual or visual representation (Taylor, 1999). Exploring how these online bodies are created, constructed, and reconstructed can be very exciting (Taylor, 1999).

The representation of the self and interaction with others takes place on two different levels in virtual worlds. One level is interpersonal, developing a dialogue with another web user; the other is mass communication (Bortree, 2005), including all potential readers of the website, blog, or virtual world inhabitants. According to Bortree, who studied teenage girls' weblogs, this duality creates a conflict that needs constant negotiatation. The opportunity for public but anonymous identities allows various kinds of agency (Whitaker, 2004). Jacobson argues that anonymity and pseudonymity makes research more complex.

Identities in various communities are created based on common understanding and interest rather than geographical proximity. A sense of place is therefore far less important than a sense of belonging to a community (Beaulieu, 2004; Fox & Roberts, 1999; Howard, 2002; Ward, 1999). The participants in online communities build and maintain relationships with others (Bortree, 2005; Nocera, 2006). How one represents oneself is equally important in virtual as in actual life and elicits similar responses from other participants in interaction. Changing an identity/avatar, as Schroeder and Bailenson (2008) discovered, changes the behaviour of others towards the player.

Bortree (2005) draws from the studies of Dominic (1999) and Jones (1990), who identify five strategies for self-presentation: 1) ingratiation (goal: to be liked by others), 2) competence (goal: to be perceived as skilled and qualified), 3) intimidation (goal: to gain power), 4) exemplification (goal: to be perceived as possessing high moral standards), and 5) supplication (goal: to be perceived as helpless and in need). Based on Dominic and Jones' findings, Bortree argues that ingratiation is most often expressed online.

Online identities are in constant flux. The persons behind them often have different identities in different communities, or even inside one community (Gatson & Zweerink, 2004; Utz, 2002). In addition, they can present different aspects of self in different places (Miller & Mather, 1998) and thus have a 'distributed self' rather than multiple identities. The reliability of their "plural existence" (Taylor, 1999, p. 443) becomes questionable.

It is difficult to confirm the validity of information provided on the web, especially when subjective experience is in question (Beaulieu, 2004; Fox and Roberts, 1999; Williams, 2007; Wittel, 2000), or to verify the identity of research participants. There is no guarantee that participants are who they claim they are (Eichhorn, 2001), nor is it possible to see who is at a keyboard posting messages at a certain point in time (Jacobson, 1999). Therefore, a high level of trust needs to be established.

Despite the instability of identities over a period of time, in certain communities, especially online games and virtual worlds, "a relatively constant identity is gradually developed" (Utz, 2002, p. 278). Kelly (2003) looks into the representation of self in virtual environments and how that representation is negotiated through interaction with others, arguing that it is shaped and transformed by social context. Wilson and Peterson (2002) believe online interactions, and thus online identities, cannot be fully understood without considering the offline context. This presents a challenge for the online researcher, especially when looking into games such as ARGs, where players act as themselves, not imaginary characters. Having insight into their offline life is crucial for understanding their behaviour and relations to other players online. Eichhorn (2001) states that, " knowing people only at the level of texts was both closing off and opening up research routes" (p. 571).

Identity, according to Slater (2002), depends on the presence of physical bodies. When they are gone, there are no identities. He calls this a "dynamic" feature of the Internet Relay Chat (IRC) environments. Relationship building is burdened by the possibility that the other may disappear without a trace. Hence, social order is impossible to establish (Slater, 2002). For the ethnographer, Schroeder and Bailenson find, "behavioural fidelity is more important than representational fidelity" (2008, p. 331). The photo-realistic appearance of the avatar is less important than the non-verbal communication it uses in interaction with others.

4.6 Research Instruments

In collecting data the researcher works with numerous artifacts: catalogues, archived pages, images, search engines, logs, information about the game or the community, and personal blogs (Taylor, 1999). Goldman-Segall (1989) describes using video as a tool for gaining thick description. For her this means providing rich context, enhanced by video technology (i.e., through images and gestures). The pure quality of the image, however, (that is, its resolution), is not what primarily matters.

Interviews are structured by both the researcher and the participants (Hammersley & Atkinson, 1983). In online environments, interviews often take place in a non-face-to-face setting. As mentioned above, the identity of informants is thus difficult to verify.

When conceptualizing research, the researcher needs to define a unit of analysis, one that could be larger, such as an organization or group, or smaller, such as an individual (Williams, 2005). The selection of the research instrument will depend on the unit of

analysis. Surveys, for example, are useful for discovering broader patterns while interviews give insight into individual behaviour and meaning-making.

Ethnographic research can be done when all the interactions are over (i.e., when the game is completed or the discussion finished). In that case, the ethnographer works with artifacts that are freely available on the web. Since the participants are no longer present, there is no opportunity to use interviews or any kind of survey instrument.

According to Williams (2005), who examines the best methods for researching video games, no single approach is superior to all others. Williams suggests using multiple methods from various disciplines that can complement each other and lead to better understanding of the phenomena.

4.7 Data Analysis

Data that is collected and analyzed is most often selected by the researcher, as interpretation is done by the researcher. Thus every research study begins with the biases of the ethnographer (Goldman-Segall, 1989).

4.7.1 Analyzing narratives

The ethnographer, claims Eichhorn (2001), must rely on personal stories, testimonials, hearsay, and gossip, and take them as legitimate, reliable, credible sources of subjective experience and knowledge. Clark, Demont-Heinrich and Webber (2004) state that personal narratives can illustrate "links between individual narratives and public frameworks of meaning" (p. 533). These narratives help us understand cultural and temporal context. Every personal narrative is a reflection of its social context. Eichhorn believes that "ethnographic truths are always at least partial fictions" (2001, p. 574).

Hence, the ethnographer's objectiveness (towards something that is a partial fiction) comes into question.

In the era of computer technology, these personal or collective narratives find their space and mark their presence in digital environments. The Internet as a medium is part of or embedded in other social spaces. As Ruhleder claims,

> Work in hybrid settings – worlds that cross and integrate both physical and virtual – pushes us to explore different ways of studying and representing technologically embedded activity. (2000, p. 13)

Green argues that virtual realities are part of social worlds; at the same time, they are "objects, media, tools, signs, cognitive activities and narratives" (1999, p. 409). Taylor (1999) explores online life, bodies, and self in virtual environments as representations of legitimate presence. He chooses not see them as an extension or reflection of offline experience but as a life of its own. Ward, on the other hand, argues that the physical world always constrains the virtual, making virtual worlds not wholly convincing. Nonetheless, virtual worlds can strongly impact the physical. Isabella (2007) states that actual and virtual lives are connected. Ward (1999) gives the example of Lara Croft, a character from the game "Tomb Raider" (1996), who became a role model and sex symbol in the 1990s. This identification is usually associated with real individuals rather than game characters.

Gajjala (2000) and Ward (1999) call the space hybrid (p. 3), suggesting that actual and virtual spaces merge and become one, neither wholly physical nor wholly virtual. Schroeder and Bailenson (2008) make a distinction between imagining being in a

different place than one`s physical locale, as when reading a book or watching a movie, and being immersed in a different place, as in a game or virtual world. Immersion in virtual reality must be with all the senses, so that one loses track of time and one`s sense of physical presence in the actual world.

Fernback, explaining that reality is socially-constructed, claims "human contact in cyberspace is artificial" (1999, p. 213). He believes that community "exists in the minds of the participants" (p. 213). However, he concludes that since communication is the core of the community, that community is actual regardless of whether or not it exists in a physical locality. In addition, human relations created online, as Nocera (2006) believes, are actual. Thomsen, et al. (1998) believe relations created in virtual space reflect the nature of human relations in actual life with their necessary changes and interactions.

Participants sometimes see a virtual space as a substitution for a actual one. Moreover, they frequently treat virtual spaces as actual (Harrington, 2000; Miller & Slater, 2000). Virtuality, Miller and Slater posit, is a space for both representation and interaction. Slater (2002) reduces Internet experience to the use of different media technologies. He claims that the Internet should not be treated "as if it were really a virtual space, insulated from the rest of social life" (p. 242). The (non)existence of an opposition between virtual and actual is a topic of debate among many researchers (Gajjala, 2000; Ward, 1999; Wilson & Peterson, 2002).

Being or becoming "virtual" is a complex phenomenon. It is not simply the use of computer systems and various technologies; rather, it embraces relation-building between other participants and the self (Green, 1999). The relationship between what is

experienced in actual life and what is experienced online intrigues many researchers (Gatson & Zweerink, 2004). Ethnographers, according to Gajjala (2000) and Williams (2007), construct a new version of reality when trying to represent a social situation. The role of the researcher, Green (1999) states, is to "organize, accentuate, and translate elements" (p. 413) of the social worlds he or she observes.

4.8 Results

Geertz writes, "anthropological writings are themselves interpretations, and second and third order ones to boot. (By definition, only a 'native' makes first order ones: it's his culture)" (2000a: 15). Further, Geertz states that, "The ethnographer 'inscribes' social discourse; he writes it down. In so doing, he turns it from a passing event, which exists only in its own moment of occurrence, into an account, which exists in its inscriptions and can be reconsulted" (Gatson & Zweerink, 2004, p. 194).

The results of ethnographic research combine theoretical reflections and encounters with social worlds (Green, 1999). Baym and Markham (2009) claim that the results represent a carefully-edited collection of data and analysis that depends on the audience and the goals of the researcher. Voithofer (2005) acknowledges the importance of the voice of the researcher in ethnographic study. The researcher becomes incorporated into the narrative, as described by Walczak (2009).

Researchers have begun to use new forms of discourse to discuss the experience of conducting research and to present the results they obtain (Schwarz McCotter, 2001; Spry, 2001). Schwarz McCotter argues for the value of different representational devices, such as narratives of the self, poetic and literary representation, ethnographic

fiction and drama, and other mixed genres. Beaulieu (2004) states that the data represents a hybrid of various sorces of information in the form of journals, academic publishing, and also as a storage space for artifacts and other, non-paper based forms. Fabian (2002; 2008), as previously noted, sees "commentary" as a new and adequate genre for recording ethnographer's reflections on participants' textual presence on the web.

Because of the difficulty of demonstrating the authenticity of data collected from and through the web, the researcher must approach the process of results reporting critically and reflectively (Orgad, 2009). Gajjala describes cyberethnographic study as a "multi-layered investigation of self and others" (2009, p. 67).

4.9 Privacy and Copyright

Gatson & Zweerink (2004) claim that just as presence in virtual space is very public, so is ethnography; however, there is no consensus about what precisely is public or private on the Internet. Some researchers compare a researcher sitting in a city square making notes about the behaviour of passers-by to a researcher recording information posted openly on the web with no special-access requirements (such as a password-protected site), as in blogs or open discussion forums (Jacobson, 1999). The question arises: have those passers-by or the discussion forum participants consented to have their words recorded, cited, or published in an academic journal, and is it ethical to do so? If the research participants remain anonymous, some researchers say, there is no ethical breach (e.g., Jacobson, 1999). If it were otherwise, it might be argued that much ethnographic research becomes not feasible.

Jacobson (1999) claims that all messages posted to publicly-accessible places such as virtual communities and forums are subject to copyright; others see copyright violation only in relation to content posted in password-protected environments. Because of the nature of the medium, issues of representation, authenticity, and authorship become very complex (Gajjala, 2000). Many issues over copyright law and ethical guidelines for conducting research with human participants in cyberspace remain unresolved and will need to be raised by cyberethnographers.

4.10 Conclusion

As Escobar (1994) argues, new technologies deconstruct and reconstruct culture. They emerge out of particular social and cultural conditions and help create new ones. Anthropologists, ethnographers, and educational researchers must be open to these changes and ready to explore their impacts.

Digital technologies have expanded our notion of what constitutes a field. Online research communities are created and often exist without reference to geographical location. As such, virtual networks present a special challenge for ethnographic study. In some cases, interactions and disclosures are easier in an online environment than in person. Communities created around online games, for example, exist only in virtual space. They largely lack face-to-face alternatives. However, online events and interactions increasingly affect actual life occurrences. For members of these communities, social reality is where relationships are built and interactions live, either on- or off-line.

The role of the virtual ethnographer has fundamentally changed. The dichotomy between observer and active participant remains current. Nonetheless, the relationship between the researcher and the participants must be nourished so that it honours both the integrity of the participants and the quality of the research.

As the Internet is already "a collection of texts" (Hine, 2000, p. 50), the ethnographer has become more of an interpreter of textual practices than a recorder. Every segment of research design needs to be carefully analyzed and often adapted from traditional practice to meet the conditions of the new environment. The researcher must deal with issues of identity and online representation, privacy and copyright, and so on.

Chapter 5: Ethics in Immersive Gameworlds: A Study of "Urgent Evoke"

5.1 Research Design

5.1.1 Setting

Alternate Reality Games, as previously noted, are an emerging type of game that neatly interweaves reality and fiction. Essentially, ARGs are usually time and sometimes location-sensitive; that is, they are open to players for a limited amount of time or are played only in a certain location such as a city (for instance, "CryptoZoo" in San Francisco and New York) or a country ("What happened to Marika?" in Sweden). The ARG is frequently announced ahead of time, raising expectation and attention to a critical point. Its duration is either pre-determined by game designers or dependent on the participants' abilities to solve a problem, puzzle, or mystery. Conducting research on ARGs, therefore, is a risky business, particularly with regards to academic deadlines. It is never known when a game will appear or whether it will be suited to analysis. Firstly, the ARG must fit the focus of the research; secondly, it must be designed well enough to attract a sufficient participant total that will keep the game alive to the end.

Again, my interest in the ability of ARGs to heighten ethical or moral sensitivity was fostered in 2008 when I explored the artifacts of a recently-finished ARG, "World Without Oil" (WWO). Having experienced firsthand the challenges of an oil crisis in war-torn Serbia, I was skeptical about the game's ability to foster understanding of an oil crisis' implications in its players. Too many players stipulated that their explorations were simply "fun," suggesting they learned nothing about the seriousness of an oil crisis.

As I was aware of Jane McGonigal's work, I was excited to read a posting on her blog on January 11, 2010: "URGENT EVOKE: Help us run a 10-week crash course in changing the world" (McGonigal, 2010). The posting announced a new ARG starting in March 2010. As its title suggests, the game was seen as an opportunity to create positive social change on a global scale. Jane McGonigal and her designer team focused on the African continent, a broad region in need of urgent solutions to challenging issues. Or, as her blog announcement stated:

> The goal of the game is to help empower young people all over the world, and especially young people in Africa, to come up with creative solutions to our most pressing problems: hunger, poverty, disease, war and oppression, water access, education, climate change. (McGonigal, 2010)

In addition to being created by a well-known game designer, the game was funded by the World Bank and promised a number of attractive awards to participants, including funding for the best project proposals, travel scholarships to the first "Evoke" summit in Washington D.C., and mentorship opportunities. All these factors indicated that "Urgent Evoke" would be an interesting game that might make rich contributions.

"Urgent Evoke" (or "Evoke") officially launched on March 2, 2010, although the game blog opened a few months before that date, from the end of January, to explain some of the game's rules and expectations. "Evoke" met the requirements I had set for selection of an ARG: 1) it dealt with actual life issues; 2) it seemed like a game that would offer opportunities for critical literacy and growth in knowledge and ethical sensibilities; 3) it used NING (a social network platform) as its gamespace, which potentially meant a

higher inclusion of players from around the world. Therefore, the ARG "Urgent Evoke" was chosen as the site for this research.

5.1.2 The use of social media

ARGs are advantageous because they generally have low technology requirements, although "low technology" is a relative phrase. They are not developed for a special platform that requires installation, download, or the use of DVDs; rather, they encourage players to utilize their own choice of a variety of social media platforms with which they are already familiar or which they can learn without much effort. Participants interested in playing "Evoke" were asked to register for a NING site. NING allowed easy access to members' profiles and direct one-on-one contact through its own email system or posts "on the wall" (comments on personal pages). Each member was allowed ample space for his/her own blog, image and video contributions.

EVOKEblog was a community blog that aggregated all individual postings into a large common blog site. In addition, the system hosted discussion forums, which were either unmoderated or moderated by the game designers and mentors. These forums dealt with the following topics: 1) Missions (with weekly updates and explanations); 2) Challenge the Network (challenges posted by members to other members of the community); 3) Agent Resources and Utilities; 4) Suggestions and Questions; 5) Thoughts and Ideas; and 6) Uncategorized (miscellaneous topics).

All interested players had to register for the game and await the administrator's approval, essentially a confirmation of registration. There was no filtering or authentication of registrants. When my own access was "approved" and I entered the site on the first day

of the game, more than 200 other community members were already playing. By the end of the game on May 12, 2010, that number had reached 19,204. While the creation of an ID and password was required, "Evoke" was open to anyone interested in participating. The only restriction, expressed as "recommended," was that players should be at least 13 years of age.

5.1.3 Narratives

Narratives can be construed in many different ways. Games like "Evoke", which are designed using social media platforms, develop, grow and last because of the players' participation. The primary feature of games, as Aarseth (1997) points out, is their power to tell stories in a way different from traditional narrative. Most of the content in "Evoke" represented player-generated contributions. The players talked about personal experiences but also engaged in discourse with other players using different semiotic modes. The texts, images and videos uploaded to the blog varied in size, quantity and duration. Despite individual differences among players, all narratives were personal. They ranged from descriptions of local situations, difficulties and issues, to reports on events and actions, to presentations of a problem or a question that requires immediate solution or attention.

Narratives are understood here in their broader sense, as a mode of thinking (Ryan, 2007). Eevery utterance was a reflection of its author – a reflection that told a story about its creator. Thus even a short comment, such as "Great post!", is viewed as part of the greater narrative.

5.1.4 Game structure

The game lasted ten weeks. Each week, a quest and mission that Agents needed to complete were identified. The topics were revealed, or "unlocked," each Wednesday during the game period (Fig. 7). These topics were as follows:

Week 1: Social Innovation

Week 2: Food Security

Week 3: Power Shift

Week 4: Water Crisis

Week 5: The Future of Money

Week 6: Empowering Women

Week 7: Urban Resilience

Week 8: Indigenous Knowledge

Week 9: Crisis Networking

Week 10: What Happens Next? (Fig. 8)

Figure 7 Gradual "unlocking " of the missions

© Gradual "unlocking the missions" (Screenshot). Boskic, N. 2010. http://www.urgentevoke.com/

Figure 8 All missions revealed in the final week

© All Missions (Screenshot). Boskic, N. 2010. http://www.urgentevoke.com/

The topic of the week was preceded by a scenario set in the future and presented in the form of a comic strip between one and seven pages in length. The game's principal

characters and their roles were graphically represented through this medium. For example, Agent Alchemy ("Urgent Evoke" mentor) was typically the character who identified the given crisis and sent an urgent evoke to all the Agents, calling them to solve the problem. In response, Agents were expected to tackle the mission as follows: complete a quest related to the topic; accomplish three tasks: Learn, Act, and Imagine.

The quests were invitations for players to submit personal narratives and expressions of values and beliefs related to the missions. The quests were as follows:

Week 1: Secret Identity

Week 2: Motivation

Week 3: Environment

Week 4: Amazing Stories

Week 5: Pivotal Moment

Week 6: Call to Action

Week 7: The Opposition

Week 8: Superhero Symbol

Week 9: Secret Allies

Week 10: News from the Future (Fig. 9).

Figure 9 "Urgent Evoke" quests

© "Urgent Evoke" quests (Screenshot). Boskic, N. 2010. http://www.urgentevoke.com/

After completing the quests, players proceeded to the "Learn" part of the mission. This section consisted of: a description of the topic and its requirements; a number of links and directions allowing participants to search for more information about the issue. The next step, "Act," was to think about personal engagement or take action in a local community and report back to the virtual community. The final step, "Imagine," was a call to imagine the world, usually ten years ahead in 2020, and write a "vision" or imaginary story about the future.

The play elements of "Evoke" were embedded in the game in various ways. First, all members of the community were "Agents" with the potential to become "superheroes" if they completed all the quests and missions. Secondly, player contributions were awarded with points given by readers (i.e., other players). Points could be earned for ten different skills and abilities: collaboration, courage, creativity, entrepreneurship, local insight, knowledge share, resourcefulness, spark, sustainability, and vision.

The number of points earned was carefully monitored and posted on the Leaders' page. An explanation was given at the top of that page:

> A Leader Cloud is more than a scoreboard — it shows you all the different ways EVOKE agents are contributing to the network, right now. Use the leader cloud to discover the newest heroes, most recently active heroes, most power-voted heroes, and more. (Evoke, 2010)

Some ranking lists were generated randomly, such as the newest heroes and the emerging heroes (this gave almost all participants an opportunity to appear on the list of leaders). The progress of each individual player could easily be viewed on his/her profile page.

At the end of the game's last week, interested Agents were asked to submit an "Evokation," or project proposal. The project had to reflect a sound idea with good strategies for realization. It needed to have the potential to create change in a local community. The best projects were rewarded with $1,000 USD in start-up money or with a mentorship (consulting services by a successful professional in the field). Other "comforting awards" were given by the World Bank Institute, such as "Class of 2010"

Certificates for those who completed all the quests and missions during the crash course for changing the world.

5.2 Participants

5.2.1 Recruitment

The goal in the first instance was to recruit five to ten individuals over 18 years of age taking courses in or about games, or similar studies, at one of two universities in the Lower Mainland of British Columbia, Canada, as well as other individuals over 18 years of age who were gamers already or were interested in playing the game. As stated, my focus for this particular study was on adult game players; thus I did not approach any children or youth.

Snowball sampling was used to recruit participants. I posted information (Appendix A) about the study on message boards at four post-secondary campuses in the Lower Mainland of British Columbia. In addition, I sent an email with an attached Call for Participation (Appendix B) to professional colleagues and friends, and requested that they distribute the invitation further.

Some theorists (Howard, 2002) think snowball sampling introduces bias in the overall sample. I did not deem this problematic because I was not attempting to generate a representative sample. This was a qualitative study, the intent of which was to generate rich data from a small sample.

There were no responses from Vancouver or the Lower Mainland area. Four people responded, two from Serbia and two who had been living in New Zealand for about 15 years after immigrating from Serbia. All four first respondents were known to me. To

bolster numbers to the target (n = 5-8) and to increase the diversity of the participant pool, I approached five players of "Evoke" from different continents (Asia, North America, Africa) and invited them to participate in the research within the first two weeks of the game. My selection of potential participants was based primarily on geographical location and diverse cultural background. I approached players who, based on the list of"featured Agents" in the first week of play, were clearly active in the game. Two joined the study, one from Uganda and one from Rwanda.

The consent forms (Appendix C) were sent to the participants by email and signed and returned in the same way. In some cases, I asked for additional consent. For example, some information about the participants was obtained during informal conversations over Skype. I asked for permission to use any part of these conversations. Any example or quote in this document which is marked as "from informal conversation" is thus used with the participant's consent.

5.2.2 My role as a researcher

I decided to take the role of an ethnographer-observer with no participation. I agree with the notion, expressed by many, that if the goal is to observe and record the behaviour of participants in their natural setting, then the presence of the researcher may influence that behaviour and lead to misleading or incorrect results (Beaulieu, 2004; Eichhorn, 2001; Fox & Roberts, 1999; Goldman-Segall, 1989).

I therefore created a profile and posted a short description of my role in the game on my profile page. I introduced myself as a doctoral student conducting a study on "Urgent

Evoke" and explained my reasons for not participating in the gamespace beyond creating a profile page. This is what I wrote:

> I work at the University of British Columbia as an instructional designer and I am doing my Ph.D. in Language and Literacy Education. I am interested in Alternate Reality Games and the possibilities of using those in education. I am following six people who are part of this game, and who gave me their consent to study their involvement. If you would like to know more about the study, or have any questions about it, you may contact me at any time.

In order to bridge the distance between being in and being out of the "magic circle" (Huizinga, 1970), I completed a few quests and did missions on my own, saving my data on my local drive. It did not take long, however, to realize this strategy limited my experience; the whole game was based on Agents' interactions and on sharing and discussing ideas. Nevertheless, I kept the roles of observer, participant, and interpreter of data separate, a process Beaulieu describes as "disciplining the ethnographer" (2004, p. 148). I tried to keep my relationship with the participants as professional as possible, especially those already known to me. Even when "Evoke" came up as a topic of conversation, I avoided expressing any opinions on the game or participation.

Of the six identified participants, five stayed in the game for the whole duration (10 weeks). One participant gave up playing the game at a very early stage. However, he agreed to interviews and completed the post-game survey.

Communication with the participants was performed primarily through email and Skype. All emails were kept in a separate folder and were archived. Participants were not aware

of who the other participants were, even though on occasion they interacted in the game. All participant comments and citations used in this document are unedited. Throughout this dissertation the following pseudonyms are used to identify the participants who participated in the research study: Sandra (Serbia), Sonja (Serbia), Nenad (New Zealand), Nina (New Zealand), Sentwali (Rwanda) and Mukasa (Uganda).

5.2.3 Participants' profiles

Sources of information about the participants were threefold: 1) data collected in the surveys and interviews; 2) information posted in the game space by the participants (mainly personal profile pages); and 3) data collected in less formal communication over email and Skype.

Table 2 Participants' demographic data

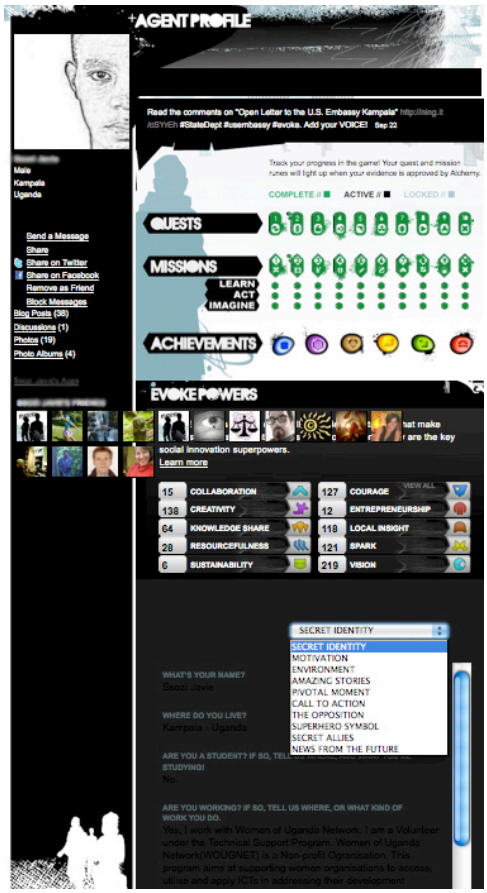
Research subject	Gender	Age range	Country of origin	Country of residence	Education	Native language
Sandra	Female	35-45	Serbia	Serbia	Master's degree in Distance Education	Serbian
Sonja	Female	35-45	Serbia	Serbia	Chemical Engineer	Serbian
Nenad	Male	over 45	Serbia	New Zealand	BEd in English Language and Literacy	Serbian
Nina	Female	over 45	Serbia	New Zealand	BEd in Sociology	Serbian
Mukasa	Male	19-25	Uganda	Uganda	BSc. Computer Science	Luganda
Sentwali	Male	26-35	Rwanda	Rwanda	BSc.	Kinyarwanda

There were three male and three female participants (see Table 2). Two participants were over 45 years of age, two between 36 and 45, one between 26 and 35, and one between

19 and 25 years of age. All reported they either had university degrees or were in degree programs. Three had had a social sciences background and three had a science background.

The profile page (Fig. 10) consisted of game results (accomplished missions and quests), points (game powers), responses to quests, and personal "postings on the wall." Responses to quests were "stories" in which participants revealed personal information about their goals, motivating influences, people that inspired them, and so on.

Figure 10 Profile page in "Urgent Evoke"



© "Urgent Evoke" Profile Page (Screenshot). Boskic, N. 2010. http://www.urgentevoke.com/

Sandra, who was over 35 years of age, lived in Belgrade, Serbia, and worked for the Ministry of Education. She was accepted to a Ph.D. program at the University of Belgrade; her interest was eLearning and policies surrounding online education. Sandra had been involved in numerous European and international projects. When I asked about her reasons for playing "Evoke" in the first survey, she explained, "I was curious to find out more about the potential of gaming for educational purposes" (Sandra, Pre-game Survey).

Highly self-motivated and hardworking, Sandra began the game with enthusiasm. A mother with a newborn, she was mainly at home working on projects while the baby slept. Her contributions were made when she had some time away from childcare. She explained that "this is something I would do soon – something I have dreamed about last night.... while still awake. I must go now – baby will wake up soon" (Blog_13727).

On her profile page, Sandra described herself as someone who could judge character well, recognize those in need of help, and offer but also get support with perhaps less difficulty than others. She believed she had many talents and much potential, but Serbia, still recovering from the political and economic turbulence of the last century's end, was not a fruitful environment for creativity and "big ideas." In contrast to other Serbian citizens, Sandra could be considered lucky in terms of economic status and standard of living; as a Ministry of Education employee, her salary was considerably higher than the national average. Sandra used English for work and communication with colleagues almost on a daily basis. She also spoke Italian and Russian. She did not spend a lot of time on social media sites, but used email and Skype extensively. She reported that she was fairly comfortable with "trial and error" methods of online learning, very open in

conversation, and never shy to ask for clarification if she needed it, as the following example reveals, "I asked about those minorities and he gave me more information about that" (Sandra, Exit Interview_17838).

Sonja was in her 40s. She worked as a chemical engineer in an executive position at the Oil Refinery in Novi Sad. The city is located on the Danube River in the fertile northern part of the country, often called "the granary." In the last decade foreign capital has decentralized the largest cooperative, keeping Oil Refinery employees such as Sonja in constant fear of losing their jobs.

Sonja was fluent in Hungarian and competent in Russian. She spoke English, but not as well as her other languages. Therefore she asked for her second interview to be conducted in Serbian and translated. Her contributions in the game, however, were in English.

As detailed in the first survey and interview with Sonja, she used a computer at work but mainly with specific applications for industry processes. About a year prior to this study, she decided to buy a personal computer for home use. Using the NING environment, posting messages in a blog, and finding her way through the game space was not easy for her. She did not use any of the social media tools and she had to download Skype so that we could conduct an interview for this study. She needed a lot of support with technology. Realizing this, Sonja perceived the game as an opportunity to improve her computer literacy skills. She said,

> I just want to tell you that it really helps me, this game in my part of life. When I said "in life," I mean in computer life, because this is really my first time to play this kind of game. (Pre-game Interview_7948)

Nenad moved from Novi Sad (Serbia) to Auckland (New Zealand) with his wife and their children almost 15 years ago. At the time of the study he was over 45 years of age. Nenad obtained his BEd degree in English Language and Literacy at the University of Novi Sad. He stated that when he came to Auckland knowing the language allowed him to support his family, allowing his wife to upgrade her education and search for a good position. The competition for teaching positions was difficult for Nenad as a non-native English speaker. He therefore decided to stay home, tutoring children in math and other subjects and working other part-time jobs as needed. At the time of this research, he worked as a Meter Reader for Wells Electrical.

Besides English and Serbian, Nenad studied Italian and spoke Russian, Hungarian, German, French, Bulgarian, and Greek. In the first survey Nenad described himself as an advanced computer user, though his experience with computers went back only a few years. He claimed that he disapproved of new things, especially technical innovations such as computers, and had resisted having one in his house for a long time. He expressed concerns about the potential negative effects of computers on children's learning, attention, and social life. He believed computers were best as a support for learning:

> I can see those games only to be support for a teacher, for a human being, and not as being like teachers for themselves. So you can't just put a kid in front of the

> computer and leave him be, or leave her be. Because computers are not as sophisticated as human beings. (Pre-game Inteview_2211)

As a long-time chess player, he liked to plan several moves ahead, beyond the opening of the game. Nenad had to contend with technical difficulties. He had registered for the game only with his first name; by coincidence, another player with the same first name had the same idea, which caused a conflict. Each player's postings showed in the other user's postings, and it was difficult to distinguish who was doing what. This also caused some links to malfunction. For example, clicking on one user's profile linked to the other user's information.

I asked Nenad to approach the game designers' team to resolve the issue, but no one responded. This only added to Nenad's initial frustration with the game design. Finally we decided that the best and easiest solution would be for him to register under a different name or under his full name. The new identity would not permit the transfer of his original contributions, however, so Nenad had to start all over again. At this point, a week or two into the game, Nenad decided to withdraw from playing. Despite his unfortunate experience with "Urgent Evoke," Nenad participated in the post-game survey and interview.

Nina immigrated to New Zealand from Serbia. She upgraded her language skills and slowly climbed the career ladder to a position as an Employment Consultant at Work Broker Albany and Browns Bay in Auckland. Very communicative and armed with much experience in social activism during the socialist era in Serbia, Nina felt she was very good at working with people with diverse ideas and backgrounds, as well as finding

quick and innovative solutions to problems. She approached new challenges with passion and a positive attitude, evident in her blog postings. Facebook and Skype were two applications with which Nina felt comfortable and of which she considered herself an "advanced user." She rated her experience with all other social media sites as "heard of," indicating awareness but no quantifiable use.

A believer in the possibility of change, Nina's expectations from "Evoke" were to find an opportunity to do something important. Nina worried about the dangers of violent games and valued the opportunities presented by games that aimed at shaping or changing personal lives. She compared the latter with reality shows such as "Survivor," in which people are challenged to go beyond their capabilities and excel, "use[ing] their potentials to the maximum." She said,

> I guess what I am trying to say is that not all about playing games is negative, as long as the advantages are utilised. Some games probably can teach, looking from the positive side. Of course they can teach negative things like using the guns and weapons and all other things. The games like the one I am participating in at the moment I believe have a power to teach and to prompt some people to act. (Pre-game Interview_1695)

Sentwali was an undergraduate student at the National University of Rwanda, in Butare, a city in the southern province of the country. Close to graduating with a degree in Applied Sciences (a five-year program), he reported that his dream was to contribute to the prosperity of his country as a civil engineer. But Sentwali's dream was larger than that. He said on his profile page that "if I come to help everybody to get something to eat

everyday, get medicine, where to sleep and clothes, I will be happy all my rest life" (Sentwali, Profile).

In our personal conversation over Skype, Sentwali stated that he had lost all his family members to the Rwandan genocide in 1994 and had no family left. His comments and stories about himself in his blog postings suggested that he carried the burden of the world on his shoulders. He often talked in his profile about his concern for "all people" stating that "I will talk to all people because I am worried about them and I believe the success on changing their mind towards the sustainable Development" (Profile).

Sentwali had high expectations for "Evoke." He appeared to immerse himself in the gameworld with optimism and enthusiasm. He emphasized the importance of gaining knowledge through this experience numerous times in his survey, interview responses, and blog postings. He often talked about the participants as a "class," perhaps because the game designers call "Evoke" a "crash course in changing the world" or because he perceived of the game as a formal learning opportunity:

> But here, for me, this is a class of intelligence people around the world, this is a class of challenge, the problem and the solutions, and this is the opportunity for not only the country, the people of Africa, but every people, every person who want to develop his knowledge or her knowledge and everyone who want to develop his, who want to develop society and the campaign of the country they have to learn this, they have to join us, they have to play this game. (Pre-game Interview_5533)

Sentwali often finished his emails and postings by wishing everyone a "rain of blessings."

The sixth and youngest of the participants in this study was **Mukasa** from Kampala, Uganda, who identified himself as being in the range of 19-25 years old. He was a Computer Science student at Makerere University. He spoke English, French, and his native language, Luganda. He stated on his profile page that he worked as a volunteer in the Technical Support Program for the Women of Uganda Network (WOUGNET), a non-profit organization that supported female organizations in using technology. Mukasa often travelled to other parts of the country or to other African countries to offer Information Communication Technology (ICT) training and hands-on workshops on Web 2.0 and new media. His job was to teach how and why to use technology. He helped students think strategically about appropriate technologies.

Mukasa had his own blog, often referred to in his game blog postings, in which he voiced concerns and observations about current socio-economical, cultural, and political events in Uganda. Some of the postings he sent in to "Urgent Evoke" were published in local media. His main focus was agriculture and ways to improve it; his proposal in this area was eventually funded by the World Bank. He was also aware of other urgent issues that needed solutions: poverty, health, access to clean water, and general literacy in the Ugandan population. During the game, Mukasa participated in the citizen journalism in Africa.

As he stated in the first survey and interview, Mukasa played a number of computer games on different platforms, including PlayStations and MMORPGs on the Internet. He especially liked games with good graphics, which he said "makes the whole experience of gaming lively and close to real life". He saw "Evoke" as a different kind of game; as

he liked collaboration, he was curious to learn more from others. He believed games could impact actual-life behaviour in both positive and negative ways.

Mukasa described himself in his profile as self-motivated, highly committed, a team player and builder. As he told me in informal conversation over Skype, he came from a family with many siblings. He liked children and working with youth. He stated that, "youth are the leaders of TODAY. That's how they can gain experience if they are to assume the same role tomorrow" (Profile). Mukasa saw himself as a social innovator with a vision. His magnetic optimism, energy and passion for a better future, evident in interviews and his blog postings, certainly suggested the potential for leadership.

5.3 Procedure: Data Collection

Data sources included the following: a) an entry questionnaire that focused on demographic background, experience with computers and gaming, level of engagement in a variety of online activities, and participant expectations for "Urgent Evoke" (Appendix D); b) entry interviews (Appendix E) to clarify the survey data; c) the data/artifacts created in the course of the game, which consisted of participants' blogs, images, video contributions, profiles and comments; d) a post-study survey (Appendix F); and e) semi-structured exit interviews (Appendix G) in which participants reflected on their experiences, challenges, and the merits of participation in an ARG.

The surveys consisted of short, highly-structured questions, as well as a number of open-ended questions and text-boxes for comments. Closed questions were employed for collecting demographic data and Likert-scale questions for rating computer experience.

Interviews gave insight into individual behaviour and reasoning. Interview questions were loosely based on survey questions, allowing flexibility and the opportunity for interviewees to elaborate their responses. The advantage of semi-structured interviews was that they enabled avenues of exploration not foreseen by the researcher.

5.3.1 Research instruments

Vovici EFM, a Survey Tool: Online surveys are becoming increasingly popular as information-gathering tools (Duda & Nobile, 2010; Evans, Burnett, Kendrick, Macrina, Snyder, Roy & Stephens, 2009). Their potential was outlined by Coomber, who indicated in 1997 that the Internet was a new interface between a researcher and a wider range of respondents.

Vovici EFM (Enterprise Feedback Management) is one of the leading providers of survey software. A version of this software has been securely installed on a server at my research institution, the University of British Columbia. Types of items that can be created in Vovici EFM range from multiple-choice responses and Likert-scale items to open-ended text-based formats, allowing both quantitative and qualitative data collection. The pre- and post-game surveys (Appendices D and F) were created in Vovici. Each participant was provided with a unique research number and a link to the online surveys.

Interview tool: Skype: Participant interviews were conducted over the Internet using Skype. Sample questions are included in Appendices E and G. Skype is one of many free and user-friendly voice-over IP (VoIP) communication tools (Branzburg, 2007; Hay-Gibson, 2009; Schwartz, Schutter, Fahrni & Rudolph, 2004). Very easy to install and

with a very high sound quality, Skype has become one of the most popular choices for synchronous communication in a variety of contexts all over the world.

There is little literature on the use of Skype in data collection for social science research. It is most often a subject of study rather than a tool (Booth, 2008; Dupasquier, Burschka, McLaughlin, & Sezer, 2010; Fasig, 2006; Greene, 2009; Ladyshewsky, Geoghegan, Jones, & Oliver, 2008; Olson, 2010; Tian, & Wang, 2010; Woo, 2006). The value of the online interview in qualitative research study in comparison to face-to-face interviewing has always been a question (Hay-Gibson, 2009). Hay-Gibson argues that it is still widely believed that no technique can surpass face-to-face interviewing. However, her research study shows that in spite of negative experiences (such as interrupted or disconnected calls) the VoIP method has its advantages. The researcher and participants can easily share a variety of documents and resources and interact with them. VoIP facilitates access to remote participants, which can be problematic in face-to-face interviewing.

My decision to use Skype for participant interviews was based on comparison with other tools. I found that Skype was the best available current technology that would provide a usable set of data and enable me to build a good rapport with my participants. The main reasons for using Skype were: 1) it was easy to learn; 2) it enabled audio and video and thus most approximated face-to-face interviewing.

Skype combined all the interview elements that were important to me: it was free for everyone, very easy to install, and the interface was user-friendly. I was able to use audio, video or text, giving participants the option to choose a mode of communication based on their comfort level, skills, and the stability of the Internet connection. In the

pre-game survey, four out of six participants presented themselves as "advanced users of Skype," one reported occasional use, and one said that she had only "heard of" Skype before.

5.3.2 Pre-game survey

Following the call for participation and the collection of signed consent forms, the participants completed a pre-game survey. Questions were designed to collect demographic information and information about participant competences, experience, and skill with computers, different social media tools, and computer or video games. The pre-game survey is described in greater detail in section 5.5.1.

5.3.3 Pre-game interview

Interviews provide opportunities for direct interaction between the researcher and the participants (Kazmer & Xie, 2008). The interview process included the following stages: 1) preparation for an interview; 2) conducting the interview; and 3) post-interview processing.

Stage I: Email exchanges before the interview included consultation about equipment (internal vs. external microphone and speakers, webcam), setting (home, university, work), and bandwidth. No questions were sent in advance, but participants were informed that the interview would elaborate on the survey and their responses. I tested the screen capturing software, ScreenFlick for Mac, and recorded random material from YouTube a number of times.

Stage II: Even though I had decided on the screen capture software, I wanted to make sure the session was recorded; as a back up, I used a video camera with mini DV

mounted on a tripod behind my back. All participants connected from personal computers at home. Engaging in a dialogue from separate physical locations that were familiar and safe environments for both parties was an advantage (Kazmer & Xie, 2008; Mann & Stewart, 2002). A potential drawback in conducting interviews online was the lack of researcher control over participant setting. In the case of this study, having that control was not a significant issue as all participants were responsible, conscientious adults.

Despite all the testing and preparation, several factors interfered with the process and presented a challenge. During my first interview I realized that ScreenFlick did not work well with Skype. The audio input was satisfactory, but the output did not work. In other words, I could hear the interviewee, but she could not hear me. Even though I could have typed my questions in the IM area, I decided not to because that would result in the loss of spontaneity and natural conversation flows. I conducted the first interview recording it only by a video camera directed at my computer screen. For the next interview, I used Skype Call Recorder, a plug-in, and SkypeCap, a distinct software.

Another challenge was Internet connectivity in different regions. The participants from New Zealand had some problems with connectivity during a switch in Internet service providers. The participants from Africa had a number of difficulties, including power outages, low bandwidth, which was addressed by not using video on my side and, in the case of the participant from Rwanda, not using video at all. Some interviews had to be rescheduled a number of times. Occasionally, the connection was lost and the Skype call was dropped, requiring reconnection. Generally, however, these problems were surmountable. One participant from Serbia did not have a webcam; there was only audio recording of these sessions. As a back-up in this case I used a digital voice recorder.

The interviews took 30-45 minutes. At the end of the interviews I invited final comments or questions. The interviews were downloaded to my home computer immediately and copies made to DVDs.

Stage III: The interviews were transcribed and transcripts were sent back to the participants, giving them an opportunity to check and clarify the content. All transcripts were formatted for uploading into *HyperResearch* for qualitative data analysis.

5.3.4 Post-game survey

Upon game completion on May 12, 2010, I sent a post-game survey to the participants. The questions in this survey were related to: 1) participants' participation in the game: frequency of playing, motivation, and expectations; 2) interaction with other players (ways of communication in and outside of the game); 3) media used (the reasons and purpose of their usage and their effectiveness); and 4) personal impact of the game and general experience. The completion of the post-game survey took 20 to 40 minutes.

5.3.5 Exit interview

This set of interviews took place two to three weeks after the end of the game. Although the game was officially complete, players were still waiting for the results, especially the two who had submitted "Evokations" (proposals for projects/funding). Certificate recipients were announced at the end of May, while the names of the other award recipients were published on July 22, 2010 on the "Urgent Evoke" website. All the interviews were conducted between June 3 and June 10, 2010. Aware of the difficulties and issues experienced during the first interviews with the African participants, we paid

more attention to scheduling. We picked a time of day or week when Internet traffic was low, which resulted in fewer interrupted conversations.

The second interviews took longer than the first, from 45 minutes to an hour. After playing the game, both the participants and I had more material to discuss. The responses in the second survey served as a starting point. Most questions were elaborations of these responses, but an opportunity was given for participants to talk about issues not covered in the survey (Appendix F). The second interview process was the same as the first. Again, transcripts of the recorded conversations were sent back to participants. The only difference was that one interview was done in Serbian. As noted earlier, Sonja from Novi Sad felt her spoken language was not as advanced as her written English, so she asked me to interview her in Serbian. I translated her responses and sent the transcript of her original interview and the English version back to her to check the content and translation.

5.3.6 Artifacts

In addition to survey and interview data, artifacts from "Urgent Evoke" were collected. These included:

1. data related to the research participants and their game participation: blog postings, image and video uploads in the "gallery", comments on other participants' postings, the information posted as part of the quest, user profiles and communications that happened on the profile page (messages "on the wall"), and emails to the researcher;

2. data related to the game: information posted by game designers (topic scenarios, instructions, and announcements), EVOKEblog and discussions created or facilitated by the game designers;

3. secondary data about "Urgent Evoke." primarily posted online, such as newspaper and magazine articles, information on other game sites, blogs by other game designers or people interested in games, and blogs and websites created as a reaction to "Urgent Evoke," most of which were critiques of the game.

Data included text, image, and video files. All data that could be copied was saved in folders designated for this purpose on my local hard drive and regularly backed up on external hard drives and DVDs. The urls of posted videos were saved. Screenshots were used to capture an entire website or artifacts that were difficult to preserve differently. In addition to the above, I kept a research journal of "field notes" in which I reflected on what was happening in the game or my own research choices. The details of less formal chats with participants when we happened to be on Skype at the same time were also recorded. All the information gathered in this way and presented in this dissertation is used with the participants' permission.

5.4 Data Analysis

5.4.1 Data analysis software

A variety of Qualitative Data Analysis (QDA) software is available. I made my selection based on two important parameters. The software had to be able to run on Mac OSX, Tiger, and be capable of analyzing text, images, and video. The first condition eliminated most available software capable of text, image and video analysis. *Atlas.ti*, which was

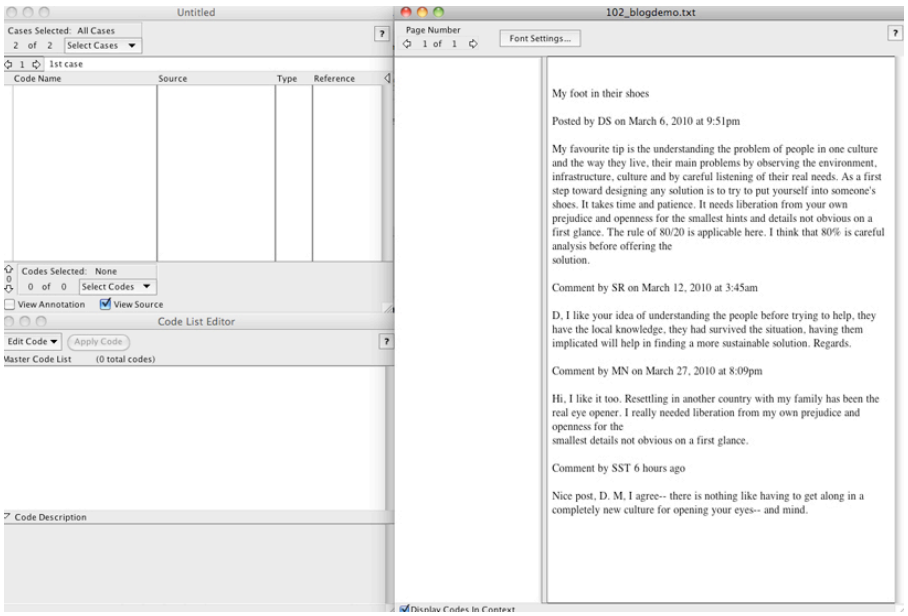
widely used, only ran on Windows platforms with cost-prohibitive upgrades. I narrowed my search to three available options, *AnnoTape*, *HyperResearch* and *Transana*.

AnnoTape was a solution for recording, analyzing and transcribing audio, video, image, and text data. It was essentially an audio or video recorder with a helpful interface that organized files or snippets of files and wrote the transcription next to them. However, there were no data analysis features for categorizing or coding.

Transana, open-source software developed at the Wisconsin Center for Educational Research, seemed more promising than *AnnoTape*. However, functionalities such as easy data mining and opportunities for collaborative analysis were not relevant. As with *AnnoTape*, *Transana* allowed the user to apply searchable keywords to video/audio clips. It had no option for coding, data visualization or similar functions.

HyperResearch, with features similar to *Atlas.ti*, was capable of meeting all the analytic requirements of transcribing audio, video, image, and text data for qualitative research. *HyperResarch* had a number of support mechanisms: tutorials, Q&A section, discussion forums, mailing lists, and a dedicated support email address and phone number. I took into consideration other factors: ease of use, cross-platform compatibility, coding options, visual presentations, and exporting formats, and I decided to use this QDA tool because it was robust in all areas (Fig. 11). The weakness of *HyperResearch* was that data could not be exported as XHTML. In addition, it offered fewer options for data visualization.

Figure 11 *HyperResearch* interface



© HyperResearch (Screenshot). Boskic, N. 2010.

5.4.2 Method of analysis

Ample research has focused on how video games affect various aspects of human life, and much attention has been given to negative aspects of video gaming such as violence and addiction. I wanted to explore whether games, especially ARGs in which the main interaction is through a narrative, have the power to influence change and ethical sensibility. After encountering "World Without Oil," my interest focused on human behaviour, the way narratives are presented and interpreted, and the establishment of human relationships based on those narratives in ARGs.

My research questions were as follows:

1) What kinds of moral functioning are evident in human play in immersive gameworlds?

2) How can players and educators who use these spaces and grow as individuals in their ethical sensibilities?

To respond to these questions and understand and interpret the complexity of human agency for my analysis, I struggled to find a framework that would suit my work. I stayed away from language or linguistic analysis of the text since English was a non-native language for all the research participants. Certain language constructs, such as sentence structure, politeness, or directness, might have been a reflection of first-language structure or insufficient proficiency in English rather than intentionality. I tried to understand the meaning of the utterance, general modes of consciousness, and specific worldviews (Jensen, 1989). Analysis was not done on a lexical or semantic level; instead, one or more paragraphs were used as the analytical unit.

I employed the four-component model of Moral Functioning developed by James Rest and his colleagues (1999) as an initial conceptual framework. I then shifted to use of Narvaez and Lapsley's later modification of the same model (2005). Based on Kohlberg's pivotal work on socio-cognitive developmental stages, Rest, Narvaez, Bebeau and Thoma (1999) took a critical approach towards theories of moral development at the end of the 20th century that focused primarily on moral judgment. They expanded the model to include other inner psychological processes that impact human behaviour: moral sensitivity, moral judgment, moral motivation, and moral character. This is how Rest et al. explain the four processes:

1. Moral sensitivity (interpreting the situation, role-taking, how various actions affect the parties concerned, imagining cause-effect chains of events, and being aware that there is a moral problem when it exists);
2. Moral judgment (judging which action would be most justifiable in a moral sense);
3. Moral motivation (the degree of commitment to taking the moral course of action, valuing moral values over other values, and taking personal responsibility for moral outcomes);
4. Moral character (persisting in a moral task, having courage, overcoming fatigue and temptations, and implementing subroutines that serve a moral goal). (Rest, p. 101)

This four-component model was later used for developing moral education programs in the United States; according to Rest et al. (1999) it led to Educational Leadership programs in 1990s public schools that taught "moral literacy" (p. 102). Narvaez and Lapsley (2005) worked further on this model, expanding it to include skills and subskills. Narvaez and Lapsley argue that a moral agent is not simply one who makes moral decisions, since the "making of decisions" assumes logical reasoning and deliberation. Drawing from the work of Varela (1999), and Varela, Thompson and Rosch (1991), Narvaez (2006) claims most human actions are not based on deliberation but are automatic and based on pattern recognition. Instead of choosing between traditional character education and rational moral education, Narvaez has taken what he calls "an alternative approach" (2006, p. 716). This approach aims to reconcile the insights of the two in consideration of research challenging the common view that conscious

deliberative reasoning is primary and unconscious thought is secondary. Narvaez and Lapsley (2005) discuss the notion of educating ethical expertise, stating,

> Effective ethical know-how is dynamic and responsive in real time to events in the world. True ethical expertise requires concurrent, competent interaction with the challenges of the environment using a plethora of processes, knowledge, and skills. (p. 154)

Generally, the four-component model was applicable to my study. The main categories -- judgment, sensitivity, focus (motivation), and action -- fit well in my analysis; however, I found the division in skills and subskills tended to be too specific in some cases, not allowing flexibility in understanding participant behaviour more broadly. Working with a variety of data in disciplines self-evidently different from, for example, the studies of Narvaez and Lapsley, raised a question of the model's applicability across diverse contexts. I therefore used the four categories as a skeleton and skills and subskills as a scaffolding device to support the evidence of moral functioning.

5.4.3 Developing codes and coding system

Developing a coding system was an iterative, emergent process that entailed multiple readings of the data and an ongoing refinement of the coding schema and its application. Five data sources were coded: 1) pre-game interview; 2) exit interview; 3) blog content posted by the five research participants; 4) comments made by the participants; and 5) participants' contributions to personal galleries with images and video postings. These resulted in five separate sets of codes (see Tables 4, 6, 8, 9 and 13). Some codes were

specific to particular data sources. Other codes appear in all data sets. The full code list is available in Appendix H and the full frequency report is available in Appendix I.

Some skills and subskills from Narvaes and Lapsley's (2005) framework were close or overlapping and not sufficiently distinct for my data. I also coded other features of experience not covered with Narvaez and Lapsley's framework. Therefore, the code list is composed of two layers: 1) the four subcategories from the framework, and 2) other relevant categories and subcategories, producing a total of seven discrete categories (see Table 3). My goal was to identify occurrences that appeared to lead to increased attendance to questions of ethics.

Table 3 Coding system: Categories and subcategories

Category	Subcategory	Example of codes
1. About games/play	General	<computergame>
	Perception of games/purpose of playing	<competition>
2. About "Evoke"	Potentials and expectations	<collaboration>
	Defining "Evoke"	<forum>
	Motivation to play	<intrinsic>
	Positive aspects of "Evoke"	<educational>
	Obstacles to successful play	<techissues>
3. Interaction with others		<ancouragement>
	Positive results	<exchangeofideas>
	Connecting with others	<makingfriends>
	Negative experience	<behavior_n>
	Other players	<rating>
4.Moral functioning	Moral sensitivity	<MS_perspectivesofothers>
	Moral judgment	<MJ_reasoningethically>
	Moral motivation	<MM_developingidentity>
	Moral action	<MA_resolvingconflict>
5. The use of media		<alternative>
6. Miscellaneous		<location>
7. Metadata		<md_blogauthor>

As content analysis and coding can be very subjective, it is necessary to achieve a certain level of objectivity (Neuendorf, 2002). This is typically accomplished by an inter-rater reliability test. To insure research quality and coding scheme validity, the second coder was presented with a representative sample of the content. Inter-rater reliability testing was performed on about 10% of the coded content. Where disagreements occurred, the

researcher and the second coder discussed the differences and justified their choices until consensus was reached; the final result was 89.35% agreement.

5.5 Results

5.5.1 Pre-game survey

As noted earlier, the goal of the pre-game survey was to collect demographic information and information about participant competences, experience, and skill with computers, different social media tools, and computer or video games. Questions 1-7 were used to collect demographic data, which are reported in the Participants Profile section.

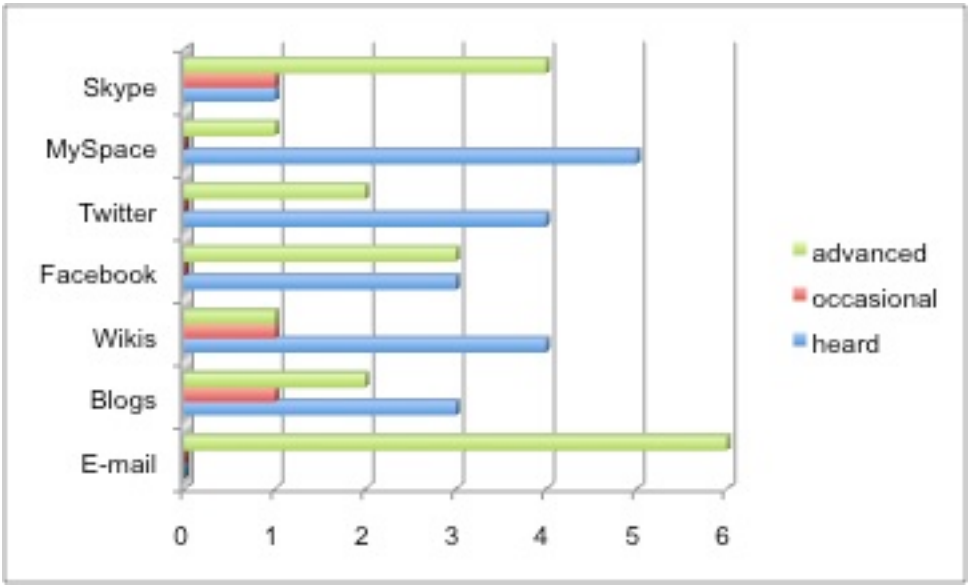
When asked (Question 8): "How would you rate your computer skills: basic, average or advanced?", four participants reported "average" and two "advanced".

Question 9 was as follows: "How familiar are you with [name of tool or application]?

- I have heard of
- I use occasionally
- I am an advanced user"

All participants considered themselves advanced users of email; four participants considered themselves advanced users of Skype, one had heard of it, and one used it ocassionally. The reported experience with the rest of the applications or Web 2.0 tools varied (Fig. 12).

Figure 12 Question #9: Familiarity with tools and applications



Four participants responded positively to Question 10: "Have you ever played a computer or video game?" Only one responded positively to Question 11: "Have you ever played an Alternate Reality Game (ARG)?"

When asked "Do you consider yourself a game player?" (Question 12), three out of the four participants said "yes". One stated that he played chess and Yahoo games.

Question 13 referred to the frequency of game playing:

"How often do you play?"

- More than few hours a day
- A few times a week
- A few time a month
- Less than a few times a month

Three participants stated “A few times a week,” and one “Less than a few times a month.”

Out of the four video and computer game players, in response to Question 14: “How would you define your skills/competences?”, two participants reported “an advanced player,” one “an average player,” and one “a beginner”.

Question 15 read: “When playing, do you prefer:

- Playing with others
- Playing alone
- Doesn’t matter”

Three out of the four selected “playing with others” and one “doesn’t matter”.

The two final questions for those who stated that they had played computer and video games were open-ended. Question 16 was “How often do you lose track of time when playing a game? Explain.” Responses are listed in Table 4.:

Table 4 Question #16: Losing track of time

Question	**How often do you lose track of time when playing a game? Explain:**
Responses:	Always; I forget completely about the time.
	Not too often. My time reserved for playing games is limited.
	It depends on my time and tags.
	That depends on the type of game/ level I am playing at. It’s quite rare though.

Question 17 was again open ended and responses are listed in Table 5.

Table 5 Question #17: How real is a gameworld?

Question	How real is a gameworld for you? Explain:
Responses:	Not real, I know it is made believe
	Not very real; because it is a Game
	It is a source of knowledge share. Good class.
	Well I would like to say game world is un real but in many cases people display their real selves in the games; They are addictive and when you are playing it feels real!

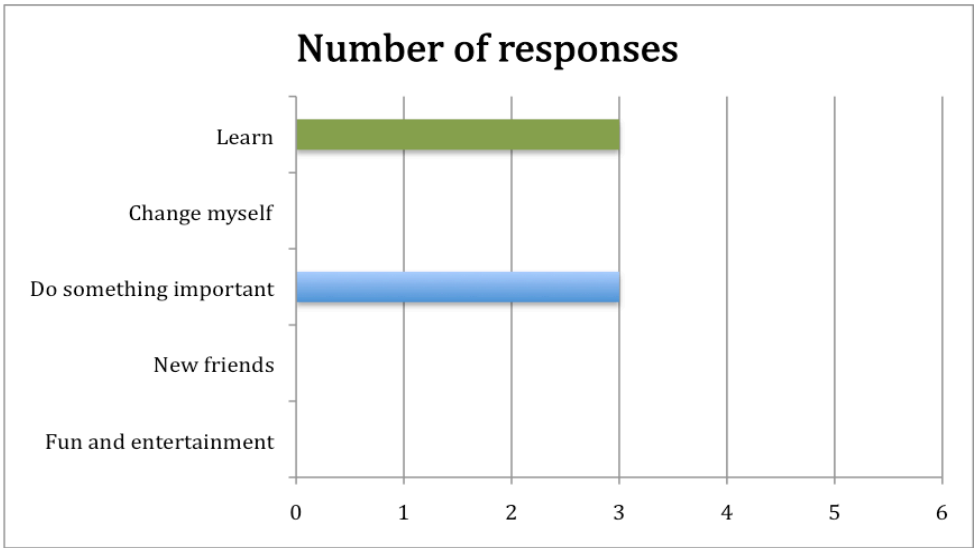
Question 20 was as follows: "What do you expect to gain from the game?

- Fun and entertainment
- New friends
- Do something important
- Change myself
- Learn"

Three participants reported that they expected to learn from the game and three reported that they hoped to do something important (Fig. 13). This was reflected in comments on their reasons for playing "Evoke." They expressed interest in learning something new, taking on a challenge, or collaborating with others. Mukasa said,

> Well I like collaboration. And in games you get to collaborate with your partners to accomplish a given task. On the other hand I also get to learn how different people adopt to different circumstances - through sharing ideas and experiences. (Pre-game Survey)

Figure 13 Expectations from "Urgent Evoke"



Participant belief in the potential of games to impact actual-life behaviour was unanimous; however, four of them perceived that potential to be good and bad. One participant emphasized only the negative effects of games and one only the positive.

5.5.2 Pre-game interview

Entry interviews were conducted in the first few weeks of the game. This was because the recruitment process took longer than anticipated (initial advertisements yielded no response) and the game had a set start date, allowing no flexibility in delaying the research. Therefore, although the entry interview was designed to be pre-game, some of the entry interview responses reflected the participants' early participation in"Evoke."

For analysis of pre-game interviews, a set of 37 codes was used, with 341 occurrences. The full code list is available in Appendix H; the full frequency report is available in

Appendix I.1. The coding system for the first interview was divided into four categories and six subcategories (Table 6).

Table 6 Coding system: Pre-game interview

Category/subcategory and code example	Description
Category 1	**About games**
	Experience and opinions on digital and non-digital games
Subcategory	General
	Participants' experience with playing games, both digital and non-digital, their opinions on positive and negative aspects of games; categorization of games, and their preference with playing alone or with other people.
<computergames>	Experience or lack of experience with playing computer and video games, including ARGs.
<gameaspect_n>	Remarks about negative aspects of games, such as addiction or violence.
Subcategory	Perception of games/purpose of playing
<competition>	Perception of games as competition. The purpose of playing games is to compete.
Category 2	**About "Evoke"**
	Subcategory: Potentials and expectations
	Participants' first impressions on "Evoke"
<socialaction>	Perception of "Evoke" as a tool for social change. The purpose of the game is to call to action.
Category 3	**Moral functioning**
Subcategory	Moral Sensitivity
	Participants' interpretation of the situation, cause-effect chains of events, and awareness of the existence of a moral problem.
<MS_controllingbias>	Controlling social bias • Diagnose bias • Overcome bias • Nurture tolerance

Category/subcategory and code example	Description
Subcategory	Moral Judgment
	Participants' judgment which action would be most justifiable in a moral sense.
<MJ_reasoninggenrally>	Reasoning generally • Reasoning objectively • Using sound reasoning • Avoiding reasoning pitfalls
Subcategory	Moral Motivation
	Participants' degree of commitment to taking the moral course of action, valuing moral values over other values, and taking personal responsibility for moral outcomes.
<MM_developingidentity>	Developing ethical identity and integrity • Choosing good values • Building your identity • Reaching your potential
Subcategory	Moral Action
	Participants' persistence in a moral task, and implementation of subroutines that serve a moral goal.
<MA_takinginitiativeasaleader>	Taking initiative as a leader
	Being a leader
	Taking initiative for and with others
	Mentoring others
Category 4	**Miscellaneous**
	Uncategorized codes
<representationofself>	Comments on how a participant presents him/herself.

5.5.2.1 Pre-game Interview Category 1: About Games

When asked about their experience with playing games, most participants talked about playing non-digital games. Mukasa (Uganda) was the only one who was an experienced player familiar with a variety of digital and computer games. Participants listed games

they played and activities in which they engaged: sports (badminton, volleyball, basketball), playing outside with other children (hide and seek), board games, card games, and social games. When thinking about digital games, they mentioned PlayStation (Sandra) and social software games such as "Farmville" (Nina). Mukasa mentioned the games "Grand Theft Auto" (GTA), "Need for Speed," "Dave," "Super Mario," "The Princess," and "FIFA."

Sandra and Sonja stated that games are activities designed for children:

> So when I was like 8 grade, pupils from my class would not play games any more, but I played with 5th grade. (Sandra, Pre-game Interview_1126)

> How games can be except, I don't know, games what children play, for instance, I don't know, some kind of guns, and…. (Sonja, Pre-game Interview_8271)

Sandra and Sonja said that games are fun. They stated that, "gaming is always related to fun," (Sandra, Pre-game Interview_708) and "I think many people play games only because of fun" (Sonja, Pre-game Interview_1784).

Addiction and violence were listed as games' negative aspects, as seen in the following comments:

> When one of our friends brought Nintendo game boy – pocket size. I have spent a lot of time playing and decided to return it to my friend because I behaved like addicted.... playing for hours. (Sandra, Pre-game Interview_2315)

> Because I really don't like when people stay all day in front of the computer and play games and games. (Sonja, Pre-game Interview_8943)

> Of course they can teach negative things like using the guns and weapons and all other things. (Nina, Pre-game Interview_1878)

> And in real life, we'll have it here probably with teenagers driving cars, they want to drive as fast as they drive in a game, they want to do everything they see in a game. I have a friend who sort of tried that out after playing "Need for Speed – Most Wanted" and it turned out bad. He was in an accident. Thank God he is still alive, but yeah, it sort of influences the way you behave. Some people say, which could be true, that games like "Grand Theft" could increase violence in our community because when kids grow up playing these game and they get to be violent, so yeah, if you take on the same character as you play in the game, it could kind of influence your life or lead to bad or good thing in your community. (Mukasa, Pre-game Interview_6244)

Two participants stated that games could be considered a waste of time:

> In my culture and in my family, gaming is always related to fun and sort of waste of time. So, my mother would not allow us to go to places where is possible to play video games. Before computers we had small shops with video games and playing football or playing with machines, so We were not allowed to go there because this was considered as waste of time. So I was brought up not to play those games. (Sandra, Pre-game Interview_1933)

> But I still believe that too much time spent in front of the computer playing games can alienate people from one another. […] Yes, waste of time. Yes, yes, waste of time. (Sonja, Pre-game Interview_9142)

5.5.2.2 Pre-game Interview Category 2: About "Evoke"

For Sentwali from Rwanda, "Urgent Evoke" was an "opportunity to learn" (Pre-game Interview_3748). Sandra and Nina also saw it as having educational potential. They stated:

> Since this game is called educational game, I was curious because it has this educational component. I wasn't thinking about entertainment, but I thought this is, purpose is educational, and it is something different. (Sandra, Pre-game Interview_2680)

> The games like the one I am participating in at the moment I believe have a power to teach. (Nina, Pre-game Interview_1966)

Sonja and Mukasa reported how a game like "Evoke" had already made them learn:

> Sometimes I learn during this conversation and maybe it forces me to think about topics that I before never thought about that. (Sonja, Pre-game Interview_5140)

> You get to learn from other people who have experience on all sort of things. (Mukasa, Pre-game Interview_3074)

The stated expectations for "Evoke" differed: as noted earlier, three participants said they expected to "do something important" while three expected to learn. The participants also stated that "Urgent Evoke" presented opportunities to exchange ideas about important issues, to take social action, and practice collaboration, as evidenced in the following remarks:

> Games like "Evoke" can be used to exchange opinions on a given topic. At the same time you can find out how people in different parts of the world think about the given topic, and how is that different from you and your country where you live. (Sonja, Pre-game Interview_2291)

> I would like to see positive changes in our communities brought about by the agent following their "Evoke" experience. (Mukasa, Pre-game Interview_9778)

> don't know what are the expectations of people. I guess the whole group of these people that I am involved by connecting, are going to form like a society, I don't know, new group of society that are really passionate about the future of all of us and our children and grandchildren, and the future of the planet and how we can survive and considering the changes that are going... (Nina, Pre-game Interview_4110)

They reported they were also ready to question their assumptions:

> I would like to check is my prejudice about gaming as waste of time – correct or I should reconsider gaming as a phenomenon. (Sandra, Pre-game Interview_3107)

> . . . they give many ideas and they share more like they are converted. That is why I rename this game a class of mind change. So, without doubt some of them will change. (Sentwali, Pre-game Interview_8092)[18]

The research participants had different concerns in terms of their participation. Most frequently expressed was a concern over lack of time (Sandra, Sonja and Nina) to devote

to important issues. Participants also mentioned technical difficulties (Nina and Nenad) and access to Internet (Sentwali), as evidenced in Sentwali's response:

> . . . but which percentage of young people or people of Africa who are informed for this game or who have access to the internet or who know to use the internet, even some of us who try, they don't have their advises (machines), I think that if someone uses internet (cyber) coffee for only playing this game, he/she could spend much money and it will be a long deal for her/him. (Sentwali, Pre-game Interview_2017)

5.5.2.3 Pre-game Interview Category 3: Moral functioning

In regards to the elements of the moral functioning framework only, results are expressed in Table 7.

Table 7 Moral functioning - Pre-game interview (code frequency)

Moral Functioning

Moral sensitivity		Moral judgment		Moral motivation		Moral action	
code	# of inst.	Code	# of inst.	code	# of inst.	code	# of inst.
<connectingtoothers>	2	<reasoningethically>	34	<actingresponsibly>	4	<persevering>	3
<controllingbias>	6	<reasoninggenerally>	25	<communitymember>	3	<planningandimplementing>	1
<interpretingsituations>	16	<reflectiongonprocessandoutcomes>	8	<developingidentity>	15	<takinginitiativeasleader>	5
<perspectivesofothers>	5	<understandingconsequences>	6	<respectingothers>	1	<workinghard>	4
<respondingtodiversity>	8	<understandingproblems>	2	<valuingtraditions>	1		
Total	37		75		24		13

As these results show, the most frequent moral functioning happened in the realm of moral judgment, followed by moral sensitivity. The participants' responses reflected concentration on their values and beliefs while explaining their motivations and expectations from engaging in the play. For example, when asked about her representation of self in the game and the use of her real name, Sandra said that she "was talking about participating in the conference. This is similar or it should be considered as similar. Therefore there is no reason to hide behind an avatar or false name" (Sandra, Pre-game Interview_4403).

In her attempt to define a game player, Sonja said,

> I think a player is a person who likes playing any kind of games. But the player is, I think, this person who his spare time almost spends playing games. So, the player is someone who prefers playing games than talking with friends or reading books or… It is a person who really too many time spare on playing games. I think that that is a player. (Sonja, Pre-game Interview_1355)

Discusing her first impressions of "Evoke," Sandra stated, "topics are related to major problems on our planet which are of everybody concern" (Sandra, Pre-game Interview_3428). Some participants, like Nina and Mukasa, explained why games such as "Evoke" could be important:

> We all kinda think of how we can contribute, how we can change. You know, I believe that every person at some point in their life talk about how they can use their ideas to change something, and invent something. (Nina, Pre-game Interview_2416)

> It's, I think it's more than a game. "Evoke", unlike other games aims at changing the world through an online forum (if I may call it that). You have a live community where people share blogs, photos and ideas. Of course these are people from diverse economies and backgrounds from different corners around the world. You have the academia, the rural and urban communities and each of these have their own perspective of a given topic. Basically that's what makes "Evoke" special. You play something that is real, you get experts who are experienced about that topic, you get to learn from other people who have experience on all sort of things, you get to share ideas and you get to learn on top of that. So, with "Evoke", I feel differently. It is not more like a competition, but it is more collaboration, it is more of sharing ideas. I like to think of it as a forum where people get to participate. (Mukasa, Pre-game Interview_2511)

Other participants were concerned about what games could not achieve in comparison to traditional methods of education:

> the web designers of those web games are really nice and good and intuitive and there are things which are really helpful, but, you know, I can see those games only to be support for a teacher, for a human being, and not as being like teachers for themselves. So you can't just put a kid in front of the computer and leave him be, or leave her be. Because computers are not as sophisticated as human beings. Yes. (Nenad, Pre-game Interview_2073)

In the first interview, statements about taking on a leadership role or calling for action were rare. As it was premature for ideas to be completely conceptualized, in most cases

‘leadership’ was expressed as a wish to contribute and learn rather than as concrete action. For example, consider Sentwali’s statement:

> every day I design, I design about two projects from the ideas of game Agents. But the problem that I have again is to, to search the fund, to seek the fund and how I will put it in action. (Sentwali, Pre-game Interview_4789)

5.5.2.4 Pre-game Interview Category 4: Miscellaneous

The miscellaneous category included only one code (<representationofself>). All the participants registered for the game using their real name; some uploaded their photo as well. They considered “Evoke” a community in which they did not need to “wear a mask” (Sandra, Pre-game Interview_3827). Sonja and Sandra, for example, said that they did not really like people using pseudonyms. Both women and Mukasa stated that the content and what was posted were more important than the name signed beneath it. Sandra commented “I don’t question that [if they use a pseudonym], I am more focused on what they are saying” (Pre-game Interview_4997).

5.5.3 Blog postings

The participation in the game varied from subject to subject for various reasons which will be discussed in the exit interview section. Sandra and Nina were most active at the beginning of the game; Sonja was selective with regard to topics and participated in those that most interested her. Sentwali and Mukasa were very active for the duration of the game; Sentwali contributed postings almost daily, while Mukasa had only short periods of inactivity in the first week of April. These differences in individual investment in the

game could be explained by participants' personal expectations and other obligations during that period.

The participants' blogs presented the main corpus for analysis (Table 8). The coding system for the blogs contains four categories: moral functioning, interactions with others, metadata, and miscellaneous.

Table 8 Coding system: Blog postings

Category/subcategory and code example	Description
Category 1	**Moral functioning***
Subcategory	Moral Sensitivity Participants' interpretation of the situation, cause-effect chains of events, and awareness of the existence of a moral problem.
<MS_connectingtoothers>	Connecting to others • Relating to others • Showing care • Being a friend.
Subcategory	Moral Judgment Participants' judgment about which action would be most justifiable in a moral sense.
<MJ_reflectonprocessandoutcomes>	Reflecting on process and outcome • Reasoning about means and ends • Making right choices • Redesigning the process
Subcategory	Moral Motivation Participants' degree of commitment to taking the moral course of action, valuing moral values over other values, and taking personal responsibility for moral outcomes.
<MM_communitymember>	Being a community member • Cooperating • Sharing resources • Cultivating wisdom
Subcategory	Moral Action Participants' persistence in a moral task and implementation of subroutines that serve a moral goal.
<MA_planningandimplementation>	Planning to implement decisions • Thinking strategically • Implementing successfully • Determining resource use
Category 2	**Interaction with others** A type of interaction by the research participants (showing encouragement, raising an issue, offering a

Category/subcategory and code example	Description
	solution, or giving a vision of the future)
<solution>	Offering a solution or suggestion to solve the problem
Category 3	**Metadata**
	Data generated by the system, such as the author and the date of the posting
<md_blogtitle>	Title of the blog message posted by the research subject.
Category 4	**Miscellaneous**
	Uncategorized codes
<proverb>	Using a proverb or a saying to express a general truth based on a common sense.

*The category of Moral Functioning and the subsequent four subcategories: Moral sensitivity, Moral judgment, Moral motivation and Moral action are used in all five sets of coding.

Thirty-seven codes were used with 2000 instances of occurrence. The full code list is available in Appendix H and the full frequency report in Appendix I.2. The results indicate that the most frequent types of interaction by participants were offering a solution (104) and raising an issue (i.e., identifying a problem). There were only ten instances of encouragement. All research participants who used emoticons used them as an expression of emotion to complement the postings (21).

5.5.3.1 Blog Postings Category 1: Moral functioning

Analysis of the moral functioning framework only is shown in Table 9.

Table 9 Moral functioning - Blog postings (code frequency)

Moral Functioning

Moral sensitivity		Moral judgment		Moral motivation		Moral action	
code	# of inst.	Code	# of inst.	Code	# of inst.	code	# of inst.
<connectingtoothers>	70	<reasoningethically>	63	<communitymember>	51	<planningandimplementing>	36
<interpretingsituations>	36	<reasoninggenerally>	68	<developingidentity>	22	<resolvingconflicts>	3
<perspectivesofothers>	9	<reflectiongonprocessandoutcomes>	33	<respectingothers>	10	<takinginitiativeasleader>	87
<respondingtodiversity>	2	<understandingconsequences>	9	<valuingtraditions>	3		
<understandingemotions>	1	<understandingproblems>	5				
Total	118		178		86		126

It can be concluded from the data that moral judgement still remained dominant in blog postings (178 instances), but that moral action increased considerably (126 instances), followed closely by moral sensitivity (118 instances). Part of the game was to translate the actions and thinking in the game to action in players' actual lives. Some players thus took an active role in responding to the tasks, solving problems or raising issues in their local environments. This is especially evident in the final "Evokation" submission, in which Mukasa and Sentwali competed for one of the awards by presenting projects relevant to their local communities. Mukasa's proposal was about educating local farmers:

> First of all, as an Urgent Evoke Agent, I intend to sensitize and enlighten the rural farmers about changing their mind set as regards improved farming methods to ensure sustainable rural livelihoods while ensuring environmental integrity. This can be done by volunteers who go out in the field to teach farmers on the "grass roots", peer groups, training of trainers, exchange visits to demonstration farms, also through agricultural organizations.
>
> Together with Sanyu Ly'amaka Women's Group, we shall work closely with the rural farmers both in groups and as individuals. Together with these farmers, we shall encourage the youth to participate in the project, assume roles in the project, use the resource centre for their information needs and attend our trainings. (Mukasa, Blog_7572)

Sentwali's proposal was about building a chicken farm to produce eggs, reducing the necessity of importation from neighbouring Uganda. He explained,

> This paper illustrates a business plan on the activity of laying hens which aims only to produce eggs. The purpose of this project is to give my contribution to egg production of eggs for food for our country knows when population growth, which obviously explains why the requests for food, regional integration in the East African Community events that dating by foreigners in various fields. For this fact, hotels, bakeries, restaurants and so on need (eggs) so that imports are the solution to this deficiency. The products (of course the eggs) will preferably be sold in Kigali and Butare. (Sentwali, Blog_3173)

Those who did not have an elaborated project idea thought about the potential. For example, Sonja wrote:

> With my friend who has orchard we could start to cultivate vegetables also. First of all we have to make a decision which vegetable will be easiest to cultivate because we don't have any experience. So we should confer with somebody who already has this experience. Later when our job will in progress we could partner with another manufacturer to increased production of vegetables. (Sonja, Blog_7131)

Nina situated her project in the imaginary future:

> In 2013 I have invited all that were born and raised in Budalija to a forum to discuss the future of our beautiful village. Outcome of the discussion was to start a project: Budalija for the future Project team has been elected and the strategy to raise funds developed. Aim of the project was to reform Budalija to become first self sufficient village in this part of the world, being able to self source sustainable energy, quality water and food. Besides that, to secure constant funding, we

> developed Budalija as tourist destination with a difference: Tourists are able to take part in the week of a self sustained farm and learn the skills to be able to start their own.
>
> As the years passed more and more young people were returning back home. By using and developing their ideas Budalija continues to be self sufficient with an ability to give others helping hand when needed. (Nina, Blog_3499)

Sandra did not submit a final proposal for a project, but she was the participant who took a number of concrete actions or small steps toward change. She described one of them:

> It is a small contribution to the energy saving... it is my small house... It is my small energy expenditure, but it works! The most of the electric power I spend is while cooking. I cook for the family and different food for the baby. In addition to that I need to warm up water frequently for milk, tea, to warm up juices etc. I noticed that if I switch on the stove for a short period of time and leave water on it for 10 to 15 minutes it will warm up to the same extent as if I would keep it on for a few minutes. Since the frequency of my use is high – it showed the effect when I compared my electric bill. (Sandra, Blog_2411)

When looking into the results related to moral sensitivity and moral motivation (which has the lowest code frequency level of 86 instances), it is interesting to note that the majority of codes fit into the category of "connecting to others" (70 occurrences) and "community member" (51 occurrences) respectively, which reflects the collaborative aspect of "Evoke."

5.5.3.2 Blog Postings Category 2: Interactions with others

The participants were highly engaged in discussions, acknowledging one another's contributions and sharing resources and information they knew or had found on the web. They showed respect and care, supported and encouraged each other, and learned about diverse cultures and the issues at stake. Since these elements are not as obvious from the moral functioning framework analysis, I used a separate layer of coding to extract only those relationships that developed during the game. The results show that the code with the highest number of occurrences was <encouragement>.

The research participants kept identifying problems, either in their local communities or on a global scale. They also offered solutions. The number of instances in which solutions were offered was higher than the number of stated problems (104 occurrences of solutions versus 75 occurrences of problems). The results, of course, differed by participant. The highest level of contribution in this regard was by Mukasa, whose personal profile might have suggested such a result. As he worked as a citizen journalist, his knowledge of the economic and political situation in Uganda was remarkable. It was therefore not a complete surprise that his attempts to tackle actual-life issues would be so fervent. Here is an example from his blog posting in which he identified the problems at hand:

- Food Insecurity is a very big problem in developing countries around the world
- Access to safe water remains a very big challenge to over 80% of the worlds population
- Environmental issues - Climate Change
- Women Empowerment - with the increasing gender based violence and gender inequality

- Disease - virus like HIV/AIDs, Malaria, Killer Flu and Ebola which have increased the mortality rate both in children and adults. (Mukasa, Blog_68499)

He also offered solutions:

> These challenges cannot be solved by one person, country or organisation, but only through joint efforts. Because these challenges affect people, we can only trust and count on those same people to solve them. Therefore I appeal to Evoke to continue working closely with the wider communities to identify new grand challenges and also solve those that are existing already. (Mukasa, Blog_69085)

On the other hand, the highest number of instances encouragement and requests for information were posted by other participants in comments to Sentwali. The frequent requests for clarification might have been due to Sentwali's obvious struggle with expressing himself in the English language. The generous encouragement by others might have demonstrated an understanding, or at least acknowledgement, of the difficulty of writing in a foreign language; it might also have represented support for his contributions in consideration of the low standard of living evidenced in his postings:

> I was born in the campaign where electricity was an issue for all people. For now, I know that we could use car battery to put on the light, for the lamplight and radio when we are where there is no electricity. (Sentwali, Blog_95643)

5.5.3.3 Blog Postings Category 4: Miscellaneous

The category "Miscellaneous" contained four codes that did not belong to any of the other categories. Three of them -- <proverb>, <quoteref>, <quoteref_n> -- were related to my interest in participants' literacy practices. The first code recorded the usage of

proverbs or sayings to convey an idea, as an illustration of using cultural references. The second and third codes recorded the usage of referenced or non-referenced citations. The last code, <location>, provided information about locations participants mentioned or discussed in their postings, which was in most cases their local surrounding.

Proverbs or sayings were used by Sonja, Sentwali, and Mukasa, as in "One stone hits TWO birds!" (Mukasa, Blog_135184), or "World is small" (Sonja, Blog_2632). Quotations were used by Sandra, Sentwali, and Mukasa. Except for a single instance in one of Mukasa's postings, Sandra and Mukasa referenced their sources. In that case, Mukasa invited other players to find a quotation that inspired them and provided his own as a prompt, as in "find a quote that inspires you that might inspire others. Some people struggle to find happiness, others CREATE IT!" (Mukasa, Blog_138171). Sentwali, on the other hand, used information from the web extensively without referencing his sources. This appropriation of text by Sentwali resulted in a number of polite and less polite comments by other players. The potential reasons for Sentwali's use of someone else's words and the reactions of other players are discussed in Chapter 6.

5.5.4 Comments

Results gathered from the comments show a pattern of contribution similar to that in the blog postings. The most diligent commentators were Sentwali and Mukasa. In analysis of this data, eighteen different codes were used with 809 instances of occurrences. The full code list is available in Appendix H and the full frequency report is available in Appendix I.3.

The research participants had the option to comment on other participants' blogs and engage in that discussion as well. In some cases, the research participants did not post any comment to the author of the blog but responded to another posted comment. Since I did not have permission to use information posted by other "Evoke" players, it was difficult to analyze these segments of conversation in isolation. Therefore, I focused primarily on their function in the dialogue. The coding system (Table 10) consists of three categories: moral functioning, metadata and miscellaneous.

Table 10 Coding system: Comments

Category/subcategory and code example	Description
Category 1	**Moral functioning**
Subcategory	Moral Sensitivity
	Participants' interpretation of the situation, cause-effect chains of events, and awareness of the existence of a moral problem.
<MS_perspectivesofothers>	Taking the perspectives of others • Taking an alternative perspective • Taking a cultural perspective • Taking a justice perspective.
Subcategory	Moral Judgment
	Participants' judgment which action would be most justifiable in a moral sense.
<MJ_understandingproblems>	Understanding ethical problems • Gathering information • Categorizing problems • Analyzing ethical problems
Subcategory	Moral Motivation
	Participants' degree of commitment to taking the moral course of action, valuing moral values over other values, and taking personal responsibility for moral outcomes.
<MM_respectingothers>	Respecting others • Being civil and courteous • Being non-violent • Showing reverence
Subcategory	Moral Action
	Participants' persistence in a moral task, and implementation of subroutines that serve a moral goal.
<MA_resolvingconflict>	Resolving conflicts and problems • Solving interpersonal problems • Negotiating • Making amends
Category 2	**Miscellaneous**
	Uncategorized codes.
<emoticon>	The use of emoticons to express emotions.
Category 3	**Metadata**
	The data gathered by the system

5.5.4.1 Comments Category 1: Moral Functioning

As might be expected, the highest number of occurrences in the comment area had codes related to moral motivation (<respectingothers>, 56 instances) and moral sensitivity (<connectingtoothers>, 46 instances). The research participants also tried to interpret the situation and clarify it to the original blog author, to him/herself, and to the others. Sonja, for example, wrote in response to a comment "I've heard about geothermal installations and it could be very useful" (Sonja, Comments_1333).

And Mukasa stated,

> I think I like the way Oxfam does it: Oxfam collects used clothes, and other items, sell them off in the same countries and use the money to build projects in developing countries. For example they give cows to people. People sell the milk from the cows to get money. (Mukasa, Comments_6948)

At one point in the game, the players began a lively discussion of different strategies for gaining points in order to advance in the game. These strategies resulted in contributions with questionable substance. For example, the interaction with other players (i.e., commenting on the posts) were rewarded by additional points. Thus, Sentwali, who was very motivated to get one of the game awards, would very often briefly repond to almost every single entry posted in a day. Some players were justifiably concerned that such an attitude would damage the quality of the discussions and encouraged the other participants to focus on working together and using collective intelligence in forming solutions. Sandra's view of such attempts was as follows,

> I understood Evoke as an opportunity to learn and work together with others, to contribute, as much as I can. I don't have as much time as some youngsters to hang on a computer for an eternity... The problem you are addressing is caused by a participant's motivation. Those with extrinsic motivation will be interested in votes (which is external motivating tool). Those that have strong intrinsic motivation will find the meaning in the process completing missions, learning, connecting to others.... etc. Anyhow, it is good that you find a nice way to support game players and to point out the overall aim of the game.... to make our place of living worth of living. (Sandra, Comments_17504)

Sentwali's comments were more geared toward showing respect, appreciation, and requesting further information rather than elaborating on the topic. Therefore, they manifested frequently as generic expressions such as "great post," "nice work," or "it sounds good/interesting" (Sentwali, Comments). Mukasa, on the other hand, actively engaged with problems and sought solutions and partners, as the following comment reveals:

> Providing a working solution for a working group! - I like the idea of cooperation - You could also read one of my posts "I reinvent cooperative farming and the Granary."
>
> As a group we can do much more. I am glad the rural women have realized this and they are not being selfish (no more)!
>
> It's very good to hear that you worked in Uganda to help Rural farmers. Now, we need to do few touches with the groups. Provide a little bit of modern skills, a few modern tools and like Kevin said, create larger cooperatives. I am working on

an Evokation proposal on Agriculture, I could use your input and Nyakaschool? (Mukasa, Comment_49520)

Sonja was the participant whose comments often formed an extension to the discussion in which she provided resources for further exploration.

5.5.5 Image and video postings

The "Urgent Evoke" players were encouraged by the game designers to contribute to the game by submitting images and videos in a separate space, outside of their individual blogs. In some cases, the participants chose to upload images directly into the game blog; in others, they uploaded them independently in the photo gallery area of NING. Even though the contribution of the research participants was minimal, in this case, I still used the categories and subcategories of the four-component model to analyze their usage. The coding system is equivalent to that employed for comments and consists of three main categories: 1) moral functioning; 2) miscellaneous; and 3) metadata (see appendices H and I.4).

Only three research participants contributed by uploading images in a special area of NING: Sentwali (2 photos); Nina (8 photos); and Mukasa (19 photos). All the research participants used images in their postings. Sonja created a Google map to show her location and uploaded it to the site. Sandra was the only one who posted a video; she also made links to another two videos.

All images used, either in the blogs or the image and video gallery, were relevant to the discussions. They served as an elaboration of the topic or as a demonstration. When Nina was explaining Mohammed Bah Abba's food preserving system (a "refrigerator")

for the people in Nigeria, she uploaded the image of him and his invention. Similarly, Mukasa illustrated the water problem in Uganda with a number of images from his region showing the common practice of fetching water from the river in plastic containers.

The comment accompanying Mukasa's image was as follows:

> Access to clean water in many parts of Uganda is still a myth. People live on 'dirty water' everyday because they have no access to clean water. They walk kilometers to fetch water. And they have to carry it on their heads. Most of these are children and the women. Rural poverty continues to dig deep - food is inadequate. These are more of the pictures I took at lake Edward in Kasese district early this year. Children fetching water for domestic use from a nearby lake which is also a fishing site. On the same lake we see car wash! The other picture was taken at the Masindi Port on lake Kafu in Northern Uganda. HOW SAFE IS THIS WATER? If its safe!
>
> Sanitation remains very poor causing diseases like cholera and typhoid. As we mark the World Water Day, I wanted to share with you and also to bring to your attention. We need to help our communities. (Mukasa, Images_729)

Sentwali uploaded most of his images to his blog. The images he provided made it easier to envisage the water pump in his local community in Rwanda, for example, rather than relying on the description and discussion in his posting.

5.5.6 Post-game survey

The majority of questions in the post-game survey were open-ended. I wanted to give the participants as much freedom as I could to talk about their experiences with "Urgent

Evoke." The first question was about how much time participants spent playing "Evoke." Responses to the question are reported in Table 11.

Table 11 Time spent on playing "Urgent Evoke"

Participant	Question 1: How often did you play the game? Please be as precise as possible. How many hours per day/week, etc.
Sandra	In the first three weeks of the game I have played for 2 to 4 hours a day. In the second three weeks I have played for two to three days a week for 2 to 4 hours. Later I have played only once a week for 1 to 2 hours. In the last quarter of the game I didn't have the opportunity to play at all.
Sonja	At the beginning of the game it was once a weak. However as the topics become more complex I spent more time.
Nenad	At the beginning I was playing a game for a 2-3 hours per day. After a week or so I gave up
Nina	1 hour in the first week, 1 hour in the second week and 9 hours in the third week
Mukasa	4-5 Hours per week
Sentwali	Everyday, since 9th March until 12th May Between 2-3 hours per day At least 18 hours per week At least 65 hours per month (30 days) I have used a minimum of 165 hours in 10weeks

As we can see, the time investment in the game varied from a few hours up to five hours per week, from one to ten weeks.

Question 2 was "What was your motivation for playing 'Evoke'?" For Sandra, the appealing element was the fact that the game was called educational; for Sonja it was a new experience to which she looked forward; for Nenad, "Urgent Evoke" was a challenge that he wanted to try; for Nina it was an opportunity to make a change; Mukasa liked the chance to work with other people, collaborate, and share knowledge; and finally, for Sentwali the game was a great learning space.

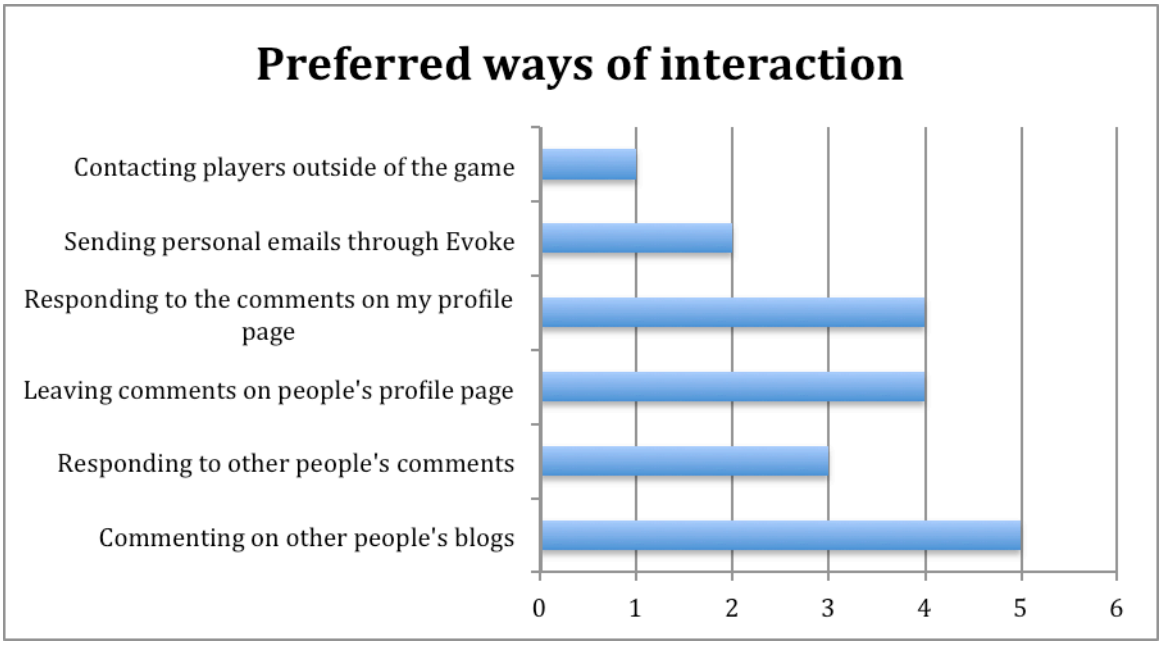
The expectations of the participants expressed in the pre-game survey, to learn or do something important, were fully or partially met, as revealed in responses to Question 3, "Did the game meet your expectations?" Sandra was surprised by the strong educational aspect of "Evoke." Despite the announcement of the game as a "crash course in changing the world," she was skeptical, expecting"Evoke" to be less serious and more entertaining. Similarly, Sonja had her own perception of what a "game" was; this perception changed following her participation in "Evoke". She reported, "I thought it is the ordinary game like kids play. But this is more than game. This is one way how people can share their opinions" (Sonja, Post-game Survey). Sentwali expected "Evoke" to bring more than just an exchange of ideas. He said, "in one hand I can say yes, I learned a lots of things, in other hand I am waiting the last day of Alchemy's decision [the announcement of the awards – my comment]" (Sentwali, Post-game Survey). Nina was disappointed with the time commitment required and her consequent inability to contribute more. She was active in the game for the first three weeks. After that, her participation was minimal. She posted a few comments to other player, but no postings in her own blog. She stated, "it certainly became a global movement with some incredible contributions. It was certainly time consuming and for a working mother (as I am) time was limiting factor" (Nina, Post-game Survey).

An essential element of playing the game was interaction with others. Players could do this in different ways. Questions 4-8 explored how the participants interacted with each other. All participants, except for Sentwali, responded positively to Question 4: "Did you interact with other players?" Next, they needed to state whether they engaged in the following interactions outlined in Question 5:

- Commenting on other people's blog postings
- Responding to other people's comments on my blog posting
- Leaving comments on other people's profile pages
- Responding to the comments on my profile page
- Sending personal emails through "Evoke"
- Contacting players outside of the game

Most chose to interact with others by posting a comment on someone else's blog (Fig. 15).

Figure 15 Ways of interacting with others



While examining responses in this post-game survey, I noticed that Sentwali had left a few questions unanswered. Since he was very active in responding to people's comments on his blog and leaving comments on other blogs, I was surprised to see that his answer

to the question "Did you interact with other players?" was negative. Answers to questions relating to frequency of interaction, initiation of contact, and expectations about those relationships were also left blank. Based on some other comments in my interview with Sentwali after the completion of the questionnaire, I knew there had been some conflicts between Sentwali and a few other players, conflicts in which Sentwali's lack of proficiency in English may have contributed to misunderstandings that occurred. English was Sentwali's second foreign language and it was more difficult for him to express himself in English than it was in French or his native Kinyarwanda. Sentwali talked about being put in a position in which he needed to defend his arguments. In those cases, he tended to avoid conflict, moving the discussion out of the public site. He felt more comfortable clarifying his ideas and opinions through personal emails.

To make sure I was not jumping to conclusions, I contacted Sentwali while I was in the process of writing an analysis of the results and asked him to comment on his lack of response. He stated that he felt supported by other players and was offered help when he asked for it, but he remained quiet about the misunderstandings that occurred as well as about his general interactions with others.

Excluding Sentwali from these particular results, the remaining participants interacted with others mostly by commenting on postings; three (Sandra, Nina, and Mukasa) reported responding to comments in their own blog; four (Sandra, Nina, Sonja, and Mukasa) said they left a comment as well as responded to the comment on their profile page. Only Sandra and Mukasa reported sending personal email through "Evoke," and only Mukasa said he had contacted someone outside of the game.

Question 6 was as follows: “How often did you interact with other players?

- whenever I was on the game site
- occasionally
- rarely”

Two participants out of five reported “occasionally,” two “rarely,” and one “whenever I was on the game site.” Question 7 read: “My interaction with other players was…

- mainly initiated by me
- mainly initiated by other players
- equal on both sides”

Three out of five participants stated that interaction was initiated by both sides equally, one that it was mainly initiated by the research participant, and one that it was mainly initiated by other players.

The final question about interaction, Question 8, was “Did the interaction with other players meet your expectations?” This generated the responses reported in Table 12.

Table 12 Expectations about interaction with other players

Participant	Question #8: Did the interaction with other players meet your expectations? Please explain.
Sandra	I didn't know much about the game and I had no expectations about the interaction with other players. I haven't had the opportunity to interact more with other players due to the fact that a lot of time should be spent on quests and missions.
Nina	again yes and no. Yes, because some of the players are really genuine and have started playing the game because of the cause, others have just used it as a portal to show off
Nenad	No. They didn't respond
Sonja	More than my expectations. I was surprised how some players very studious approached the problems.
Mukasa	Yes, Often the interaction was aimed at initiating contact with fellow agents or even a comment on their content - which I achieved.

Question 9 was "Did you feel supported/helped by other players? If yes, please give an example. If not, why not?" Five participants stated that they felt supported by other players, as in the following comments:

> Other players were very supportive. I had a problem with the viruses which blocked the opportunity for me to comment on other people's blog posts. I turned to the community of players with the question and I got support. (Sandra, Post-game Survey)

> I have been encouraged by the others, positive comments have motivated me. (Nina, Post-game Survey)

The only person disappointed by the relationship with others was Nenad; this may be due to his unresolved technical issues and the fact that he played for so short a time.

Question 10 and 11 asked about self-representation. Question 10 was, "How sincere do you think you were in describing/presenting yourself?" Sandra, Mukasa, Sonja, and Nina said they were sincere. Nenad stated that he had never talked about himself. Sentwali remarked that, "When I wrote a post, I gave what I had in my head and I think that I have done my best" (Sentwali, Post-game Survey).

Question 11 was "How sincere do you think you were in describing your real-life situation?" Five participants said that they were very sincere. Only Nenad stated that he had not written about himself.

As stated at the beginning of this thesis, I wanted to find out what literacy practices the game players used to tell "their stories." I hoped to find out how participants created their narratives in terms of their media choices, so I asked "What media did you use?" (Question 12). All six participants said they wrote blog postings; three said they uploaded images. No one reported producing a video.

Question 13 was "Can you comment on the artistic/creative choices you made in developing your blog content?" The responses, reported in Table 13, suggested a focus on text and narrative rather than any other form of creative expression.

Table 13 Artistic/creative choices

Participant	Question #13: Can you comment on the artistic/creative choices you made in developing your blog content
	It was mainly story telling and posting links of some useful sites I have found on the internet and rarely some photos.
	It always can be better. For the first time user I think I did well. Unfortunately I wasn't able to complete all misisions/qests on time but am itentding to finish by the 19th
	No
	When I created my blog content, I am based really in reality of things.
	I can not give a comment
	In all my blog posts I based on my knowledge of my country. This made it easier for me to be as creative as possible. This is because I already know the problem I am describing and that makes it even easier to suggest a solution.

Question 14 was as follows: "How imaginary or realistic do you think your writing was?"

The possible responses were:

- Everything was from my life experience
- I combined real life and imaginary stories
- The whole story is a complete fiction
- Other _____

Sandra, Nina, and Sonja responded, "I combined real life and imaginary stories." while Mukasa, Nenad, and Sentwali selected "Everything was from my life experience or my knowledge about issues." None of the participants selected the third choice, "Everything was my imagination/a complete fiction." These responses suggest that the participants were interested in sharing life stories. Imagination was used in predicting the future, not talking about the present.

Question 15 was "How important was this game for you personally?" Responses demonstrated participant satisfaction with the game or lack thereof. In addition, these responses revealed participants' personal goals, moral beliefs, individual personalities, and identities.

Sandra, for example, said,

> I liked the topics very much and considered the game important for me. I was sad because I couldn't devote more time for the game... actually I wouldn't call it a game, it is participation in a learning event. (Sandra, Post-game Survey)

This comment suggests Sandra's genuine interest in the game and the important issues it raised for her, as well as an ambiguity with regards to defining what the game really was. In her first interview, Sandra questioned her assumption about games solely being fun and entertainment. It seems that she was still struggling to come to terms with the idea that something called *a game* could be simultaneously very serious and educational.

Sentwali stated that he appreciated the opportunity the game presented in terms of personal growth and learning, as well as competence and confidence building:

> Knowing and learning a lot, in fact I was afraid to express my knowledge and feel that I was unable to do many things and I considered my knowledge at the low level, for now I know that I am able, I can, I am normal as others. (Sentwali, Post-game Survey)

Nenad, who gave up playing the game very early, stated, “I learnt a lot” (Nenad, Post-game Survey). The links he followed and the information he found, as he described in the post-game interview, were enough for him to claim that he gained knowledge.

The question that followed, Question 16, asked about the effect of the game on the participants. The responses are outlined in Table 14.

Table 14 Effects of "Urgent Evoke" on the research participants

Responses	Question #16: How would you describe the effect the game has had on you?
Sandra	At the beginning when I was active it affected me more than later when I didn’t have enough time to participate. I was thinking about the issues even when I was not online in the EVOKE space. I still have some thoughts about the issues mentioned.
Nina	I am hooked! I want to finish Game 1 and get ready for the Game 2!!!!
Nenad	I want to learn more
Sentwali	I get into the habit of reading and searching and making a good reaction to an action happened.
Sonja	This is really something new for me, new experience. Also it helped me to feel free to say and write what I think should not be afraid that someone will misunderstand.
Mukasa	Well, the game has been very addictive - in a good way though. Often I found myself opening the Evoke website every time I opened my computer before doing anything else

Based on these responses, it can be concluded that the game certainly had the power to attract participants and provoke thinking. It made them seek out information and solutions and encouraged learning.

Frustration with the game and its experiences varied from participant to participant. Nenad and Sonja did not respond to this question; the others’ comments are reported in Table 15:

Table 15 Expression of frustration or discomfort

Participant	Question 17: Was there a situation where you felt frustrated or uncomfortable in any way? Please explain and give an example.
Sandra	I was rarely uncomfortable with the game itself. I was bit frustrated when I find out how much time is planned that somebody could spent on it... I think somebody could play 8 hours a day... I didn't have that much time. Other players are mainly not employed, or they are students with much more time on their disposal than me. Also I didn't like the fact that some personal thoughts are asked to be posted and then it is available to everybody on the Internet.
Nina	Many times. Not having enough time, not having an immediate answer, sample for the quests/lack of knowledge
Mukasa	In the beginning I almost lost hope in the game, Agents were so point minded. Which made the game look more like a competition. However just after one week or so, that problem was in one way or another solved.
Sentwali	Yes, at the imagination points some Agents who presented their good life as an advertisement instead of resolving the facing problems.

Question 18 was "Do you think this game caused players to feel empathy for people who might be in situations similar to those described in the game?" Three participants were not sure the game had this specific effect on its players, as is evident from the following comments:

> I got the impression that the people were more focused about how to win the game, then on learning new things... and at the end probably to feel empathy for other people in need. I am not sure about this question. (Sandra, Pre-game Survey)

> I do think so, however some of the people were playing the game for the sake of playing it, not for the sake of the outcome... (Nina, Pre-game Survey)

> No. I dont think one can feel empathy for far, far away people in dire circumstances while one is comfortably sitting in front of one's computer, sipping the coffee and

> munching on the bikkies (unless they are one's own relatives or people one personally know and love) (Nenad, Pre-game Survey)

Three participants stated that the game caused players to feel empathy. For example, Makasa remarked:

> Yes, the game describes real world situations. But, before you play the game, you might assume that the novels are just telling stories. But when you read posts or see pictures submitted by fellow agents, you get the evidence - and now you know its real. basically I always felt empathy is such cases. And of course as one of my sorrow responsibilities as an agent, I wanted to know what was happening in different countries. (Mukasa, Pre-game Survey)

Question 19 was "Has the game contributed to the increase of your knowledge and understanding of people from other parts of the world?" Responses are reported in Table 16.

Table 16 Increased knowledge and understanding

Participants	Question 19: Has the game contributed to the increase of your knowledge and understanding of people from other parts of the world? Please explain.
Sandra	Yes. When I read other peoples posts I would ask for something that I didn't understand and I would get the answer. Also, I research some topics that were mentioned e.g. educational system in Ivory Coast.
Nina	It certainly has. It was great to hear what people from other part of the world are thinking and what is their view on the issues.
Nenad	Yes.I learned a lot about self-sustained sources of energy. I also read the article and watched the video of "The boy who harnessed the wind" which made me think that all improvements in life have to come from inside (from the people who actually ARE in the bad circumstances, not from the people who live COMFORTABLY) In other words "Ask me to dinner, and I will not be hungry for a day. TEACH me how to fish and I will NEVER be hungry again."
Sentwali	Yes, first this game helped me to feel free and not being shy of my ideas that I am not nil and my ideas can be helpful. I learned the foreign cultures, technology and development.
Sonja	I increase my knowledge about heating under soil.
Mukasa	Yes, I have learnt a lot about other agents and from what they write on their blogs, they have painted clearer pictures of what their livelihoods and/ countries looks like.

Finally, all the participants were unanimous in responding to Question 20, which inquired about the potential of Alternate Reality Games to teach about challenging issues (see Table 17).

Table 17 Learning about challenging issues

Participant	Question 20: Based on your experience, do you think Alternate Reality Games (ARGs), such as *Evoke*, are a good way of learning about challenging issues such as living with hunger, environmental disaster, poverty, war, and so on? Please explain your response.
Sandra	I think yes. I would strongly suggest further development of the game in organisational and technical terms (more support is needed from the side of organizers, a lot of people reported that it is not clear what are the rules of the game).
Sonja	Games like *Evoke* can be used to exchange opinions on a given topic. At the same time you can find out how people in different parts of the world think about the given topic, and how is that different from you and your country where you live.
Nenad	I think they have a certain potential. Every little helps.
Nina	ARGs are an excellent way to learn about challenging issues and to find the way to solve some of them. I am grateful to be invited to join and participate and to had an opportunity to learn from those that are living with those issues on a daily basis!
Mukasa	Yes. Of course the first thing that a game like *Evoke* creates is a picture - then it raises awareness of a given challenge. Now, the player get out to think about it, collect evidence and they end up learning more about the challenge that they had never thought about. So, through evokations, they can then tailor custom made solutions to solve such challenges. I also admire the team work (collaboration) which is very key - as the game get all the players from different corners of the world in one place to solve common problems.
Sentwali	In one hand I am totally agree because many intellectual players make the debates about related topic and take some good solutions, so the results of debates can be helpful to anyone or NGO's who have a good heart for helping. But, in other hand, The concerns have no means to present the really situations on the games maybe because of technology access, low level of using technology materials, by impossible means.

Sandra and Sentwali were the only participants who appeared to take a critical approach to the game. Sandra believed that more support from the game designers would have produced better results and some concrete solutions. Sentwali, on the other hand, raised concerns about access to technology and the consequent inequities, which deny part of the population full participation in discussions and decision-making.

5.5.7 Exit interview

The code list for this particular data set comprised 59 different codes with 598 occurrences. The high number of codes resulted from a broader perspective on the data which expanded beyond the moral functioning framework. The full code list is available in Appendix H, and the full frequency report is available in Appendix I.5. The coding system for the second interview had to do with participants' reflections on their participation in the game, processes, and events. It consists of five categories: 1) about "Urgent Evoke"; 2) interaction with others; 3) moral functioning; 4) use of media; and 4) miscellaneous (Table 18). The questions in the second interview were less structured than the first. Research participants had an opportunity to expand on any aspect of their experience.

Table 18 Coding system: Exit interview

Category/subcategory and code example	Description
Category 1.	**About "Evoke"**
	Reflection on the game and the participants' participation
Subcategory	Defining "Evoke"
	Most participants expressed their opinion that *Evoke* was not a game. What was it then?
<forum>	Defining "Evoke" as a forum, an online conference space.
Subcategory	Motivation to play "Evoke"
	General statements about games and their purpose after playing "Evoke"
<extrinsic_awards>	Motivated to play because of the points, the awards by game designers or other reasons.
Subcategory	Positive aspects of "Evoke"
	Impressions and experience with playing "Evoke".
<gimpression_p>	General impressions of the game: positive.
Subcategory	Obstacles to successful play of "Evoke"
	Participants' reflections on potential obstacles and negative aspects of games that had an impact on their play.
<time>	Lack of time to contribute.
Category 2.	**Interactions with others**
	Interaction with other players in the game
Subcategory	Positive results
	What happened as a result of playing the game -- focus on positive aspects
<support>	Interacting with others to support ideas, encourage participation, or help with suggestions.
Subcategory	Connecting to others
	Expression of connections formed with others,

Category/subcategory and code example	Description
	friendships developed and empathy expressed.
<makingfriends>	Interacting with others and establishing friendship.
Subcategory	Negative experience
	The expression of negative experience in the game, conflict situations and similar
<solvingconflict>	Finding strategies to avoid or solve conflict.
Category 3	**Moral functioning**
Subcategory	Moral Sensitivity
	Participants' interpretation of the situation, cause-effect chains of events, and awareness of the existence of a moral problem.
<MS_responding to diversity>	Responding to diversity • Working with group and individual differences • Perceiving diversity • Becoming multicultural
Subcategory	Moral Judgment
	Participants' judgment which action would be most justifiable in a moral sense.
<MJ_coping>	Coping • Applying positive reasoning • Managing disappointment and failure • Developing resilience
Subcategory	Moral Motivation
	Participants' degree of commitment to taking the moral course of action, valuing moral values over other values, and taking personal responsibility for moral outcomes.
<MM_actingresponsibly>	Acting responsibly • Meeting obligations • Being a good citizen • Be a global citizen
Subcategory	Moral Action
	Participants' persistence in a moral task, and implementation of subroutines that serve a moral goal.
<MA_workinghard>	Working hard • Setting reachable goals

Category/subcategory and code example	Description
	• Managing time • Taking charge of your life
Category 4	**The use of media**
	The use of media, the reasons for its choice, and their effects.
<alternative>	Use of media as a choice, alternative representation.
Category 5	**Miscellaneous**
	Uncategorized codes
<improvement>	Suggestions for improving the game in the future, or what could have made the game even better.

5.5.7.1 Exit Interview Category 1: About "Evoke"

All the participants had trouble associating the term "game" with "Urgent Evoke." They generally viewed games as fun and/or entertainment, and therefore they could not describe what happened in "Evoke" in this way. They called it a "forum" or "discussion" (Sandra, Sonja), "serious work" (Nenad, Sandra, Sonja), or a "learning experience" and "research" (Mukasa, Sonja). Sandra stated, "I don't know how to define 'Evoke'" and "I would personally like that there is another name, not game.". In the first interview, Mukasa, Sentwali, and Sonja described "Evoke" as "more than a game." They revisited this idea in the second interview. Consider Mukasa's remark:

> I said that it was more than a game because like other games we had to play in Uganda, this one was a lot different. For example one of the things that you had to look at was 1) you contribute to a game and 2) you get a feedback that is specifically related to your situation, and 3) now you can see exactly how you have

> used what you posted and the comments to improve on things. So, 1) you find to look at the problem, 2) you get the people's comments about maybe on whatever you write about, and 3) you look at how you can implement your ideas and create positive change. So, yes I think that is why I said that it was more than a game. (Mukasa, Exit Interview_20935)

When asked to describe their motivation for playing "Evoke," participant goals and aspirations varied. All, however, seem to have been intrinsically motivated. When asked her reasons for responding to different topics, Sandra said the following:

> Because you have like an assignment and I am like a good scholar who would go step 1, step 2, step 3. I didn't choose, I mean everything was for me interesting, so I wouldn't find topic that I would not participate because I was curious about energy, I was curious about financing system, I was curious about poverty, women issues, something more, something less, but there were no topics that I said "no, I don't want to learn or know anything about it." So, I would go one by one (Sandra, Exit Interview_2963)

Initially, Sonja stated that her primary motivation for participating in this research was to help me with my Ph.D. She also stated that the question of how playing a game could be part of a doctoral study intrigued her. Her perception of games, especially computer games, was that they were entertaining activities, usually for children, and essentially a waste of time. She was ready to question her assumptions by playing "Urgent Evoke." In the interview at the beginning of the game, she said:

> When you asked me to play in this game, I thought "what? Game could help someone who liked to be a Ph.D.?" You really interested me. How games can be except, I don't know, games what children play, for instance, I don't know, some kind of guns, and… (Sonja, Pre-game Interview_8139)

> At first, I didn't expect anything from this game, really. Only I just wanted to help you do your Ph.D. But as time goes, it becomes more and more interesting for me. Because I can learn what people think about these kinds of problems, so it has forced me to think about different topics. (Sonja, Pre-game Interview_4403)

At the end of the game, Sonja spoke of her motivation differently. Her reason for playing had evolved into a meaningful contribution beyond being part of the research:

> I always start from my personal standpoint, which means I don't play for the sake of playing, or to write anything, but to write something that is meaningful, as it is accessible to people, no points for the point's sake. That is how I see it, to be meaningful. And the thing that you post, there is a responsibility behind it. It is not about posting something and then I don't care what would happen, as long as I get points. (Sonja, Exit Interview_8082)

Though Nenad gave up playing the game, he talked about what drove him to explore the first topic before his play ceased:

> I started reading, branching, investigating, one link leading to others not because I wanted to know more, I started branching because I HAD TO know more. It was like a thirst which can't be quenched. It was like an itch, which can't be scratched. The more I know the more I become conscious, the more I became aware of how

> little I know and it is pushing me into finding out more about it. (Nenad, Exit Interview_8921)

Nina, more competitive by nature, described her contribution as follows: "it was important for me to complete the mission, to hear/read about the things I did not know, to research" (Nina, Exit Interview_6505). As the motivating force in her "Urgent Evoke" profile, Nina listed family and food. "Doing things for others," as she wrote in the post-game survey, gave Nina's life purpose. Mukasa thought the greatest motivator was people reading his posts and leaving comments. However, he recognized the value of extrinsic motivation, such as the announced awards and points players could get for accomplishing missions. Winning a scholarship or having a mentor help him with his project would have been a good career start for a new graduate. He said,

> You expect to get some of these prizes, maybe mentoring which will eventually I think be very good for someone to be more strategic and to understand more how to solve the problems (Mukasa, Exit Inteview_21576)

Similarly, Sentwali was both internally and externally motivated to play "Evoke":

> It is important for me because here in Rwanda, in the developing country we have, I would like to know more about the world, to learn a lot, to know how other Agents think of doing something and what is happening in other countries. And I would also like to know how other countries with the some problems like to solve the… what can I say… just to deal with a problem related to society or community. There is a reason behind everything; I did not play only for joking, instead to learn and to win. (Sentwali, Exit Interview_3351)

A $1,000 USD award, although perhaps a good base for starting a project for some, might not have been encouraging to all the players. Not everyone was motivated by prizes. While Mukasa found the game's point system to be a motivator for players to respond to tasks, others had concerns. They thought the points were not necessary. As Nenad stated, "for me, those points were useless" (Exit Interview _10608). For others, they potentially ruined the game, as Nina's comment suggests:

> I understand that they needed to measure contribution. If idea was for us to GET HEARD utilising social network – did we really need to have points system, or there could be other ways to measure participation? (Nina, Exit Interview_6688)

Sandra said "votes are not important" (Exit Interview_18532), while Sonja described her participation as follows: "I don't play for the sake of playing, or to write anything, but to write something that is meaningful, as it is accessible to people, no points for the point's sake" (Exit Interview_8082). Some research suggests external rewards for learning such as points do little to reinforce intrinsic motivation to learn (Malone, 1981; Lepper & Malone, 1987; Raphael, et al., 2010).

Generally, the research participants were happy to have participated in the game. Some saw it as a great learning experience (Sandra, Sonja, Nina, Nenad), others as a great opportunity to make friends (Sonja, Sentwali), and others to create partnerships and collaborate (Mukasa, Sentwali). Many of the participants stated that the most important aspect of "Evoke" was that it was educational, dealt with serious issues relevant to actual life, and provided opportunities for finding solutions, as the following comments reveal:

> As far as I can see, those are all life problems of the mankind that are discussed (Sonja, Exit Interview_1163)

> That is definitely a way to raise awareness of what is going on around the world. (Nenad, Exit Interview_22839)

> From my experience of the game, it was really educative. I like to think about it, just like the meaning of "Evoke," as a good crash course really helped many people learn how to contribute to changing the world. I can say this because I saw what everyone has been contributing, most of them were contributing what the major problems in their areas were at the time (Mukasa, Exit Interview_126)

Mukasa stated that "Evoke" helped him improve his writing skills:

> I am currently participating in the citizen journalism in Africa project (Uganda Chapter) as a citizen journalist, the game helped me to develop my skills further through writing. Through reading other people's blogs I also learned from them. So, I must say that this game was very important to me. (Mukasa, Post-game Survey)

As much as the participants liked playing the game, they also pointed out obstacles to their play. Some found it hard and time-consuming (Nina, Sandra) or too complex and confusing (Nina, Nenad). Nenad explained that he had seen "Evoke" as an opportunity to learn about the new digital environment. Unfortunately, the experience proved overwhelming. After signing in, Nenad was faced with a multimodal, multimedia presentation, a combination of introductory video clips, stories told as comic strips, a dynamic community site where people posted new messages almost every minute,

different points of access to the content, and a great deal of information and instructions. Unused to the environment and battling initial technical difficulties, Nenad found the interface discouraging. He described his frustration here:

> I was unable to distinguish the important stuff from the unimportant, for example the "Evoke" web page. I had to read the whole pages left to right, right to left, bottom to the top, top to the bottom, for hours at times (as it seemed) to find what I was looking for (and I still do). In my opinion, no intuitiveness at all. (Nenad, Exit Interview_8321)

Sonja and Nina also found their lack of technical skills and unfamiliarity with the environment hindered their contributions. Very realistic in her expectations, Sandra realized that ten weeks was a long period of dedication for a mother and a working professional. She said,

> In general, I liked the game. I didn't expect this type of engagement. I thought it would last less, then I was surprised that you can spend so much time working on it, which made me unhappy at the beginning because I was.... I thought I could be more involved, but I couldn't because this was like huge amount of information and large number of participants. (Sandra, Exit Interviw_135)

In addition, Sandra did not like the openness and the flexibility of the game design. Despite the fact that every topic lasted for a week, there was no restriction on participants posting after that time or engaging in any topic at any time during the ten weeks. This made it more difficult for Sandra to participate. She felt she had more to offer than her circumstances permitted:

> At the beginning when I was active it affected me more than later when I didn't have enough time to participate. I was thinking about the issues even when I was not online in the Evoke space. I still have some thoughts about the issues mentioned. (Sandra, Post-game Survey)

> I mean, if I would have enough time, I could be day and night playing this game. It's never ending story. You don't have a feeling that you finished something. It's like you didn't do anything, or you did something, but something else is left. This could be related to our schooling because before we had lessons, and you know you learn something and that's it. Then you move to something new. You have a feeling that you have accomplished something. Here you don't know. You have a feeling that you accomplished, but you can do more and then I felt like I didn't do enough. (Sandra, Exit Interview_2098)

According to Sandra, there was so much work to be done and no time to be wasted on Facebook reports about daily activities or playing games just for fun. She expressed disappointment with the game design, which allowed endless research and contribution with no official completion of the discussion. Unable to find enough time to focus her attention on all the important issues at hand, she felt not "voiced enough."

At first, Nina had trouble comprehending "Evoke." It took her a week or so to understand the rules and missions; after that, she said,

> I think that I've figured out how I can gain more points. It's all strategy and I think I am very good at strategy. (Nina, Pre-game Interview_4787)

Although Nina was not able to participate in "Urgent Evoke" every week or to complete all the missions, she contributed to her own blog, posted images, left comments for other players, and supported them by writing encouraging messages on their "walls." Her main obstacle in working more on "Evoke" was finding sufficient time. Like Sandra, between domestic and professional commitments there was little time for additional engagement:

> For me working full time it was very hard and it was very time consuming. The tasks that were coming out were more and more difficult and, the original idea that you had needed to be followed. So, if it was less missions, I think that would be helpful, or if it was more time rather than just a week. (Nina, Exit Interview_1315)

Sentwali, whose Internet connection was not as good as that of the other research participants, spoke of his difficulties:

> I can spend about 50 minutes, or one hour importing even a video of 2 minutes or three minutes. That was the waste of money, but I would like to put some video also. That is why I used this blog, the blog because the blog is like the message. I write some test in what, I put it in the blog, then I post it. (Sentwali, Exit Interview_15041)

In spite of his delight with the opportunity presented by "Evoke" to "empower young people in Africa," Sentwali raised two important factors that might impede this idea: 1) use of the Internet might not be the best way to reach that goal, considering the low percentage of people in Africa with access to technology; and 2) in order for social changes to take place, there needed to be a change in the "mindset" of people:

> In brief, this is a great game . . . but it does not encourage a remarkable percentage of young people of Africa because they do not have access to play it. (Sentwali, Pre-game Interview_2390)

> This is a cause of mind change. This is a cause of mindset. Because here we learn, we learn to search, to seek the solution of the problem we have… (Sentwali, Pre-game Interview_7239)

When announcing the game, the game designers stated that "Urgent Evoke" was focused on the African continent; however, it seems the technical challenges they faced were not resolved.

5.5.7.2. Exit Interview Category 2: Interaction with Others

The codes in this category were divided into three subcategories to reflect the type of interaction the participants had with each other: positive results (collaboration, exchange of ideas, support, taking action), connecting with others, and negative experiences.

The most frequent codes in the Positive results subcategory were taking action (21 instances), support (19 instances), and exchange of ideas (19 instances) (See Frequency Report, Appendix I.5). Every mission in "Evoke" required players to take action in their local community. Here are some participant statements about community engagement:

> Anyway, the game was like that, about getting people to become more involved. […] I really became more involved with that thinking about New Zealand. (Nenad, Exit Interview_13264)

> And I was active in my local environment. For example about program for food supply that is from one TV station in our country. So, I had certain ideas and information that could be useful for them and I shared with them and they responded positively, which was good. (Sandra, Exit Interview_11480)

> This game has given me an idea, idea for to develop a topic, an idea for put out and get the social. (Sentwali, Exit Interview_820)

Not only did participants feel supported, encouraged, and helped by other players, as Sonja, Nina and Mukasa stated, they reported they felt compelled to do the same:

> There were, let's say, occasions where people helped you. If you don't know something and you ask a question, can someone help? I personally helped a girl, but there were occasions, I could see, where people simply wanted to help you. So, there was that kind of communication. They don't respond only to respond, but they direct you, or praise you, praise your work. And it becomes an encouragement to continue, I can say, totally positive as far as discussions between people were concerned. On a certain topic. (Sonja, Exit Interview_9867)

> Some players offering to mentor didn't contribute at all but there were others who were genuinely supportive and whenever you would put a post, they would go there, looked at it, post the comment, and encourage you to do another one. And I was focused on those ideas that I know and understand and was genuinely supporting the players. (Nina, Exit Interview_7807)

> . . . people from other countries where the problem is not common also found it important to help and try to advise on how you can, how you can make things better

> or change things in your world. Because probably they did some more research or they are knowledgeable about the topic or even they just interested and inquisitive to know what it is like. (Mukasa, Exit Interview_8709)

Beside the support and encouragement, exchange of ideas (19 instances) was constant throughout the game. Sonja reported that learning "how people from specific regions with specific cultural characteristics and understandings look at the same issue' had been one of the most important values of the game (Exit Interview_303).

> People have used similar processes to enhance something, to utilize the air where the development was not as such. Also to see how people are living in other parts of the world, because some of the participants were from remote areas of India, Philippines or from Africa and they knew more about it than we here. (Nina, Exit Interview_2014)

> To talk to others and to share. (Sentwali, Exit Interview_487)

Collaboration was emphasized as a characteristic of problem-solving and as a potential model for working together in the future:

> There were people that formed groups and I believe that they worked together. (Nina_Exit Interview_8908)

> And we have a project for a group of about 15 agents who gave a contribution on it but anytime everyone can join it, it called gratitude garden. For me I can participate in other projects of my colleagues if are international and ask them the ideas on mine. (Sentwali, Exit Interview_16782)

The participants were aware of different viewpoints and perspectives, but they generally reported that communication could help people understand each other and develop empathy. Mukasa said:

> So, the way to understand it is if you could look at, one when I went to someone's profile I looked at maybe the country, where they are coming from, try to read through their profile, see what they were doing. So, when I read their posts now, I try relate who they are and where they come from to what they are writing and see if there is any connection. (Mukasa, Exit Interview_12859)

Precisely because of those differences in experience and life circumstance, however, Nenad was concerned about a potential lack of understanding between players. Not being personally involved in a tragic event makes you indifferent, he believed. He said:

> But, for example when United Stated invaded Iraq, I don't know how many Iraqi people died during the invasion (10000 or 1000000), but then Iraqi captured one American girl, or boy, I think it was girl who was a pilot or she was just working with the army, and then they (US) sent I don't know how many solders to save her and bring back safely, you know. So, how much do you value a human life? I mean do you value the life of one person from the developed world in the same way as the life of a person from a non-developed world. (Nenad, Exit Interview_6840)

Most participants appeared to focus on what was said rather than how players represented themselves in their ID or photo. They stated that they trusted that other players were genuine in their posts. Sentwali was the only one who could not understand why

someone would put an animal photo, for example, as a profile image. This made him more reserved and suspicious about the honest intentions of that player. He explained:

> I didn't like it or as someone who used something like animals and who didn't put the picture. I asked myself why he did that. Why is he afraid to put a picture? Maybe he didn't like to be known when he did the bad things, he liked to joke, to have some vision of good kind, he didn't, he was not serious. (Sentwali, Exit Interview_ 10835)

The research participants often used personal experience (15 instances) from local contexts to engage in conversation.

Sonja reported a few instances of spam, but nothing substantial enough to hinder her participation. The only person who had a conflict with other players was Sentwali; as noted earlier, this may have been due to language issues. Sentwali resolved these conflicts through personal emails:

> Some, they finish understanding me, because, I didn't want to make the challenge in my comment where they make the comment, because I was afraid to interact with them. That is why I sent personal message. There I have the ability to say what I think and to ask him what he would like to say. But they finish understand and we make a good conversation. (Sentwali, Exit Interview_6967)

5.5.7.3 Exit Interview Category 3: Moral Functioning

The results of the exit interview showed the moral judgment element of the framework was a leading aspect of moral functioning, in accordance with the focus of the interview

(i.e., to reflect on the game, the process, and outcomes, and to understand what had happened). Though it was not half as strong as moral judgment, moral motivation followed; the other two categories dropped considerably in this hierarchy. This is especially noticeable with regards to moral action, which was extremely strong for the duration of the game. The results for moral functioning are shown in Table 19.

5.5.7.4 Exit Interview Category 4: The Use of Media:

The primary mode of communication used by participants was writing. However, most of the participants stated that images and videos were a powerful means of adding to a text-based post. Sonja said, "Maybe exactly with a photograph, or video, you could really say that you can help in a certain way" (Exit Interview_14212). Mukasa explained as follows:

> the good thing about using the photos and videos, digital media is you tell your stories from different dimensions and it was of course not to miss out important details of your story. For example, picture tells a lot, more than you can tell in words. (Mukasa, Exit Interview_11331)

The main reason participants did not use more images or videos was poor Internet connection, both for uploading and downloading. Sandra was selective in her choice of what to post. Though she uploaded a video she found on the web, she expressed her concerns about it a) taking her too long to find a good quality video; and b) the video being too long for others to watch. She added:

> I found one, but it was too long. It was a good quality video but it lasted for one hour. About food safety. I thought it is an important issue, it is a good quality

> video. It took quite a lot of time for me to find. But if somebody has time, they can watch. And I didn't want to overload my profile, my page with videos, particularly not with songs that anybody can find on a YouTube or somewhere else. It has no educational value. (Sandra, Exit Interview_10637)

Creating her own video required time and skills that she did not have. It seems that resources provided by game designers, such as links to websites and videos, and participants' individual textual contributions, provided already rich information that needed to be absorbed and responded to and participants in this particular study were not particularly motivated to add their own multimedia resources to what existed, choosing, rather, to engage in discussion through posting or commenting.

Table 19 Moral functioning - Exit interview (code frequency)

Moral Functioning

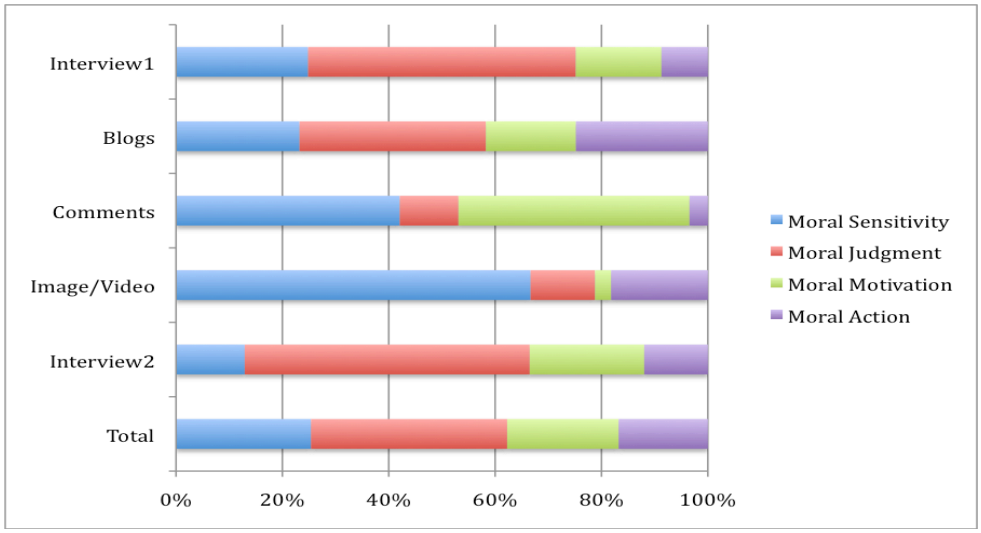
Moral sensitivity		Moral judgment		Moral motivation		Moral action	
code	# of inst.	Code	# of inst.	Code	# of inst.	code	# of inst.
<connectingtoothers>	7	<coping>	2	<actingresponsibly>	6	<persevering>	5
<interpretingsituations>	8	<reasoningethically>	44	<communitymember>	11	<planningandimplementing>	2
<perspectivesofothers>	2	<reasoninggenerally>	32	<developingidentity>	23	<resolvingconflict>	6
<respondingtodiversity>	10	<reflectiongonprocessandoutcomes>	25	<respectingothers>	5	<takinginitiativeasleader>	8
		<understandingconsequences>	8			<workinghard>	4
		<understandingproblems>	1				
Total	27		112		25		25

Chapter 6: Discussion

6.1 Behaviour in Actual Life and Morality of Actions

It was evident in "Urgent Evoke" that the focus of moral functioning shifted at different stages of the game, beginning with a higher number of instances of moral judgment (at the outset of the game), shifting to moral action (during actual gameplay), and finally to moral sensitivity and motivation (after playing the game) (Fig. 15). The full results of code frequency for moral functioning are reported in Table 20.

Figure 15 The difference in focus of moral functioning at different stages in the game



The first set of data, collected in the pre-game interview, demonstrated the highest level of the moral judgment subcategory (75). Next, there was a split between moral sensitivity (37) and moral motivation (26). The most frequent code in the moral sensitivity subcategory was <interpretingsituations>, in which research participants explained their positions and tried to determine what was happening; the most frequent

code in moral motivation was <developingidentity>, which was connected to players establishing themselves in the new community and through the task ahead.

The second set of data, collected through participant blog postings, shows a shift in moral functioning. Excluding the moral judgment subcategory (178), it is noticeable that players focused more on moral action (126) while maintaining a very high score in the moral sensitivity subcategory (118). The most frequent code in the moral action subcategory was <takinginitiativeasaleader> (87). Agents, engaged in game tasks and missions, took active roles in local communities and interacted with other players online. This time, the most frequent code in the moral sensitivity subcategory was <connectingtoothers>, in which participants listened to other people's experiences, sought common ground, and searched for potential partners for projects in actual life.

The third set of data included an analysis of comments posted by the research participants; the fourth set of data included the limited upload of images and videos. In the Comments data, the moral motivation (63) and moral sensitivity (61) subcategories came to the forefront. Participants generally avoided expressing ethical judgments but were generous in expressing support and encouragement. The most frequent code in the set in which research participants used images and videos to illustrate their points was <interpretingsituations>; this code marked instances in which they offered additional information on their blog postings, explaining what was happening in the photos or video.

The final set of data, collected in the exit interview, was strongest in the moral judgment subcategory (112). The participants were reflecting on the process of the game, their

participation, and the outcome. It is interesting to note the drop in focus on moral action (25). This may be due to the design of the survey and interview questions, which concentrated more on the game experiences and less on future actions.

One of the interesting aspects of "Evoke" is its potential connection to a player's activities outside the gameworld; this relates to the potential for educational re-use of "Evoke" or similar games. Players did not have to role play or imagine their characters. They could be and act as themselves. Real intrinsic motivation to either write or do something in their local communities was a driving force throughout the game. Without an explicitly-expressed focus on moral behaviour, "Evoke" gave players numerous opportunities for exploring how people acted and reacted to others, how they grappled with problems in actual life, how they tried to help without being asked or obliged to do so, and how they immediately connected with others through similarity of ideas or personal experiences.

A number of themes related to morality emerged as valuable milestones for education; these include the drive to lend a hand, to support or express understanding and empathy, to take a leadership role and call for action for a better future, to improve ethical conditions, and to fight for human rights. All these issues are presented through Narvaez and Lapsley (2005)'s four-model framework.

The purpose of my research, as stated in Chapter 1, was to find a model for analysis of ARGs (or video games in general) and explore how that model could inform game design for moral pedagogy and the teaching of critical literacy. If games are to help us develop

critical thinking skills, they need to inspire or trigger ethical sensibility or self-reflection. An effective mode of self-reflection is through narrative and critical literacy.

Therefore, in the context of "Urgent Evoke" I discussed what:

- Moral sensitivity meant in terms of building relationships with other players. (e.g. connecting to others or offering support and encouragement)
- Moral action meant in terms of taking responsibility and/or a leadership role (e.g. activism in the local community)
- Moral motivation meant in terms of identity-building and choosing good values (e.g. plagiarism and presentation of self)
- Moral judgment meant in terms of reasoning ethically and analyzing ethical problems (e.g. freedom of speech) (Fig. 16)

Figure 16 Moral functioning themes

Table 20 Moral Functioning - All five data sets

Category: Moral Functioning Interview 1	# of instances	Category: Moral Functioning Blogs	# of instances	Category: Moral functioning Interview 2	# of instances	Category: Moral functioning Comments	# of instances	Category: Moral functioning – Image/Video postings	# of instances
Subcategory: Moral sensitivity	**37**	**Subcategory:** Moral sensitivity	**118**	**Subcategory:** Moral sensitivity	**27**	**Subcategory:** Moral sensitivity	**61**	**Subcategory:** Moral sensitivity	**22 (265)**
<MS_connectingtoothers>	2	<MS_connectingtoothers>	70	<MS_connectingtoothers>	7	<MS_connectingtoothers>	46	<MS_connectingtoothers>	5
<MS_controllingbias>	6								
<MS_interpretingsituations>	16	<MS_interpretingsituations>	36	<MS_interpretingsituations>	8	<MS_interpretingsituations>	15	<MS_interpretingsituations>	17
<MS_perspectivesofothers>	5	<MS_perspectivesofothers>	9	<MS_perspectivesofothers>	**2**				
<MS_respondingtodiversity>	**8**	<respondingtodiversity>	**2**	<MS_respondingtodiversity>	10				
		<MS_understandingemotions>	**1**						
Subcategory: Moral judgment	**75**	**Subcategory:** Moral judgment	**178**	**Subcategory:** Moral judgment	**112**	**Subcategory:** Moral judgment	**16**	**Subcategory:** Moral judgment	**4 (385)**
				<MJ_coping>	2				
<MJ_reasoningethically>	34	<MJ_reasoningethically>	63	<MJ_reasoningethically>	44	<MJ_reasoningethically>	11	<MJ_reasoningethically>	3
<MJ_reasoninggenerally>	25	<MJ_reasoninggenerally>	68	<MJ_reasoninggenerally>	32	<MJ_reasoninggenerally>	5	<MJ_reasoninggenerally>	1
<MJ_reflectiongonprocessandoutcomes>	8	<MJ_reflectonprocessandoutcomes>	33	<MJ_reflectonprocessandoutcomes>	25				
<MJ_understandingconsequences>	6	<MJ_understandingconsequences>	9	<MJ_understandingconsequences>	8				
<MJ_understandingproblems>	2	<MJ_understandingproblems>	5	<MJ_understandingproblems>	1				
Subcategory: Moral motivation	**24**	**Subcategory:** Moral motivation	**86**	**Subcategory:** Moral motivation	**45**	**Subcategory:** Moral motivation	**63**	**Subcategory:** Moral motivation	**1 (219)**
<MM_actingresponsibly>	4			<MM_actingresponsibly>	6				
<MM_communitymember>	3	<MM_communitymember>	51	<MM_communitymember>	11	<MM_communitymember>	6	<MM_communitymember>	1
<MM_developingidentity>	15	<MM_developingidentity>	22	<MM_developingidentity>	23				
<MM_respectingothers>	1	<MM_respectingothers>	10	<MM_respectingothers>	5	<MM_respectingothers>	56		
<MM_valuingtraditions>	1	<MM_valuingtraditions>	3						
Subcategory: Moral action	**13**	**Subcategory:** Moral action	**126**	**Subcategory:** Moral action	**25**	**Subcategory:** Moral action	**5**	**Subcategory:** Moral action	**6 (175)**
<MA_persevering>	**3**			<MA_persevering>	5				
<MA_planningandimplementing>	1	<MA_planningandimplementation>	36	<MA_planningandimplementation>	2				
		<MA_resolvingconflicts>	3	<MA_resolvingconflicts>	6				
<takinginitiativeasleader>	5	<MA_takinginitiativeasaleader>	87	<MA_takinginitiativeasaleader>	8	<MA_takinginitiativeasaleader>	5	<MA_takinginitiativeasaleader>	6
<workinghard>	4			<MA_workinghard>	4				
TOTAL	**149**		**508**		**209**		**145**		**33 (1044)**

6.2 Supporting and Understanding Others

The research results suggest three primary reasons for engaging in dialogue: sharing personal experience and resources; asking for further information or clarification; and expressing agreement and support. Supporting and encouraging others was one of the most obvious, easily-identifiable behaviours in the analysis of comments left by players for each other. The results of the Moral Functioning framework in the Comments section of the game are shown in Table 20. The most frequent codes used in analysis of the players' comments were <connectingtoothers> and <respectingothers>.

As in other presented results, the frequency of this code varied depending on the stage at which the data were collected, as well as on the individual participant. At the beginning of the game, players did not interact much; support and encouragement was thus low (37 instances in the moral sensitivity subcategory). This number grew during the game and by the end totalled 118 instances.

Mukasa was the most constructive in his feedback, providing solutions or offering suggestions for concrete actions. For example, he wrote:

> Awesome, I like the way you put your story and match it with the facts. I really appreciate technology - and sometimes I think it's such a shame that we get all the technologies but not the skills!
>
> Maybe we could work on a project together - Its basically aimed at designing/ installing data repositories for the youth and communities to access information more easily. Its some thing I would really love to do. But could use some ideas here and there. :) (Mukasa, Comments_14961)

Although helping others was often a major trigger for engaging with co-participants, it is also evident that game rewards played a part in motivating players to to respond to each other's postings with praise and encouragement. As mentioned earlier, responding to someone else's blog could have been a way of gaining more game points. When the players strove for expediency (gaining all relevant points; completing all the missions in concurrent weeks), the ethical reasoning behind those actions might have suffered from haste or lack of in-depth rationalization (Raphael et al., 2010).

In the exit interview, participants were asked a question about the possibility of people from different parts of the world, with different cultural, social, economic, and educational backgrounds, being able to understand each other and work together. The question was whether a game like "Evoke," which opens a forum for conversation, could bridge that gap. Most of the participants thought such understanding was possible, as revealed in these comments:

> I think people among themselves could understand better even if they are from different parts of the world. (Sandra, Exit Interview_13488)

> Yes, I think yes. I think that a person can totally, totally understand another person. (Sonja, Exit Interview_11751)

> For many of us living outside of Africa and remote parts and not knowing much about the life there it was an eye opener. It is easy for us to say this is what we should be doing, but whether that can be done in other parts of the world in the same ways and how it can work there, I don't know, how… There were people that formed groups and I believe that they worked together. (Nina, Exit Interview_8609)

Mukasa actively tried to understand others:

> So, the way to understand it is if you could look at, one when I went to someone's profile I looked at maybe the country, where they are coming from, try to read through their profile, see what they were doing. So, when I read their posts now, I try relate who they are and where they come from to what they are writing and see if there is any connection. (Mukasa, Exit Interview_12859)

Nenad was skeptical about the capacity of people for understanding each other. He believed compassion and empathy required a deeper personal connection:

> The thing is that… There is an old saying that when something is not in front of your eyes, it is forgotten easily, I can't remember the saying, but basically that's it. When you hear that somewhere was an earthquake, where 20000 people died, you say "Oh, what a terrible accident," but you don't really feel it. If a close relative of yours died suddenly you would say "Oh, its terrible!" and you would really feel the pain (sorrow), you know. So, if you are personally involved in the matter, meaning that if there is somebody that you know or relative or cousins, or friends, then you tend to understand the danger much more quickly and then you tend to do much more than if you are talking about some other people far away whom you don't actually know. OK, I feel sorry for them. (Nenad, Exit Interview_6054)

6.3 Becoming a Leader

As many game theorists suggest, gamespaces are fruitful environments for informal and formal ethical education (Raphael, et al., 2010). Some teachers use commercial games in classrooms to teach ethical education. They engage youth in expressing their opinions,

practicing problem solving, and collaborative decision-making. Role-playing games allow the participants to explore otherwise inaccessible institutional, geographical, and temporal settings (Raphael, et al., 2010).

"Evoke," as an ARG, went a step further, enabling players to act as themselves and not only learn about leadership skills but practice them in both virtual and actual communities. Raphael et al. (2010) hypothetically claim (this was very likely realized in "Evoke") that games can be designed to increase participant motivation by asking players to consult sources outside the game, provide various perspectives on controversial ideas and issues, rely on distributed knowledge to find solutions, and develop through these actions leadership skills transferrable to actual life.

Raphael et al. (2010) identify three major tensions that impact civil education: the tension 1) between entertaining game play and content, 2) between built-in structure and the scope of agency, and 3) between the extent that players are focused on practicing ethical versus expedient reasoning. Raphael et al. strongly believe that learning happens when players apply what they learned in a game to the world around them.

Because it was a game requirement, there is ample evidence of "Evoke" players taking action. For example, consider the following remarks:

> The game, it gives you, ask you to be active in your local environment. (Sandra, Exit Interview_11408)

> Anyway, the game was like that, about getting people to become more involved. (Nenad, Exit Interview_13186)

> . . . now you can see exactly how you have used what you posted and the comments to improve on things. (Mukasa, Exit Interview_21220)

Games that offer players opportunities to impact political, social, economic, or even cultural events inside the gameworld have a high level of agency. This is even more pronounced in actual life. Participants in "Urgent Evoke" had maximum latitude in this respect, and they reported that they appreciated this:

> This game gave me an idea as to test my mind to talk to others and to share, to meet the challenges for sustainable and good results of any work. (Sentwali, Exit Interview_519)

In preparation for a leadership role, an important factor that could be practised in games is reflection (Koo & Seider, 2010; Nordlinger, 2010; Raphael, et al., 2010; Schrier et al. 2010; Sicart, 2010) and feedback from other players. The blog-based structure of "Evoke" meant opportunities of this type were readily available, and in the last week of the game when Agents submitted their Evokations, such opportunities were still more numerous. Mukasa reflected on this period in his interview:

> When I wrote my Evokation it had a couple of typos, errors, and parts where I missed out some of the details which people really wanted to know had a few people reading it and commenting. Most of these comments I had were not like "yes, this is awesome" or something like that. It said "ok this looks like a good project, but you didn't specify how the project is going to work and you did indicate how you're going to use the money." So at least it showed me that what I am writing is good. That's fine. But this proved that I missed out something they

> wanted to see. So it helped me to understand that people were reading and they wanted to see whatever you are writing that you are improving and making it better. (Mukasa, Exit Interview_5156)

As Raphael et al. (2010) posit, games like "Evoke" that allow players to set their own goals are more likely to lead to ethical growth than games with preset goals. Every player in "Evoke" was specifically asked to set up his/her goals on a weekly basis and to report back to the community with results or comments. In response, some participants took an active role in local neighbourhoods as they attempted to change the current state of affairs. For example, Sentwali observed,

> Here where I study there are a lot of roads children, almost everyday I told to them, instead of waste their time without doing anything I help them to get work such as small business and I hope that their future will be good if they continue like that. (Sentwali, Blogs_107542)

Others went beyond the local, attempting to be part of world change. For Sandra, the justification for this call to civic engagement was not always clear. She said,

> But, maybe this is ok, maybe it's not. Because if you have so many people asking to be active and then they can have all kind of different ideas. Maybe some of those ideas are useful, some ideas could be useless. So, it's not, I don't think it's, let say… appropriate to send somebody. They had, like, advised you that you can write that you are an "Evoke" player and that you should ask whoever you want to give you an answer or to be. Some people had an idea to contact Barak Obama and to contact some world leaders and… At some point the game teaches you to get

> pretty high. "Hi, I am a member of "Evoke" game and can I talk to Barak Obama?" I mean, it is crazy. Because I have some opinion about poverty. (Sandra, Exit Interview_11822)

Educating good leaders means teaching responsibility and effective citizenship (Raphael, et al. 2010). Sonja's engagement apparently stemmed from a personal choice to be "a good and responsible citizen":

> And the thing that you post, there is a responsibility behind it. It is not about posting something and then I don't care what would happen, as long as I get points. (Sonja, Exit Interview_8082)

6.4 Being a Good Citizen, Choosing Good Values – Illegitimate Appropriation of Text

Sentwali (Rwanda) was a very active player from the time he joined the "Evoke" community, sometimes uploading more than one post per day. His maximum number of postings was six in one day. As he explained in his first interview, he was very excited to learn from others and be part of an international group of people. Sentwali saw this as a rare opportunity; many citizens of Rwanda did not have access to a computer or the skills required to contribute to the "world conversation" (Sentwali_Profile).

After almost a month of participation, Sentwali posted a text in his blog about making a difference in society. It was not precisely related to previous dialogues or game topics, but was general enough to fit into any dialogue currently taking place. The post included a few sentences in quotation marks with no reference to its source. Stylistically, the writing was different from Sentwali's and there were no errors.

All Sentwali's blog postings from that moment until near the end of the game were similar. It was soon obvious to other players that Sentwali was borrowing from another source rather than writing his own thoughts. This resulted in fewer comments by other players and several requests for Sentwali to reference his sources.

In analyzing Sentwali's contributions, I attempted to track down the content in question. It did not take me long to find the sources of the text he had posted on the web. Sometimes Sentwali copied a whole section from another website, blog, or magazine article; sometimes he interwove the found text with a few of his own sentences. Often Sentwali, while not acknowledging his sources, did not attempt to make the postings appear as if they were his. He used quotation marks and the writing would at times contain names or references to something outside of the "Evoke" context. This made the content incomprehensible or confusing. For example:

> "I will never hire employees who look down on the poor," Luo said.

Sentwali then added a question, inviting other players to respond,

> What do you think? (Sentwali, Blog_82146)

Illegitimate textual appropriation or plagiarism is a matter of heated debate between theorists and experts, especially in today's digital era when "borrowing" is so easy. The issue is not as simple as it might initially seem, for "using someone else's words" can be understood in more than one way. Ronning, Thomas, Tomaselli, and Teer-Tomasselli see "creative ownership as a purely post-capitalist concept" (2006, p. 13) --that is, a legal construction that results from specific socio-economic relationships and a specific understanding of those relationships. This means that societies or communities with

different perceptions of those relationships will have different views about where ownership resides.

One side of the coin displays a picture of "illegitimate users" whose first language is not the one from which they are borrowing. A number of studies (Abasi & Graves, 2008; Ellery, 2008; Shi, 2006) focused on L1 and L2 plagiarism have shown that second language users' practice of borrowing text without proper referencing or with very slight modifications might well be a way of learning the language, and may result from a lack of ability to express oneself well enough in the second language.

The other side of the coin shows "illegitimate users" who, in addition to speaking a non-native language, come from a different cultural background which might not perceive the use of someone else's words as a criminal or punishable act. On the contrary, some cultures promote collective ownership of creative material, believing no ownership of an idea is possible (Shi, 2006). An exact reciting of a text is considered an expression of education that demonstrates familiarity with reputable sources (Beute, Aswegen & Winberg, 2008). In addition, "the re-oralisation of literature or of mediated art forms is a very common (and not always negative) practice in a culture where access to books and electronic media is restricted" (Ronning et al., 2006, p. 13).

Furthermore, game blog postings was far from academic writing or literary writing. A common practice on the Web, especially among bloggers who purposefully make that link evident, is to "borrow" a piece of news from one web page and publish it on another. Why were some players upset, then, when Sentwali took content from another Web page? If he spent time searching for writing that coincided with his own ideas, made an

effort to adapt it with a few of his personal comments, and offered it as understandable, correct English, why was he "punished" by unfriendly responses from players more focused on pointing out that his practice was "wrong" than on the ideas he wanted to share? And why would some who asked for references intimate his practice was wrong and unethical (Glenn, 2006)? Sentwali talked about the time spent on the game and his "search for words":

> I worked during the day and I played this game at the night because I had many problems, you see, I had problem of my language. I don't know, I am not strong in English. I spend my time with develop a topic I spent longtime for one topic and to collect some words, too many such. […] I did not post many blogs for my own topics. That is why I have done the search and I have found spend many times to the Internet and the readings. Because of time I spent to the internet doing the research. (Sentwali, Exit Interview_1381)

Sentwali appeared frustrated by the responses of others:

> Yeah, some countries, like the continent of America or Europe, are somehow able to know what I was talking about maybe they did the researches or they lived in Africa. Because if you write something, they go direct in Google, they got to search where you have picked that, you have, where, what can I say? Those persons from Europe or America are developed for comparative, they know technology, they use technology, you can't lie for them, you can't do something from Internet or from anywhere, because they watch even your country, they got in the different websites, you see, with computer, you can't lie about a country or

> region because even many news are there. With technology we are somehow in the same group, nearby, one nearby other person. (Sentwali, Exit Interview_13620)

Sentwali used the word "lie" even though he did not "lie about a country or region"; he understood that everything he posted was traceable, and that the Internet made "the world shrink." He felt like part of an online community ("we are somehow in the same group").

There might have been other reasons Sentwali chose to "play safe" by using someone else's words instead of his own; these are explained in the next section of this dissertation about moral judgment. It is evident, however, that the "illegitimate appropriation" of text is a gray area, particularly in a digital environment where those who write for the web often play with words, information, even personal identities. Strict advocates of copyright laws who want to see all ownership rightly acknowledged and users who believe that the difficulty of determining what composes an original idea makes it right to have no ownership over it must still find middle ground. It remains an open question, as Ronning at al. (2006) state:

> How can individuals, communities and groups protect their own intellectual and cultural creations, earning due royalties, while simultaneously ensuring that they remain part of the global information commons? (p. 14)

The argument about authorship goes far beyond the issue of intellectual property and copyright. From a critical literacy standpoint, the theories on language and text and its relationship with writers and readers produced by Bakhtin (1981), Benjamin (1936) and Barthes (1997) at the beginning of the 20th century is particularly relevant. All three theorists were concerned with contemporary changes resulting from technological and

mechanical progress. As Turkle (1995) and McLuhan (1998) claimed a few decades later, technology meant more than a simple modification of the way we physically did things. It had a significant impact on how we thought and perceived the world around us.

Although it is unlikely that Barthes, Bakhtin or Benjamin could have even imagined the invention of the Internet and hypertext, they all looked critically at the ways text was created, the possibilities it carried for its interpretations, and the directions it took to build a life of its own beyond its original author. Barthes even proclaimed the "death of the author": he argued that a text's meaning came from the ways it resided within other texts and references, none of them original. Meaning was brought to light by readers, "because it is language which speaks, not the author" (1997, p. 143). Language is always self-referential, quoting prior instances of itself in perpetuity; "the writer can only imitate a gesture that is always anterior, never original" (1997, p. 146). According to Barthes, the author is a term created as part of bourgeois ideology. Meaning does not lie in the writer but with the reader, the point at which the multiplicity of references makes sense: "a text's unity lies not in its origin but in its destination" (1997, p. 148).

Along similar lines, if we agree with Bakhtinian dialogic theory we must acknowledge that intertextuality is a characteristic of a language; every word or sentence has its reflection or occurrence elsewhere. Language is by itself multivocal, and an utterance can only be properly understood within the context of the social/linguistic forces in conflict at a given moment. As any utterance is a representation of a particular worldview, it continually creates and conveys new meanings. Once we realize that language is shaped by the social contexts of its use, we must agree that the form of a work of art tells us as much about the specific social conditions surrounding its

production as does its content. According to Benjamin (1936), the value of the authentic artwork is rooted in tradition and originality. Once the art is reproducible, its function becomes political.

Although Eco (1989) does not negate the presence of the author as Barthes does, he proclaims that a work of art is open to numerous interpretations. The artist presents the reader with possibilities; how the work of art (e.g., music) will be understood and performed depends on the reader. The appearance of the world has everything to do with one's relative position in it (Eco, 1989). Whatever routes readers take in constructing the world around themselves are equally valid. Eco does not talk about the Internet and hypertextuality, but his position can be applied to digital environments and current theories of constructivism.

If we position Sentwali in this modern matrix for understanding text and its relationship with readers, the issue of illegitimate appropriation becomes yet more complex. Some players openly criticized other players who copied and pasted text from websites to earn points. The tension between, "It's just a game; why not?" and "Be fair and do something important here," was present throughout the duration of the game.

6.5 What is Moral? – Freedom of Speech

On March 31, 2010, an Evoke Code of Ethics was posted on the EVOKEblog. It was created by one of the Agents in response to another blog posting by an Agent who had written his personal principles within the "Evoke" context and invited other players to collaboratively create a set of core principles for ethical behaviour in the community. All this, again, was triggered by some complaints about censorship and filtering of the

content that the game designers found inapproppriate or irrelevant for solving the problem at hand.

The "Urgent Evoke" Code of Ethics had five principles: 1) Make a positive contribution, 2) Give credit, 3) Appreciate great efforts, 4) Always encourage, never disparage, and 5) Keep my eyes on the prize (making the world a better place). While the announcement and publication of the Code of Ethics provoked positive, supportive comments, a social network with such a high number of participants could not exist for ten weeks without turbulence. Some players continued the discussion around freedom of speech, while others decided to ignore the whole issue and to make the most of the game until its conclusion. Eventually, the voices of those who called for reconciliation and a focus on positive outcomes and innovation prevailed.

This incident had a visible impact on the players; a loss of passion and de-motivation was obvious in the content contributions that followed. Those who had already invested a lot in the game and had high expectations for their results refrained from confrontation. Fear of penalization resulted in suppression of free speech and in self-censorship. Sentwali explained:

> I was afraid to make interactions with some people because I didn't want to lose what I have done. Many Agents have been stopped. I would search to interact with someone because I was afraid to lose work, to be stopped . . . To be stopped to continue playing this game. (Sentwali, Exit Interview_4508)

Sentwali's extreme caution in his comments , in which he avoided statements that were not simple gestures of support, might have been his way of dealing with sensitive issues.

Another response to "Evoke" was the creation of a parallel blog called "Invoke," "a crash course in saving capitalism, inspired by the World Bank and their game Evoke." The creators of this space called it "a ten-week propaganda game." They mirrored Evoke's progress, posting missions every week. They used the same comic strips as a starting point but changed the text of the story and added comments on the topics (Figs. 17 and 18). They also established a presence on Facebook, Twitter, Flickr, and Digg. While this site initially offered a promising space for opposition and critical perspectives on the role of World Bank and its polices in the African region, it did not manage to rise to its goals and dried up after week eight.

Figure 17 "Urgent Evoke" - First page of mission 3

© "Urgent Evoke" Mission 3 (Screenshot). Boskic, N. 2010. http://www.urgentevoke.com/

Figure 18 "Invoke" - First page of mission 3

© "Invoke" Mission 3. (Screenshot). Boskic, N. 2010 http://urgentinvoke.com/

To my knowledge, the "Evoke" designer team has never commented on the existence of "Invoke." Nor have they commented on the existence of "Delta Team" or "E4E." In

short, the “Evoke” designers and mentors took care of what happened in Evoke and did not concern themselves with how members expressed themselves outside of the community.

7. Conclusion

Games are a powerful space for simulating experiences in actual life (Gilbert, 2010). The choices and decisions made in a game may never occur in a player's actual life, but the process of making those choices and decisions has a high pedagogical value. There is potential for students to grow as individuals and increase their ethical sensibility from "lessons learned" through games. The most evident benefit of games as a learning environment is the opportunity for players to reflect on their choices, outcomes, and consequences (Koo & Seider, 2010; Nordlinger, 2010; Schrier, Diamond & Langendoen, 2010; Sicart, 2010). Such critical reflection leads to moral reasoning (Vikaros & Degand, 2010). Koo and Seider caution, however, that even when moments for reflection are offered, it does not mean players will take the opportunity or that reflection will occur.

The purpose of this research study was to explore the impact of the Alternate Reality Game "Urgent Evoke*"* on participants' behaviour and ethical reasoning within and beyond the gameworld, and the occurrence of potential changes in their beliefs, values, and ethical behaviour as expressed or discussed in the game. These elements were explored through pre- and post-game surveys and interviews and through text analysis of the players' narrative contributions in blogs and comments. To analyze the participants' reasoning, attitudes, and relation to other players, a four-component model of moral functioning was used (Narvaez & Lapsley, 2005) that explored moral sensitivity, moral judgment, moral motivation, and moral action.

The artifacts observed and recorded were collected from the research participants' blogs, comments, and image and video postings uploaded to the "Urgent Evoke*"* space. These

artifacts were analyzed using the text and video/image qualitative analysis software, *HyperResearch*.

The results suggest that the most frequent moral functioning throughout the period of study was moral judgment, which indicates that people constantly apply moral reasoning to their actions and the actions of others. They express their beliefs and identify values that guide them in particular situations. The power of ”Urgent Evoke” lay in its ability to create leaders and motivate players to create social change. Based on collected evidence and pre- and post game comparisons, the moral action function increased demonstrably during the game. The results also indicate that moral sensitivity is strongest in the area of participant interaction. These results manifest themselves primarily in the comments section.

In accordance with the four-component model, four different topics around critical literacy and the morality of actions emerged and were discussed here: 1) supporting and understanding others (as a part of the moral sensitivity function), 2) becoming a leader (as a part of the moral action function), 3) being a good citizen and choosing good values (as a part of the moral motivation function), and 4) freedom of speech (as part of the moral judgment function).

In all four of these areas, the ARG offered fertile space for growth and learning manifested through discussion, negotiation, and reflection. Therefore, I argue that ARGs are designed to motivate players to, first, contribute to the game; and, second, make changes in their actual life through that contribution. Based on this model, ARGs could be used successfully to teach students how to become responsible citizens with a more finely developed ethical sensibility.

The importance of this study is in its significant contribution to our understanding of how players online and offline practices intersect as a result of their play in an ARG. This study identified instances in which research participants' engagement raised their critical consciousness. It investigated how critical literacy could elicit personal reflection, which might lead to personal growth and the development of empathy. Finally, the results of the study suggested how immersive gameworlds might be harnessed for educational purposes in the humanities and social sciences.

7.1 Limitations of the Study and Recommendations for Further Research

One limitation of this study is the small number of participants. Small-scale qualitative research, however, allows for more complex analysis of a smaller set of data. While the results of this study are not generalizable, the detailed data and analysis offers particular insights into the situated learning practices of a handful of players that a larger study might not reveal.

Further research with this game could be developed in two directions: 1) acquiring permission to use artifacts from other players (as the site is still open and accessible on the web), creating a larger set of data for analysis; and 2) following up with current participants to investigate how skills and practices, such as moral functions, developed during the game continue to be part of practices beyond the gameworld.

The latter approach could be implemented and investigated in different learning environments, such as online education settings, primary, secondary or post-secondary classrooms, and so on.

Further research with ARGs beyond this game could entail replicating this study in the context of another game. As well, it would be useful to examine the merits of ARGs for moral education in more formal learning contexts. For example, how might these games be used in conjunction with classroom activities in grade school settings? Finally, in examining questions of morality and ethics in gameworlds it is important to delve further into issues such as how ethical priciples are built into game designs, who creates games, who own the spaces, who is included and excluded along the lines of accessibility, literacy level, etc, and how such inherent biases influence player behaviour.

7.2 Implications for Education

The questions with which I began this research questions were as follows:

1) What kinds of moral functioning are evident in human play in immersive gameworlds?
2) How can players and educators who use these spaces grow as individuals in their ethical sensibilities?

For players to engage in this game, they had to be literate, and to engage in the game with attentiveness to the moral implications of their actions, they had to be critically literate. At the outset of this thesis I referred to Ciardiello's definition of critical literacy. Notably, all five "best practices" identified by Ciardiello (2004) were evidenced in my participants' contributions. Those practices are: 1) examining multiple perspectives, 2) finding an authentic voice, 3) recognizing social barriers and crossing borders of separation, 4) regaining one's identity, and 5) the call of service (Ciardiello, 2004, p. 139). Every text can have multiple meanings. Providing different perspectives helps readers view how text may be constructed based on personal values and cultural background. To better understand the other players, Mukasa (Uganda) observed that he would go to their

profile pages, read about them and "try to relate who they are and where they come from to what they are writing and see if there is any connection" (Exit interview_12859). Both Sonja and Sentwali talked about finding their authentic voices and being heard by others. Ciardiello emphasizes "crossing borders of separation" as one of the major critical literacy practices. As mentioned before, Sentwali claimed to have bridged differences and social barriers in becoming a part of the "Evoke" community. He proudly talked about the friends he had met in the community, the relationships he had established, and the feeling of respect that he had felt by other players. The fifth of Ciardiello's major key elements of critical literacy, the call of service, was evident in all six research participants' contributions, from Sonja's explicit talk about writing responsibly to Nenad's comment on how the questions in the game encouraged him to reflect on his local situation in New Zealand, but also to think about the world on a global level.

Despite the participants' freedom to voice their opinions, power dynamics were at times troublesome. Luke's (2000) discussion of literacy education in Australia, although focused on formal education settings, is very relevant to the developed power relations in "Evoke." He claims, "literacy education is always a situated response to particular political economies of education" (p. 449). Similarly, the "Evoke" community was created under the supervision of, and funded by, the World Bank, and had to exist inside the borders of a game design and arrangements that encouraged a particular type and distribution of discourse. Clearly the fact that the World Bank sponsored the game influenced the way game Designers and Agents acted and the textual practices in which they engaged. As Sentwali observed in the exit interview, after the censorship issue "I was afraid to make interactions with some people because I didn't want to lose what I

have done. Many agents have been stopped" (Exit Interview_4508). The other research participants decided avoid the issue and focus only on the problem at hand. Although social media spaces have been characterized as highly democratic, they remain subject to particular economies of knowing that prevail outside the gameworld.

From the start of the game, there was a belief in the potential of "Evoke" to be used for educational purposes. Community members such as the New York City Writing Project for English, Art and Technology classrooms expressed their intention to use "Urgent Evoke" in teaching. Teachers, primarily from the U.S., self-initiated a wiki page (Urgent Evoke Wiki, 2010) on which they posted suggestions for the classroom and ideas for collaborative projects. They also opened a google.doc (Evoking Teachers, 2010) in which teachers could share strategies and connect to each other.

Although a space like "Evoke" might be used in the context of formal education settings, this has not been the focus of this study with adult players and therefore I will not comment extensively on possibilities for use of the game in classrooms. Rather, I will consider implications for learning more broadly. In "Evoke" the players were from different parts of the world, were adults of varying ages, and participated in the learning process voluntarily. This diversity allowed for rich and challenging learning opportunities that required negotiation of customs and beliefs players brought to the game from their particular lifeworlds. Such non-traditional teaching and learning spaces appear to be worth considering in building capacity for global education.

Network communications technology has made the world "shrink," connecting people from various parts of the planet who in previous generations would never have come in contact (Noddings, 2010). The need for global education (internationalization of

education) or global citizenship has been put on the agenda of many higher education institutions (Abdi & Shultz, 2008; Richardson, 2008; Stearns, 2009). The implementation, however, is not yet smooth or beyond "admirable aspiration" (Haydon, 2006, p. 462). "Going global" and collaborating or communicating with people from various cultural, educational and political backgrounds raises questions of ethics. If we are citizens of the world, to what extent do we have common core values? Dower (2008) argues that the core values of citizenship are "core values of dialogic and nonviolent communication, coupled with the acceptance of the universal status of all human beings and a sense of trans-society responsibility for what happens in the world" (p. 52). Kiss and Euben (2010) concur with Dower in taking a dialogical approach to moral education. Only through tolerance, readiness to listen and reflective practice do we learn about what others value and how they live (Spelman, 2010).

Accessibility of information makes us more aware of events around the world and living conditions of others. There is still a huge gap between knowing about inequalities and injustices and doing something about them. The importance of ethics education, as Christie (2005) states, is to "challenge simple acceptance of 'things as they are'" (p. 240) and develop a discourse on humanity, rights and citizenship. She argues that the traditional Western perspective on ethical reasoning and universal claims should be contested, allowing for different views, and for "think[ing] about ourselves as human beings in relation to others" (p. 242). Opening the floor for discussion, as happened in "Evoke" through gameplay, is one way to engage into such discourse. Both Christie (2005) and Chen (2011) argue for "bringing suffering into conversation" so that it can be acknowledged, rationalized, and ultimately lead to ethics of care. The research

participants shared their life stories and everyday experiences in the context of a game (Sentwali wrote about young girls forced into prostitution, Mukasa wrote about the struggle for clean water, and Sonja about the civil war). Others responded with warm and supportive words, or with ideas for solutions.

Ethics education is closely related to citizenship education, or teaching individuals to be part of the world. Respect for others is often mentioned as a pillar of ethical behavior (Haydon, 2006). Haydon states that "respect" has special importance in global citizenship education. He claims, "what is needed is respect, not for distinct cultures, but for human cultural contexts in all their variety" (p. 459). Results from this study revealed that respect for others and connecting to others (represented by the codes <respectingothers> and <connectingtoothers>) were the most common form of communication in the context of participants' interactions with other players. Sentwali repeatedly said that he felt "appreciated" by others.

Richardson (2008) cautions us not to forget to acknowledge the influence of national culture. What it means to be ethical and to live ethically is challenging, as evident from the events in "Evoke," which showed how ethics is highly contextual. Everyone brings into the community his/her own particular understanding of values and the ways of behavior. Creating games like "Evoke" and providing a setting for various perspectives to be brought together is appears to be one method of teaching the contextual nature of ethics.

Using games in learning situations, especially in global educational practice, is a method that needs to be further explored, with attention to careful instructional designed. Many would agree with Blackmon (2011): "we have to avoid the lure of bleeding-edge

technologies without solid pedagogy." Drawing on the rich work of James Gee and Donald Murray, Blackmon states that much could be learned from game design, especially in the area of student engagement. Both Crecente (2011) and Nicole (2011) see true value in using game elements in education only if they are embedded in the learning process, allowing students to solve problems through collaboration and inquiry. Crecente gives an example of a new 12-week Facebook ARG called "America 2049," in which players examine human rights in the United States and their own positions in relation to those rights. Participants have the opportunity to be in "someone else's shoes" and learn about various social and political issues.

An important element in using games for education is finding strategies for motivating the participants. Just as my research participants questioned the value of awards and points in "Urgent Evoke," so do educators and researchers (Salter, 2011). Salter agrees with other game theorists, such as Zimmerman (2004) or McGonigal (2011), who argue that instant feedback is very important and sometimes even critical for players' engagement. However, finding the balance between intrinsic and extrinsic motivation is not easy. Of course, this is not a new problem in education.

Finally, bringing games into the realm of academic inquiry, as Welsh (2010) posits, invites interrogation of the attitude that games are unworthy of serious study and thus unworthy of use as a credible teaching method. This attitude derives from the historical view of games as purely entertaining discussed in Chapters 1 and 2. The merging of theoretical and critical views with experiential and practical ones may take time, but ARGs like "Urgent Evoke" demonstrate that immersive gameworlds can provide space for rich, exhilarating, thought-provoking debate and knowledge building.

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Appendices

Appendix A[1]: Call for Participation - Poster

If you are 19 or older ...

Research Study

Narrative Practices in Immersive Gameworlds: Critical Literacy

- Play and have fun!
- Change the world!
- Participate in a study!

WHAT?

Play an Alternate Reality Game.

Be part of making the world a better place...
Tell us about your experience.

Everything completely online.

HOW?

Play a game for 10 weeks and devote up to 5 hours in total of your time to respond to questionnaires and interviews.

WHEN?

Starting in March 2010.

WHY?

The purpose of this study is to investigate what critical literacy practices are evidenced in human play in immersive gameworlds, and whether they can influence the way people think and behave in real life.

[1] "The working title of this study was "Narrative Practices in Immersive Gameworlds." Documents in the appendices such as the recruitment poster, call for participation, consent form, surveys and interview questions reflect this fact.

HOW TO GET INVOLVED:

Contact the Co-investigator, Ms. Natasha Boskic, at 604 – 822-1831 (email: natasha.boskic@ubc.ca)

Appendix B: Call for Participation – Letter

Call for Participation
Narrative Practices in Immersive Gameworlds

Principal Investigator: Dr. Teresa Dobson, Associate Professor, Language and Literacy Education. Phone: 604 822-8365

Co-investigator and contact person: Natasha Boskic, Ph.D. candidate, Language and Literacy Education, The University of British Columbia. Phone: 604-822-1831

Purpose:
This project is a research study for a Ph.D. graduate thesis.

The purpose of the study is to investigate how people communicate and build narratives through human play in immersive and multimodal gameworlds, and whether those practices can influence the way people think and behave in real life. The research will draw on the experience of game players engaging in Alternate Reality Games (ARGs) in order to respond to the research question.

Participation in the study:
You must be 19 or older to participate in the study. If you decide to participate, you will be required to play the game "EVOKE." You are expected to stay an active player in the game from its beginning to completion. The game will run for 10 weeks, starting on March 3rd, 2010. The game is a project for the World Bank Institute. The designers describe it as "a crash course in changing the world." More information about the game is available at: http://blog.avantgame.com/2010/01/urgent-evoke.html

In addition to your play, you will be required to complete a pre- and a post-game survey, each followed by an interview, which will take up to 5 hours of your time in total. The surveys will be available for completion online and the interviews will be conducted using Skype. You can withdraw from the study at any time.

Remuneration:
There is no remuneration for your participation in the study. However, your name will be entered in the draw for an Amazon gift prize in the amount of $30-50. In addition, the "EVOKE" game designers offer prize awards for those who complete all 10 missions and all 10 quests.

Contact for information about the study:
If you have any questions or desire further information with respect to this study, you may contact the Co-investigator, Ms. Natasha Boskic, at 604 – 822-1831 (email: natasha.boskic@ubc.ca)

Appendix C: Consent Form

Consent form

Narrative Practices in Immersive Gameworlds

Principal Investigator: Dr. Teresa Dobson, Associate Professor, Language and Literacy Education. Phone: 604 822-8365

Co-investigator and contact person: Natasha Boskic, Ph.D. candidate, Language and Literacy Education, The University of British Columbia. Phone: 604-822-1831

Purpose:

This project is a research study for a Ph.D. graduate thesis.

The purpose of the study is to investigate how people communicate and build narratives through human play in immersive and multimodal gameworlds, and whether those practices can influence the way people think and behave in real life. The research will draw on the experience of game players engaging in Alternate Reality Games (ARGs) in order to respond to the research question.

There are currently many games on the market which focus on serious world problems such as poverty, hunger, war, energy crises, global warming, health and crime. ARGs encourage participants to interact with each other in real-time using Internet, phone, forums, blogs, and other social media to address these issues through a game format.

It is believed that there is potential for ARGs, which often focus on environmental and health issues, to bring real social change, raise critical consciousness, and teach empathy and ethical sensibility. If so, then new ways to analyse such games are needed. The intent of this study is to develop a model that will contribute to our understanding of how players interact on-line and off-line as a result of their participation in an ARG.

Participation in the study:

You must be 19 years of age or older to participate in the study. If you decide to participate, you will be required to play the game "EVOKE." You are expected to stay an active player in the game from its beginning to completion. The game will run for 10 weeks, starting on March 3rd, 2010. The game is a project for the World Bank Institute. The designers describe the game as "a crash course in changing the world." More information about the game is available at: http://blog.avantgame.com/2010/01/urgent-evoke.html

In addition to your play, you will be required to complete a pre- and a post-game survey, each followed by an interview, which will take up to 5 hours of your time in total. The surveys will be available to complete online, and the interviews will be conducted using Skype.

Confidentiality:

All documents relating to your participation (the results of the surveys and interview transcripts) will be stored in a separate file on the Co-investigator's computer, which will be password protected. All raw data will be destroyed after five years.

You will have a choice either to be identified by name in the reports of the completed study, academic papers and conference presentations, or to have your identity kept strictly confidential through the use of a name you adopt just for the study, that is, a pseudonym. You can change your mind about how you wish to be identified at any point in the study. If you allow us to use your real name, you will still have the option of indicating whether you wish any of your comments if quoted, to be attributed anonymously, that is, not in your own name.

If you prefer to use a pseudonym, you are highly recommended to open a separate email address and create a login id and password for the purpose of the participation in the game and in the study.

Remuneration:

There is no remuneration for your participation in the study. However, your name will be entered in the draw for Amazon gift prize in the amount of $30-50. In addition, the "EVOKE" game designers offer prize awards for those who complete all 10 missions and all 10 quests.

Contact for information about the study:

If you have any questions or desire further information about this study, you may contact the Co-investigator, Ms. Natasha Boskic, at 604 – 822-1831 (email: natasha.boskic@ubc.ca)

Contact for concerns about the rights of research subjects:

If you have any concerns about your treatment or rights as a research subject, you are invited to contact the Research Subject Information Line in the UBC Office of Research Services at 604-822-8598.

Consent:

Your participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time without jeopardy or penalty to you. If you agree to participate, fill out the form and email to: natasha.boskic@ubc.ca or fax to 604-822-2015, attention to Natasha Boskic.

Your signature below indicates that you have a copy of this consent form for your own records.

Your signature indicates that you consent to participate in this study.

_____

Participant Signature Date

_____

Printed Name of the Participant

Appendix D: Pre-game Survey Questions

Narrative Practices in Immersive Gameworlds

Research subject # 101

Personal information

1. Gender
    a. Male
    b. Female
2. Age range
    a. 18-25
    b. 26-35
    c. 35-45
    d. over 45
3. Country of origin

    _____

4. Country of residence

    _____

5. Education

    _____

6. Native language

    _____

Tech and game experience

7. How would you rate your computer skills
    a. basic
    b. average
    c. advanced

8. How familiar are you with:

	Heard of	Use occasionally	Advanced user
Email			
Blog			
wiki			
Facebook			
Twitter			
My space			
Skype			

9. Have you ever played a computer or video game?
    a. Yes
    b. No
10. Have you ever played an Alternate Reality Game?
    a. Yes
    b. No
11. Do you consider yourself a game player?
    d. Yes
    e. No
12. If yes, how often do you play?
    a. more than 3 hours a day
    b. a few times a week
    c. a few times a month
    d. less than a few times a month
13. If yes, how would define your skills/competences
    a. a beginner

b. an average player

c. an advanced player

14. When playing, do you prefer:

f. playing with others

g. playing alone

h. doesn't matter

15. How often to you lose track of time when playing a game? Explain:

16. How real is a game world for you? Explain:

ARG

17. Why have you decided to play this game

a. invited

b. recommended to me

c. my own choice

18. Please provide details about your reasons for playing.

19. What do you expect to gain from this game?

d. Fun and entertainment

e. new friends

f. do something important

g. change myself

h. learn

i. other

_____

20. Do you believe that games can have an impact on real life-behaviour? Explain (Text box)

Appendix E: Pre-game Semi-structured Interview Questions

Narrative Practices in Immersive Gameworlds

Research subject # 101

1. I'd like to review your survey answers to make sure I've understood your responses and to give you opportunity to expand on your comments if you'd like to do so. In your response to question # on the pre-game survey, you noted that . .
    a. Can you elaborate?
    b. What did you mean by . . .

Appendix F: Post-game Survey Questions

Narrative Practices in Immersive Gameworlds

Research subject # 101

"Urgent Evoke"

1. How often did you play the game? (Please be as precise as possible. How many hours per day?)

2. What was your motivation for playing the game?

3. Did the game meet your expectations? Please explain

4. Did you interact with other players?
    a. Yes
    b. No
5. If yes, what was your preferred way of interaction?
    a. Commenting on other people's blog posting – Yes/No
    b. Responding to other people's comment – Yes/No
    c. Leaving comments on people's profile pages – Yes/No

d. Responding to the comments on my profile page – Yes/No

e. Sending personal emails throughh *Evoke* – Yes/No

f. Contacting players outside of the game – Yes/No

6. If yes, how often?

   a. Only few times

   b. About once a week

   c. More than once a week

7. Did the interaction with other players meet your expectations? Explain:

8. Did you feel supported/helped by other players? If yes, please give an example. If not, why not?

9. How sincere do you think you were in describing yourself?

10. How sincere do you think you were in describing your real-life situation?

11. What media did you use to tell your story? Why did you choose these media?

12. Can you comment on the artistic/creative choices you made in developing your story?

13. How imaginary or realistic do you think your story was?

    a. Everything was from my life experience

    b. I combined real life and imaginary stories

    c. The whole story is a complete fiction

    d. Other _____

14. How important was this game for you personally?

15. How would you describe the effect the game has had on you?

16. Do you think this game caused players to feel empathy for people who might be in situations similar to those described in the game? Explain:

17. Based on your experience, do you think ARGs are a good way of learning about challenging issues such as living with hunger, environmental disaster, poverty, war, and so on? Please explain your answer:

Appendix G: Exit Interview Semi-structured Questions

Narrative Practices in Immersive Gameworlds

Research subject # 101

1. Can you comment generally on your experience of playing this game?
2. Can you recall any moments in the game play that were particularly striking or evocative? Why did you find these moments striking or evocative?
3. I'd like to review your survey answers to make sure I've understood your responses and to give you opportunity to expand on your comments if you'd like to do so. In your response to question # on the pre-game survey, you noted that . .
    a. Can you elaborate?
    b. What did you mean by . . .

Appendix H: Master Code List

Table 21 Master code list with categories, description and example

Category	Description/Example
1. About games/play	This category covers both digital and non-digital games, participants' experience and point of view.
Subcategory: General	Participants' experience with play and games, both digital and non-digital, their opinions on positive and negative aspects of games; categorization of games, and their preference with playing alone or with other people.
<computergames>	Experience or lack of experience with playing computer and video games, including ARGs. [Sonja, Pre-game Interview_181,277] *I have never ever played games on the Internet before.* [Nina, Pre-game Interview_290,921] *The only games I was exposed to were the games played on Play Station.*
<computergames_n>	Experiences with playing non-digital games. [Sandra, Pre-game Interview_493,1269] *There were a lot of games for us to play, using balls and those games were mainly related to sports, but also related to some sort of competition.*
<gameaspect_n>	Remarks about negative aspects of games, such as addiction or violence. [Nina, Pre-game Interview_1878,1971] *they can teach negative things like using the guns and weapons and all other things.* [Sandra, Pre-game Interview_1933,2057] *…we were not allowed to go there because this was considered as waste of time. So I was brought up not to play those games.*
<gameaspect_p>	Remarks about positive aspects of games. [Nenad, Pre-game Interview_2094,2194] *those web games are really nice and good and intuitive and there are things which are really helpful.*
<gametype>	Categorization of games by the participant. [Sandra, Pre-game Interview_205,218] *computer*

Category	Description/Example
	game; [Sandra, Pre-game Interview_223,238] *educational game;* [Sandra, Pre-game Interview_619,704] *games with other children on the street*
<playingwithothers>	Expression of preference to play a game with others. [Mukasa, Pre-game Interview_1435,2061] *if you have other players they will probably encourage you, collaborate with, yes, that's a good thing about playing with others.*
Subcategory: Perception of games / purpose of playing	Why do people play games and when? What is there purpose?
<competition>	Perception of games as competition. The purpose of playing games is to compete. [Mukasa, Pre-game Interview_419,522] *Well, in these games you can probably just try to make it to the top because it was like a competition.*
<forchildren>	Perception of games as being only for children. [Sonja, Pre-game Interview_279,379] *But, as a child, of course, I played games.*
<fun>	Perception of games as fun or entertainment only done in your free time. The purpose of playing games is to have fun or the main design goal of games is for people to have fun. [Sandra, Pre-game Interview_1681,1711] *gaming is always related to fun.*
<educational>	Perception of games as educational. The purpose of playing games is to learn or the games are designed to teach. [Nina Pre-game Interview_1204,1447] *But at one points one of the children was struggling with the comprehension. And because he liked to play a game, we believed that if he used a guide book how to play the game and passes the level, his level of comprehension will increase too.*
2. About "Evoke"	Reflection on "Evoke" and the participation in the game
Subcategory: Potentials and	This category covers participants' first impression

Category	Description/Example
expectations	on "Evoke"
<socialaction>	Perception of "Evoke" as a tool for social change. The purpose of the game is to call to action. [Nina, Pre-game Interview_2068,2096] *The games like the one I am participating in at the moment I believe have a power to teach and to prompt some people to act.*
<collaboration>	Potential for collaboration. Planning mutual projects or expression of importance of teamwork and collaboration. [Mukasa, Pre-game Interview_1553,1756] *the idea of teamwork, makes you feel even better. You get to know what other players think, you share ideas and experiences. You don't get too bored, because you are more like in a virtual community.*
<exchangeofideas>	Potential for interaction with others to exchange ideas and share information. [Sentwali, Pre-game Interview_6614,6841] *Because we share what we have, we share what we live, we share what is around, what is in our society.*
<q_assumptions	Potential of games to question personal assumptions; potential of mind change. [Sandra, Pre-game Interview_3107,3233] *I would like to check is my prejudice about gaming as waste of time – correct or I should reconsider gaming as a phenomenon.*
<participation>	Comment on participation in "Evoke" and potential difficulties/obstacles. [Nenad, Pre-game Interview_964,1120] *This game is different, longer and as I said the idea is good but I think that the way how you work through I think it is for more advanced than I expected.*
Subcategory Defining "Evoke"	Attempt to define "Evoke"
<forum>	Defining "Evoke" as a forum, an online conference space. [Sonja, Exit Interview_1251,1538] *I don't think I would categorize that as a game, rather as some kind*

Category	Description/Example
	of a discussion, a forum or however one can call it.
<notgame>	Because it is not fun
	[Sandra, Exit Interview_4478,4561] *But I didn't see any entertainment elements, therefore I thought this is not a game.*
<morethanagame>	Using this particular phrase to describe "Evoke"
	[Mukasa, Pre-game Interview_2525,2545] *It's more than a game.*
<seriouswork>	Perception of Evoke as a serious work.
	[Nenad, Exit Interview_548,579] *For me, that was a very serious business.*
<undefined>	"I don't know how to define 'Evoke'"
	[Sandra, Exit Interview_5909,5944] *I don't know how to call this event.*
Subcategory: Motivation to play "Evoke"	The main reasons for playing "Evoke"
<intrinsic>	Internally motivated to play the game.
	[Sandra, Exit Interview_2963,3444] Because you have like an assignment and I am like a good scholar who would go step 1, step 2, step 3. I didn't choose, I mean everything was for me interesting.
<extrinsic_awards>	Externally motivated to play.
	[Sentwali, Exit Interview_3264,3302] *I would also like to get a certificate.*
Subcategory: Positive aspects of "Evoke"	Expression of the elements of the game that the participants find positive and encouraging
<educational>	Expression of the potential to learn meaningful and relevant content by playing "Evoke", either from the information provided by the game designers, or by the participants.
	[Nenad, Exit Interview_8993,9311] *I started reading, branching, investigating, one link leading to others not because I wanted to know more, I started branching because I HAD TO know more. It was like a thirst which can't be quenched.*

Category	Description/Example
<findingsolutions>	Expression of the potential of the game, i.e. participants to find a solution to a problem. Seeing this as a goal of the game. [Sentwali, Exit Interview_376,416] *Agents who work together for solving any problem happened with the same topics with different suggestions but with one objective: to solve the problem*
<gimpression_p>	General impressions of the game: positive. [Sandra, Exit Interview_19273,19314]. *Generally I am pleased that I participated.*
<importantissues>	Perception of "Evoke" as a tool for raising awareness to important issues. [Sonja, Exit Interview_1163,1245] *As far as I can see, those are all life problems of the mankind that are discussed.*
<reallife>	Satisfaction with discussing real life problems as oppose to imaginary scenarios. [Mukasa, Exit Interview_19603,19735] *Every time I posted something I made sure it was something that was happening in real life or it was real life experience in Uganda.*
Subcategory: Obstacles to successful play of "Evoke"	The difficulties for successful play
<extrinsic_awards_n>	Discouraged to play because of the point system and competition. [Mukasa, Exit Interview_18561,18906] *What happened is people tried to fight about points and they had these really odd debates in the comments on each others' profiles.*
<gimpression_n>	General impressions of the game: negative [Nina, Exit Interview_4988,5051] *There are people that are playing games to win, no matter what.*
<leader_n>	Negative aspect of engaging in action and taking more active role. [Sandra, Exit Interview_11822,12527] *if you have so many people asking to be active and then they can*

Category	Description/Example
	have all kind of different ideas.
<senseofaccomplishment>	Lack of sense of accomplishment. "no end" of the topic, discussion, action...
	[Sandra, Exit Interview_2541,2664] *It's never ending story. You don't have a feeling that you finished something. It's like you didn't do anything, or you did something, but something else is left.*
<skills>	Lack of skills or familiarity with the online environment, or tools.
	[Sonja, Exit Interview_15504,15603] *I personally didn't participate, I am still not skillful enough, I am not skillful in making videos.*
<tasks>	The tasks and missions were too difficult to accomplish.
	[Nina, Exit Interview_1389,1506] *The tasks that were coming out were more and more difficult.*
<techissues>	No access to computers or poor Internet connection.
	[Sentwali, Exit Interview_15041,15532] *I can spend about 50 minutes, or one hour importing even a video of 2 minutes or three minutes. That was the waste of money, but I would like to put some video also. That is why I used this blog, the blog because the blog is like the message. I write some test in what, I put it in the blog, then I post it.*
<time>	Lack of time to contribute.
	[Nina, Exit Interview_1315,1387] *For me working full time it was very hard and it was very time consuming.*
3. Interaction with others	
<encouragement>	Expression of encouragement and support for action or idea
	[Mukasa, Blog_126394,126496] *D., dont give it up yet. Actually if we work at it we shall preserve it for the next generation.*
<problem>	Identifying a problem or an issue
	[Sonja, Blog_1456,1675] *However it is difficult to make a connection over the Internet or any other form*

Category	Description/Example
	of communication at a distance, when accidents occur, such as earthquakes, floods, wars. This is especially difficult in a poor countries.
<solution>	Offering a solution or suggestion to solve the problem [Sonja, Blog_5195, 5293] *we should put solar cells on the tops of buildings which would provide enough energy for household.*
<vision>	Giving a vision of the future [Mukasa, Blog_102116,103493] *Today [2020] I am still living in Uganda - a developing country. Well, I have to say that, water access has improved a lot and on average 90% of the house hold in developing countries have access to clean water sources [wells mainly].* [Sonja, Blog_4932,4982] *In the year 2020 I will use solar energy in my home.*
<emoticons>	The use of emoticons to express emotions. [Sonja, Blog_3629,3631] ☺; [Sentwali, Blog_90238,90239] ☺;
<linkexternal>	Providing a link to an external site. [Sandra, Blog_836,904] *The good example to start with is the Declaration on the Elimination of Discrimination against Women.* *http://en.wikipedia.org/wiki/Declaration_on_the_Elimination_of_Disc...*
<linkinternaltoself>	Providing a link to his/her own posting; self-referencing. [Sandra, Blog_8190,8238] *Please see my video http://www.urgentevoke.com/video/garden-in-a-sack*
Subcategory: Positive results	What happened as a result of playing the game, focus on positive aspects
<collaboration>	Planning mutual projects or expression of importance of teamwork and collaboration. [Nina, Exit Interview_8908,8984] *There were people*

Category	Description/Example
	that formed groups and I believe that they worked together.
<exchangeofideas>	Interacting with others to exchange ideas and share information. [Sentwali, Exit Interview_7626,7949] *because there are many people with different ideas, some of Evokers can make things that you didn't even expect in your life, and you didn't even know they exist.*
<support>	Interacting with others to support their idea, encourage their participation, or help with suggestions. [Sandra, Exit Interview_5530,5683*] It was for giving let's say support to others and others giving support to you. For example, if they like your post, or they have additional question.*
<taking action>	Taking a leadership role and actively engaging in the community (in actual life and "Evoke"). A potential of "Evoke" to motivate players to act [Sandra, Exit Interview_11408,11479] The game, it gives you, ask you to be active in your local environment.
Subcategory: Connecting with others	Expression of making connections with others, developing friendships and expressing empathy
<makingfriends>	Interacting with others and establishing friendship. [Sentwali, Exit Interview_16610,16780] *I have many friends. I have about, in this game I had about 356 friends, I think, but for now I communicate with about 47 friends.*
<makingfriends_n>	The purpose was not to make friends, so this was less important. [Nina, Exit Interview_6612,6634] *not to make friends.*
<personalexperience>	Drawing from a personal experience or telling a story from a personal experience. [Sonja, Exit Interview_13377,13555] *I am coming from a poorer country that has gone through war and floods… so I can understand the problem easier. And I travelled a lot, so that I can really notice the*

Category	Description/Example
	difference.
<trust>	Expression of belief that people are honest and sincere in what they write and how they represent themselves, or lack of trust in sincerity of other participants. [Sonja, Exit Interview_16855,17490] *I never, I mean, that is probably my nature, when I read someone's post, I never think that there is some kind of agenda behind it.* [Sentwali, Exit Interview_10835,11139] *I didn't like it or as someone who used something like animals and who didn't put the picture. I asked myself why he did that. Why is he afraid to put a picture? Maybe he didn't like to be known when he did the bad things, he liked to joke, to have some vision of good kind, he didn't, he was not serious.*
<understanding>	Expression of belief that people can understand each other regardless of the location they are coming from or socio-cultural background. [Sonja, Exit Interview_11751,11837] *Yes, I think yes. I think that a person can totally, totally understand another person.*
<understanding_n>	Expression of belief that people cannot understand each other unless they are personally involved in the issue. [Nenad, Exit Interview_6054,6365] *When you hear that somewhere was an earthquake, where 20000 people died, you say "Oh, what a terrible accident," but you don't really feel it. If a close relative of yours died suddenly you would say "Oh, its terrible!" and you would really feel the pain (sorrow), you know. So, if you are personally involved in the matter, meaning that if there is somebody that you know or relative or cousins, or friends, then you tend to understand the danger much more quickly and then you tend to do much more than if you are talking about some other people far away whom you don't actually know.*
Subcategory: Negative experience	The expression of negative experience in the game, conflict situations and similar
<behaviour_n>	The occurrence of inappropriate behaviour,

Category	Description/Example
	mistreatment or miscommunication. [Sentwali, Exit Interview_5957,6290] *they have made some comments about the characters, you see, we have different characters. I don't, I cannot think as someone who is in America or Europe. That showed me some kind of people who live with some ideas, there are some people who did not, who ignored the others or characters. That was something I have seen in my comments.*
<selfcensored>	Expression of self-censoring himself in order to stay in the game. [Sentwali, Exit Interview_4508,4605] *I was afraid to make interactions with some people because I didn't want to lose what I have done.*
<solvingconflict>	Finding strategies to avoid or solve conflict. [Sentwali, Exit Interview_6967,7318] *That is why I sent personal message. There I have the ability to say what I think and to ask him what he would like to say.*
4. Moral Functioning	The four-component model of moral functioning
Subcategory: Moral sensitivity	Participants' interpretation of the situation, cause-effect chains of events, and awareness of the existence of a moral problem.
<MS_connectingtoothers>	Connecting to others • Relating to others • Showing care • Being a friend [Sandra, Blog_4922,5008] *Thanks M. I find your comment refreshing as you noticed the key message of my post.*
<MS_controllingbias>	Controlling social bias • Diagnose bias • Overcome bias • Nurture tolerance [Sandra, Pre-game Interview_3101,3233] *Also, I would like to check is my prejudice about gaming as waste of time – correct or I should reconsider gaming as a phenomenon.*
<MS_interpretingsituations>	Interpreting situations

Category	Description/Example
	• Determining what is happening • Perceiving morality • Responding creatively [Nenad, Pre-game Interview_3565,4305] *Well, the idea is great. Making people around the world aware of actually what's going on in some other parts of the world, and trying to find solutions or at least give them some ideas about how the things should be handled, that is great. It makes, how do we say, people connect on a great scale, because they are worried.*
<MS_perspectivesofothers>	Taking the perspectives of others • Taking an alternative perspective • Taking a cultural perspective • Taking a justice perspective [Mukasa, Blog_60512,62194] *We need activists who will listen to the people and tell them that "we will make it through together."* *The local community health workers would do a great job in calming down the situation. Often, we have ignored the role of these community health workers. We have not given them the skills they need to give the people "psychological first aid." We have forgotten that they are the very first people to respond to such pandemics and that they are trusted in their communities.*
<MS_respondingtodiversity>	Responding to diversity • Working with group and individual differences • Perceiving diversity • Becoming multicultural [Sentwali, Pre-game Interview_] *I have friends around the world. I have the friends who share the knowledge. They share their vision. And I know that. They are in advance. They are in advance of us. So, I have to take, I have to be in touch, I have to keep in touch with them.*
<MS_understandingemotions>	Understanding emotional expressions • Identifying and express emotions • Fine tuning your emotions • Managing anger and aggression [Nina, Blog_4572,4645] *My heart is broken because so*

Category	Description/Example
	many villages, including mine, are "dying."
Subcategory: Moral judgment	Participants' judgment which action would be most justifiable in a moral sense.
<MJ_coping>	Coping • Applying positive reasoning • Managing disappointment and failure • Developing resilience [Sentwali, Exit Interview_4508,4725] *I was afraid to make interactions with some people because I didn't want to lose what I have done. Many agents have been stopped. I would search to interact with someone because I was afraid to lose work, to be stopped.*
<MJ_reasoningethically>	Reasoning Ethically • Judging perspectives • Reason about standards and ideals • Reason about actions and outcomes [Sandra, Blog_266,730] *I consider the small scale programs and local initiatives equally important for the women empowerment. Anyhow, in a long run I believe that systemic measures have more potential due to the nature of the problem. The position of women in a society today is the result of an "accumulated disadvantage." The term is something I coined when I thought about women in the past, about women's physical strengths in comparison to men, about women's role in childbearing etc..*
<MJ_reasoninggenrally>	Reasoning generally • Reasoning objectively • Using sound reasoning • Avoiding reasoning pitfalls [Nenad, Pre-game Interview_266,1120] *I mean this game is more difficult for me than any game I played so far. Because I don't know why, maybe it is the web design, or other players, maybe I am not familiar with blogs and this and that. Since I don't really use blogs, as I said the design is unfamiliar to me, and it is not much helpful. And it is difficult for me to find my way around.*
<MJ_reflectiongonprocessandoutcomes>	Reflecting on process and outcome • Reasoning about means and ends • Making right choices

Category	Description/Example
	• Redesigning the process [Nina, Post0game Interview_69,492] *To me it was very hard, because if you wanted to be on the top of the game, it was very time consuming, because you were playing against people who were having more time and more experience in playing the game and even though they receive 15 emails a day they can respond in 10 minutes. So, for me, that was the hardest.* *I was curious as the missions were coming out, but how the game was designed, it was hard to follow up..*
<MJ_understandingconsequences>	Understanding Consequences • Choose your environments • Predicting consequences • Responding to consequences [Sonja, Pre-game Interview_8951,9265] *But I still believe that too much time spent in front of the computer playing games can alienate people from one another.*
<MJ_understandingproblems>	Understanding ethical problems • Gathering information • Categorizing problems • Analyzing ethical problems [Sonja, Exit Interview_8575,9053] *Posting anything to collect points, no matter what. Maybe, I don't know, if there is some kind of a jury, to potentially overlook, if that would be possible at all, or right to do. I don't know, a person can, how many discussion postings can someone write in a day, how much can a person…? It would be very hard to measure. Some people would probably be disadvantaged, or maybe not, or… It could be counterproductive, of course. Maybe the quality of the responses would decrease..*
Subcategory: Moral motivation	Participants' degree of commitment to taking the moral course of action, valuing moral values over other values, and taking personal responsibility for moral outcomes.
<MM_actingresponsibly>	Acting responsibly • Meeting obligations • Being a good citizen

Category	Description/Example
	• Be a global citizen [Sentwali, Exit Interveiw_3351,3849] *And I would also like to know how other countries with the some problems like to solve the… what can I say… just to deal with a problem related to society or community. There is a reason behind everything; I did not play only for joking, instead to learn and to win.*
<MM_communitymember>	Being a community member • Cooperating • Sharing resources • Cultivating wisdom [Mukasa, Comments_15158,15411] *Maybe we could work on a project together - Its basically aimed at designing/ installing data repositories for the youth and communities to access information more easily. Its some thing I would really love to do. But could use some ideas here and there*
<MM_developingidentity>	Developing ethical identity and integrity • Choosing good values • Building your identity • Reaching for your potential [Sentwali, Pre-game Interview_9617,9792] *I am now open and I hope to determine this game/ course with enough capacity for doing whatever good I want and dealing with any situation.*
<MM_respectingothers>	Respecting others • Being civil and courteous • Being non-violent • Showing reverence [Sentwali, Blog_110993,111049] *I appreciate you very much! You encourage me in anyway!!!.*
<MM_valuingtraditions>	Valuing traditions and institutions • Identifying and valuing traditions • Understanding social structures • Practicing democracy [Sandra, Pre-game Interview_1648,2058] *In my culture and in my family, gaming is always related to fun and sort of waste of time. So, my mother would not allow us to go to places where is possible to play video games. Before computers we had small shops with*

Category	Description/Example
	video games and playing football or playing with machines, so we were not allowed to go there because this was considered as waste of time. So I was brought up not to play those games.
Subcategory: Moral action	Participants' persistence in a moral task, and implementation of subroutines that serve a moral goal.
<MA_persevering>	Persevering • Being steadfast • Overcoming obstacles • Building competence [Sentwali, Exit Interview_1381,1934] *I worked during the day and I played this game at the night because I had many problems, you see, I had problem of my language. I don't know, I am not strong in English. I spend my time with develop a topic I spent longtime for one topic and to collect some words, too many such. You see, and I and I have not, I have not made many topics in (?). I did not post many blogs for my own topics. That is why I have done the search and I have found spend many times to the Internet and the readings.*
<MA_planningandimprementing>	Planning to implement decisions • Thinking strategically • Implementing successfully • Determining resource use [Nina, Blog_3499,4256] *Outcome of the discussion was to start a project: Budalija for the future Project team has been elected and the strategy to raise funds developed.* *Aim of the project was to reform Budalija to become first self sufficient village in this part of the world, being able to self source sustainable energy, quality water and food.*
<MA_resolvingconflicts>	Resolving conflicts and problems • Solving interpersonal problems • Negotiating • Making amends [Sentwali, Exit Interview_6474,6689] *I explained more, but not in my comment, not in where they made the comment. I have written the message because we*

Category	Description/Example
	had the windows, we could, we had, we could send personal message. That is how I discussed with them.
<MA_takinginitiativeasleader>	Taking initiative as a leader • Being a leader • Taking initiative for and with others • Mentoring others [Mukasa, Images/Video_1459,1586] *As we mark the World Water Day, I wanted to share with you and also to bring to your attention. We need to help our communities.*
<MAworkinghard>	Working hard • Setting reachable goals • Managing time • Taking charge of your life [Nina, Exit Interview_3335,3768] *I chose a topic that was close to my heart. I believed that it was very relevant to me and my thoughts and beliefs. And all other activities and all other missions that came after that were related to this topic, so, if I had enough time and finish all ten missions, and time wise, was able to participate in all activities, I may be able to complete to get to write or start a project (that was the "prize" for the best 10!).*
5. The use of media	The selection of media used to convey a message, tell a story
<alternative>	Use of media as a choice, alternative representation. [Mukasa, Exit Interview_11331,11989] *the good thing about using the photos and videos, digital media is you tell your stories from different dimensions.*
<mediaimproveunderstanding>	Use of media to improve understanding, demonstrate a point. [Sonja, Exit Interview_14212,14594] *Especially because there was an opportunity to include videos, for example through YouTube, so you could get some information, I mean, to describe better. Maybe exactly with a photograph, or video, you could rally say that you can help in a certain way. A video, a photograph gives you that opportunity to exactly… yes*
<media_n>	Non-effective use of media

Category	Description/Example
	[Sandra, Exit Intervew_10991,11160] *I didn't want to overload my profile, my page with videos, particularly not with songs that anybody can find on a YouTube or somewhere else. It has no educational value.*
6. Miscellaneous	Uncategorized Codes
<representationofself>	Comments on how a participant presents him/herself. [Sonja, Pre-game Interview_2936,3348] *I like to use my real name because I like my name. And I think there is no reason to me to use pseudonym.*
<proverb>	Using a proverb or a saying to express a general truth based on a common sense. [Mukasa, Blog_54682,54737*] You can dance on the tunes of a drum of your own child!*
<quoteref>	Citation with a referenced source. [Mukasa, Blog_79043,79185] *Hundreds of thousands of women, nearly all of them in developing countries, die in childbirth every year, but this does not have to be the case, says Secretary-General Ban Ki-moon.*
<quoteref_n>	Citation with non-referenced source. [Sentwali, Blog_82016,82127] *"I believe if you're poor, it's because God wants you to be poor and if you're rich, God wants you to be rich."*
<location>	Identifying a geographic location, or area. [Sentwali, Blog_12141,12146] *Here in Rwanda…* [Mukasa, Blog_34129,34153] *Masaka District of Uganda.* [Sonja, Blog_7683,7692] *In my country…*
<improvement>	Suggestions for improving the game in the future, or what could have made the game even better. [Mukasa, Exit Interview_23468,23798] *I think the game lacked support from institutions and other stakeholders who I think needed to give it support and I… The other thing is just important I think it was a good initiative by the World Bank and I think it needed to target more of the youth who might, who need to be more dynamic and flexible in solving these problems.*

Category	Description/Example
<research>	Using research to support one's argument or idea, not relying only on personal experience. [Mukasa, Exit Interview_13726,13803] *in a few posts, where for example, I had to do a little bit of a research.*
7. Metadata	
<md_blogtitle>	Title of the blog message posted by the research subject. [Sandra, Blog_2,14] *Equality Laws*
<md_blogauthor>	The author of the blog, the research subject who posted a message in his/her blog. [Sandra, Blog_17,45] *Posted by Sandra*
<md_blogdate>	Date when a research subject posted a message in his/her blog. [Sandra, Blog_46,74] *on April 11, 2010 at 11:10am*
<md_commentauthor>	The author of the comment to the research subject. [Sandra, Blog_4712,4735] *Comment by M. W.*
<md_commentdate>	Date a comment is posted to the research subject's blog. [Sandra, Blog_3596,3611] *on March 19, 2010 at 7:21 pm*
<md_commentblog authorresponse>	The research subject's response to a comment on his/her blog message. [Sandra, Blog_4861,4891] *Comment by Sandra*
<insertedimage>	Location where an image is inserted in the text. [Sandra, Blog_7048,7052] *image*
<md_blogtitleother>	Title of the blog message posted by a game participant, not the research subject. [Nina, Comments_2417,2440] *Outside the comfort zone (posted by U.K.)*
<md_blogauthorother>	The author of the blog, a participant who is not the research subject. [Nina, Comments_27,57] *Posted by R.R.A.*

Category	Description/Example
<md_blogdateother>	Date when a game participant, not the research subject, posted a message in his/her blog. [Nina, Comments_27,57] *on April 2, 2010 at 4:30am*
<md_commentauthorother>	The author of the comment to another game participant, not the research subject. [Nina, Comments_6047,6065] *Comment by J.Z.*
<md_commentdateother>	Date a comment is posted to another game participant, not the research subject. [Nina, Comments_6067,6093] *on April 1, 2010 at 10:57pm*
<md_subjectcommentauthor>	The research subject's comment to another game participant's blog posting. [Nina, Comments_723,740] *Comment by Nina*
<md_imagelink>	A link to an uploaded image. [Nina, Image/Video_1703,1840] *http://api.ning.com/files/gAewWiMh9fCtY-Fvy6*Y2tcmH88ZzU2a4K14Ew8jkVe4Oan8ca-dSGIA3CAatiaRsxF-MQngf60MZvOEF5e5cTp5pTz3FWhE/EASTEREGGS.jpg*

Appendix I: Full Code Frequency Reports

I.1 Pre-game interview

Table 22 Pre-game interview (code frequency)

Code	Total	Minimum	Maximum	Mean	St. Deviation
MJ_reasoningethically	34	0	34	5.667	13.88
gametype	27	0	27	4.5	11.023
exchangeofideas	25	0	25	4.167	10.206
MJ_reasoninggenerally	25	0	25	4.167	10.206
learningexperience	20	0	20	3.333	8.165
socialaction	19	0	19	3.167	7.757
gameaspect_n	17	0	17	2.833	6.94
MS_interpretingsituations	16	0	16	2.667	6.532
MM_developingidentity	15	0	15	2.5	6.124
representation_self	13	0	13	2.167	5.307
q_assumptions	12	0	12	2	4.899
computergames	10	0	10	1.667	4.082
MJ_reflectonprocessandoutcomes	8	0	8	1.333	3.266
MS_respondingtodiversity	8	0	8	1.333	3.266
participation	8	0	8	1.333	3.266
competition	6	0	6	1	2.449
MJ_understandingconsequences	6	0	6	1	2.449
MS_controllingbias	6	0	6	1	2.449
playingwithothers	6	0	6	1	2.449
collaboration	5	0	5	0.833	2.041
educational	5	0	5	0.833	2.041
forchildren	5	0	5	0.833	2.041
MA_takinginitiativeasaleader	5	0	5	0.833	2.041
MS_perspectivesofothers	5	0	5	0.833	2.041
fun	4	0	4	0.667	1.633

Code	Total	Minimum	Maximum	Mean	St. Deviation
gameaspect_p	4	0	4	0.667	1.633
MA_workinghard	4	0	4	0.667	1.633
MM_actingresponsibly	4	0	4	0.667	1.633
MM_communitymember	4	0	4	0.667	1.633
MA_persevering	3	0	3	0.5	1.225
n_computergames	3	0	3	0.5	1.225
MJ_understandingproblems	2	0	2	0.333	0.816
morethanagame	2	0	2	0.333	0.816
MS_connectingtoothers	2	0	2	0.333	0.816
MA_planningandimplementing	1	0	1	0.167	0.408
MM_respectingothers	1	0	1	0.167	0.408
MM_valuingtraditions	1	0	1	0.167	0.408

I.2 Blog postings

Table 23 Blog postings (code frequency)

Code	Total	Minimum	Maximum	Mean	St. Deviation
md_commentdatebyother	267	4	157	53.4	67.419
md_commentauthor	253	4	157	50.6	65.949
location	126	4	92	25.2	37.573
md_blogauthor	125	5	51	25	18.908
md_blogtitle	125	5	51	25	18.908
md_blogdate	124	5	50	24.8	18.566
solution	104	3	85	20.8	35.912
MA_takinginitiativeasaleader	87	2	51	17.4	20.095
problem	75	1	65	15	27.991
MS_connectingtoothers	70	3	31	14	14.629
MJ_reasoninggenerally	68	4	29	13.6	11.929
md_commentblogauthorresponse	67	4	38	13.4	14.859
MJ_reasoningethically	62	4	30	12.4	10.691
md_commentdate	55	3	40	11	16.217
MM_communitymember	51	2	25	10.2	9.011
MA_planningandimplementation	36	0	26	7.2	10.71
MS_interpretingsituations	36	0	26	7.2	10.756
linkexternal	34	0	19	6.8	7.596
MJ_reflectonprocessandoutcomes	33	1	19	6.6	7.668
quoteref_n	30	0	29	6	12.865
insertedimage	26	0	13	5.2	6.686
vision	23	3	9	4.6	2.608
MM_developingidentity	22	1	10	4.4	4.278
emoticon	21	0	19	4.2	8.289
quoteref	12	0	10	2.4	4.278

encouragement	10	0	6	2	2.828
MM_respecting others	10	0	7	2	3.082
linkinternaltoself	9	0	5	1.8	2.49
MJ_understandingconsequences	9	1	3	1.8	1.095
MS_perspecivesofothers	9	0	6	1.8	2.49
proverb	6	0	4	1.2	1.643
MJ_understandingproblems	5	0	2	1	0.707
MA_resolvingconflicts	3	0	3	0.6	1.342
MM_valuingtraditions	3	0	1	0.6	0.548
MS_respondingtodiversity	2	0	1	0.4	0.548
miscommunication	1	0	2	0.2	0.447
MS_understandingemotions	1	0	1	0.2	0.447

I. 3 Comments

Table 24 Comments (code frequency)

Code	Total	Minimum	Maximum	Mean	St. Deviation
md_commentdateother	156	1	83	31.2	31.164
md_subjectcommentauthor	112	1	83	22.4	34.246
md_blogauthorother	109	1	82	21.8	33.922
md_blogtitleother	109	1	82	21.8	33.922
md_blogdateother	107	1	81	21.4	33.59
MM_respectingothers	56	1	47	11.2	20.13
MS_connectingtoothers	46	0	26	9.2	10.45
md_commentauthorother	45	0	25	9	12.45
MS_interpretingsituations	15	0	7	3	2.915
emoticon	12	0	11	2.4	4.827
MJ_reasoningethically	11	0	7	2.2	2.775
requestfurtherinfo	9	0	8	1.8	3.493
MM_communitymember	6	0	4	1.2	1.643
MA_takinginitiativeasaleader	5	0	4	1	1.732
MJ_reasoninggenerally	5	0	3	1	1.414
linkexternal	4	0	2	0.8	1.095
MM_developingidentity	1	0	1	0.2	0.447
proverb	1	0	1	0.2	0.447

I.4 Image and video postings

Table 25 Image and video postings (code frequency)

Code	Total	Minimum	Maximum	Mean	St. Deviation
md_imagelink	26	2	16	8.667	7.024
md_blogtitle	20	1	11	6.667	5.132
md_commentdate	20	0	10	6.667	5.774
md_blogdate	19	2	10	6.333	4.041
MS_interpretingsituations	17	2	11	5.667	4.726
md_blogauthor	14	2	8	4.667	3.055
md_commentauthor	14	0	7	4.667	4.041
MA_takinginitiativeasaleader	6	0	5	2	2.646
md_commentblogauthorresponse	5	0	3	1.667	1.528
MS_connectingtoothers	5	0	3	1.667	1.528
linkexternal	3	0	2	1	1
MJ_reasoningethically	3	0	3	1	1.732
emoticon	1	0	1	0.333	0.577
MJ_reasoninggenerally	1	0	1	0.333	0.577
MM_communitymember	1	0	1	0.333	0.577

I.5 Exit interview

Table 26 Exit interview (code frequency)

Code	Total	Minimum	Maximum	Mean	St. Deviation
MJ_reasoningethically	44	4	12	7.333	3.266
educational	34	3	8	5.667	1.862
MJ_reasoninggenerally	32	3	8	5.333	1.862
MJ_reflectingonprocessandoutcomes	25	2	6	4.167	1.722
time	24	2	6	4	1.414
MM_developingidentity	23	2	7	3.833	1.722
takingaction	21	0	8	3.5	2.881
exchangeofideas	19	1	6	3.167	1.722
support	19	0	10	3.167	3.545
extrinsic_awards	17	0	7	2.833	2.714
extrinsic_awards_n	15	0	5	2.5	1.871
gimpression_p	15	1	6	2.5	1.871
intrinsic	15	0	5	2.5	1.761
personal_experience	15	0	7	2.5	2.429
reallife	15	0	6	2.5	2.168
research	15	0	6	2.5	2.258
importantissues	14	0	6	2.333	2.422
MS_respondingtodiversity	14	0	4	2.333	1.506
representationofself	13	0	5	2.167	1.722
MM_communitymember	11	1	3	1.833	0.753
MS_connectingtoothers	10	0	3	1.667	1.033
understanding	10	1	2	1.667	0.516
MS_interpretingsituations	9	0	4	1.5	1.643
trust	9	0	3	1.5	1.049
gimpression_n	8	0	4	1.333	1.633

Code	Total	Minimum	Maximum	Mean	St. Deviation
MA_takinginitiativeasaleader	8	0	4	1.333	1.506
mediaimproveunderstanding	8	0	4	1.333	1.506
MJ_understandingconsequences	8	0	2	1.333	0.816
experience_c_games	7	0	2	1.167	0.753
selfcensored	7	0	7	1.167	2.858
skills	7	0	3	1.167	1.169
alternative	6	0	3	1	1.095
improvement	6	0	2	1	0.894
MA_resolvingconflicts	6	0	5	1	2
MM_actingresponsibly	6	0	2	1	1.095
notgame	6	0	3	1	1.265
behaviour_n	5	0	3	0.833	1.169
forum	5	0	3	0.833	1.329
MA_persevering	5	0	4	0.833	1.602
media_n	5	0	3	0.833	1.329
MM_respectingothers	5	0	2	0.833	0.983
morethanagame	5	0	3	0.833	1.329
collaboration	4	0	2	0.667	0.816
findingsolutions	4	0	3	0.667	1.211
MA_workinghard	4	0	2	0.667	0.816
makingfriends	4	0	3	0.667	1.211
seriouswork	4	0	2	0.667	0.816
solvingconflict	4	0	4	0.667	1.633
tasks	4	0	2	0.667	1.033
techissues	3	0	2	0.5	0.837
undefined	3	0	2	0.5	0.837
MA_planningandimplementing	2	0	2	0.333	0.816
MJ_coping	2	0	1	0.333	0.516

Code	Total	Minimum	Maximum	Mean	St. Deviation
MS_perspectivesofothers	2	0	2	0.333	0.816
senseofaccomplishment	2	0	2	0.333	0.816
understanding_n	2	0	2	0.333	0.816
leader_n	1	0	1	0.167	0.408
makingfriends_n	1	0	1	0.167	0.408
MJ_understandingproblems	1	0	1	0.167	0.408