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# Asking the players: a mental models approach to how long-term players of a massively multiplayer online game perceive the risks associated with gaming

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**Asking the players: A mental models approach to how long-term players of a  
massively multiplayer online game perceive the risks associated with gaming**

by

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A thesis submitted to the graduate faculty  
in partial fulfillment of the requirements for the degree of  
**MASTER OF SCIENCE**

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Program of Study Committee:  
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Ames, Iowa

2014

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## **DEDICATION**

To my mother, who took me to uncountable bookstores and on endless walks; to my father who worried and supported me through those and many other obsessions.

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## **NOMENCLATURE**

<b>EA</b>	<b>Electronic Arts</b>
<b>ESRB</b>	<b>Entertainment Software Rating Board</b>
<b>LoU</b>	<b>Lord of Ultima</b>
<b>MMO</b>	<b>Massively Multiplayer Online (game)</b>
<b>MMORPG</b>	<b>Massively Multiplayer Online Role Playing Game</b>
<b>PIU</b>	<b>Problematic Internet Use</b>



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## ABSTRACT

Video games represent a fast-growing medium and researchers are exploring their social influence, especially regarding the risks associated with gaming. Most studies have focused on an expert's view, rather than exploring how users themselves perceive and mitigate such risks. This qualitative study fills this gap by conducting in-depth interviews with 18 players of the browser based Massively Multi-player Online (MMO) strategy game, Lord of Ultima, in order to generate a mental model of how gamers see the risks associated with playing a MMO game. Results suggest that the primary risks in the minds of the gamers are loss of opportunity and time due to pathological gaming, cyber bullying and sexual harassment, and risks due to sharing financial information or due to malicious software. The study explores the motivations and perceived benefits derived by long-term players of the game, and explores the role of trust, group effects and player perceptions of risk in players' risk mitigation strategies. Some behaviors and consequences that experts would consider a risk are considered a benefit by gamers; this has implications for risk communication strategies around gaming. It also points to the importance of considering the user model of risks. Additionally, much of the literature conflates two genres of video game that likely exhibit unique effects. Many of the risks identified in MMO Role Playing Games (MMORPGs) were not considered relevant by long-term players of this game, since participants attributed those risks as being associated with the use and manipulation of a three-dimensional avatar in MMORPGs. Thus, this study extends the focus of inquiry away from the usual MMORPG genre to explore the overlooked browser MMO genre of video games.

## CHAPTER 1. INTRODUCTION

As a fairly new media platform, video games are experiencing rapid growth. According to the Entertainment Software Association (2013), the video game industry brought in over \$16 billion annually in sales between 2009 and 2011 while the total consumers spent in 2012 was \$20.77 billion (with only \$14.8 billion in content). PricewaterhouseCoopers, a consulting firm, pegged the US domestic video game market at \$56 billion in 2010. The sales of Grand Theft Auto V, released in September 2013, broke six world records, including fastest entertainment property to gross \$1 billion and highest revenue generated by an entertainment product in 24 hours (Lynch, 2013). This beat out a 2010 game, Call of Duty: Black Ops which was then the most successful entertainment launch ever, selling over \$1 billion in the first month alone (Cross, 2011). Indeed, in 2009, people spent more money on videogames than movies (theater and renting) in Britain (Chatfield, 2009; Wallop, 2009).

Not only are video games profitable, but they also have incredible reach. PEW's Internet and American Life Project states that 97% of teenagers and 53% of adults play video games. About one in five adults (21%) play everyday or almost everyday, another 28% play a few times a week. People are also putting in more time in their games; according to the Entertainment Software Rating Board, the average US gamer spent 8 hours a week playing video games in 2010.

Media scholars have followed suit: eleven\* academic print journals specializing in gaming have been launched since 2000, with many more published only online.

Mainstream journals in psychology, computer science and communication have also taken notice, publishing papers and reviews on the subject, including broad scope journals like *Nature Reviews Neuroscience* (see e.g. Bavelier et al., 2011) and *Review of General Psychology* (see e.g. Barnett & Coulson, 2010).

One area in particular that has attracted video game scholars is in the potential risks associated with playing video games. In particular, many scholars have focused on the risks associated with a genre of video game, the massively multiplayer online (MMO) games. PC Gamer estimated 400 million players of MMO games across the globe (Petitte, 2012).

MMO games are played connected to a game server via the Internet. The virtual “world” in which the game takes place is a shared environment between thousands of players. Players can impact other players within limits (e.g. if they are nearby on the game map) by virtue of the shared environment. This is different from most first person shooter or console games where players generally play as individuals or must sign up to share the environment with specific players. Because of their community-bounded nature, MMOs lend themselves to be both competitive and cooperative. The target of the game is

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\* ACM Computers in Entertainment (est. 2003), Digital Creativity (since 1997, once was Intelligent Tutoring Media, since 1990), Entertainment Computing (Elsevier, est. 2009), *Homo Ludens* (2009, online only), *Eludamos: Journal for Computer Game Culture* (2007), *Games and Culture: A Journal of Interactive Media* (2006), *Game Studies: The International Journal of Computer Game Research* (2001), *Hindawi International Journal of Computer Games Technology* (2008), *Journal of Gaming and Virtual Worlds* (2008), *International Journal of Roleplaying*, *Journal of Virtual Reality and Broadcasting* (2004), *Journal of Virtual Worlds Research* (2008), *SAGE Simulation and Gaming* (1970), *The Computer Games Journal* (2011), *International Journal of Gaming and Computer Mediated Simulations* (2009).

often establishing dominance: either economic, military, or some combination of both. Part of the game almost always involves the players pitting themselves against the game (typically called Player vs. Environment), while another optional component is Player vs. Player. The latter may be a competition or a race based on tracked metrics, like empire size, profits, growth rates, or may be based on a military objective, such as ‘capture the flag’ or ‘last man standing’. Not all games have a definite end points, but many have a story or quest line that leads to a point where the game feels complete and the player has “beat the game”.

There are sub-genres of video games within the MMO genre; the term MMO Role Playing Game (MMORPG) is the term used to describe a specific kind of MMO game where players have 3D avatars that they move through virtual worlds and space. Many studies have looked at the risks of extreme involvement in MMORPGs. For instance, in 2011, Sanders and his colleagues conducted a meta-analysis of a number of different papers to arrive at a list of “emergent risks” faced by individuals that play MMORPGs, including addiction, privacy risks, and threats to online identity and money. While research has explored the potential risks and effects of video games, what is missing is an understanding of how the players themselves perceive and navigate these risks.

Grounded theory gives researchers “systematic yet flexible guidelines for collecting and analyzing qualitative data to construct theories ‘grounded’ in the data themselves” (Charmaz, 2006, p. 2). As a framework, it allows researchers to address those questions that must be addressed qualitatively (such as, “*how* do people conceptualize risk?”) in an ordered manner. Within its framework, the researcher is expected to sort, separate, distill and synthesize explanations from the data rather than

impose theoretical constructs *a priori*, providing a way to grasp the mass of information that a qualitative study can bring. This handle on the concepts that arise from the study is essential if one is to investigate the complex ways people think, given a starting point of incomplete prior knowledge.

How people calibrate their ideas of the different dimensions of risk, and make decisions (even if it is not conscious) about the acceptability of risks has implications for wider applications relevant to the risks of video games. This knowledge can enable targeted and appropriate responses to risks. For example, the Chinese government instituted a disincentive for players who stay in game for a long time (“China imposes...”, 2005) in order to discourage addiction, but the degree of alignment between player and non-player perceptions of risk will largely determine its effectiveness. Furthermore, it is not so much the quantity as the quality of game play that is addictive (Caplan, Williams & Yee, 2005), a variable that is difficult to assess without player input. Thus, a user centric model of risks could reveal new avenues for research, new approaches for dealing with risks, allow us to match our risk management solutions with the reality of what gamers experience and perhaps learn from gamers’ existing coping mechanisms to deal with risks.

In addition, many studies have focused on the subcategory of MMORPGs at the expense of the wider range of MMO games. Vanhoutpa (2013) identified long term browser based MMO games as an emerging genre that may possibly represent the future of gaming in his analysis of the business models of these games. In a 2009 paper, Kimmt, Schmid & Orthmann defined browser games as “persistent game worlds that can be used with client software and monetary costs with a web browser” (p. 231). They also asserted

that browser based MMOs are understudied despite having a large, regular and consistent user base. Browser based MMOs are popular; they reach a wider audience since they are cheaper, require less in terms of computational power, and are more accessible than MMORPGs. Although player numbers for browser based MMOs are hard to come by, anecdotal evidence indicates that individual browser based MMO games are doing very well. For example, Electronic Arts (2012) announced that the MMO game titled *Command and Conquer Tiberium Alliances* garnered a million players.

Therefore, the purpose of this study is two-fold: first to extend the literature on risks associated with video games to include a player-centered understanding of these risks and second, to broaden the context from the more commonly studied MMORPG genre to the potentially more influential browser MMO genre.

## CHAPTER 2. LITERATURE REVIEW

### Video Games

Video games represent entertainment media where the consumer has some form of interaction with the content. Video games are by their nature electronic, but beyond that are not confined to any specific device, as they are commonly played on computers, mobile phones and tablets, dedicated hand held gaming devices, or home gaming consoles that plug into a TV or a monitor to play. Some video games are designed to be played by a single player, often against challenges programmed into the game itself, while other games are designed as multi-player, where multiple players either team up to counter in-game challenges or to challenge each other within the rules of the game.

Many genres within video games have emerged. Puzzle games are multi-platform, single-player games challenging players to solve mathematical or pattern based puzzles. First-person shooter games require the player to fight their way through a number of levels. Recently, the console Wii has introduced fitness games, where players play classic games like tennis against their friends or the system, through the Internet.

Strategy games can be both single- and multi-player: single player strategy games require the players to plan the most efficient route to complete a challenge presented in the game, while multi-player strategy games are now mainly played through massively multiplayer online (MMO) gaming portals on the Internet, where thousands of players (strangers to each other) play cooperatively and competitively. Such multiplayer games often enter the role playing game genre (RPG), where players develop their characters by building specific traits for their characters. While the oldest RPGs were played with pen



and paper (e.g. Dungeons and Dragons), these games are also now played extensively over the Internet as massively multiplayer online games.

Another recent multiplayer genre is that of “social games”. These games are usually played with people the gamer knows, and rarely require any communication beyond sending automated requests through the game. The games often insert occasional barriers to play that can be overcome by paying real money, or using social networks, such as Facebook (or an email contact list) as a “currency” to progress.

In contrast, MMO games are usually played with strangers yet require active interaction and communication. The most distinctive factor of an MMO is its scale: thousands of people play on a “server” of the game, interacting with hundreds of other players over the Internet. The games require cooperation or competition between individuals toward common goals, and this results in players communicating significantly in the game. The requirement for good communication to succeed in the game have resulted in the development and growth of voice over Internet protocol software companies, targeted at gamers, for example, TeamSpeak (Bray, 2003), RaidCall, Ventrilo, and Mumble, that allow players to communicate with team members during gameplay. This enables them to react cohesively as a team during actual gameplay events, as well engage in tactical and strategic planning beforehand.

Not only are there a wide variety of video games on the market, they are also extensively used. In 2013, the Entertainment Software Association released statistics about the video game industry in the United States. Of the 58% of Americans who play video games, 45% were women, and over two-thirds were adults with an average age of 30. According to the Entertainment Software Rating Board, the average US gamer in

2010 played 8 hours a day. Gaming is a shared practice in some families with half the parents played video games with their children at least weekly.

The industry itself has grown significantly over the past few years. In the US alone, video games sold 188 million units in 2012. In Britain, video games overtook books and movies as the largest entertainment industry. PricewaterCoopers, a consulting firm, predicts that video game sales will rise to \$82 billion worldwide in 2015 (from \$56 billion in 2010).

### **The Risks of Gaming**

With the increase of video game consumption across many demographic segments, communication scholars are increasingly examining video games and the role they play on individuals and within society. In a 2011 article, the journal *Nature Reviews Neuroscience* invited prominent researchers to comment on common questions on the impact of video games on the brain (Bavelier et al., 2011). Similarly, researchers have looked at the formation of networks and interactions between players (see e.g. Putzke, Fischbach, Schoder & Gloor, 2010) to draw conclusions about the similarity and differences between interpersonal relationships and a gaming community.

One particular area within video game literature focuses on the risks associated with video game use. While many risks are suggested, conceptual and methodological differences raise questions as to the true nature of the risks themselves. For instance, one risk often explored with regard to video games is that of addiction.

Addiction is a vast field of research. As demonstrated by the themed collection in one issue of *Current Opinion in Neurobiology*, the research of addiction is complex and

considers not only molecular, genetic and epigenetic basis for addiction in humans and animals but also begins to examine the shared psychological and neural core between compulsive behaviors and drug addictions (Everitt & Heberlein, 2013).

Spada (2014) recently reviewed the emergence and evolution of problematic Internet use (PIU), a term used as it is not listed as an ‘addiction’ by the American Medical Association. They acknowledge it is a heterogeneous construct, and identify some personality traits that predispose a user to develop PIU, as well as treatment options. They identify the need to look into Suler’s (2004) results that indicate PIU results in increased risk taking and online disinhibition effects. While PIU is rapidly becoming well studied, video games are lagging behind.

The American Medical Association doesn’t currently recognize video-game or Internet addiction as a psychiatric disorder; however Demetrovics and Griffiths (2012) listed problematic use of computer, video and online games as of interest as being possibly part of the diverse groups of behavioral addictions in their 2012 editorial in the first issue of the *Journal of Behavioral Addiction*. The extent of addiction to video and online games remains unclear; Griffiths (2009) demarcated ‘excessive’ and ‘problematic’ use: “the difference between healthy excessive enthusiasms and addictions are the healthy excessive enthusiasms add to a person’s life whereas addictions take away from it.” (Griffiths 2009, p. 2). This is in line with Bergmark et al., (2011), who indicated that many studies reporting “alarming prevalent rates of extensive Internet involvement/addiction [...] are likely to be huge overestimations of what proportions of Internet users that might [be] considered to exhibit problematic use” (p. 4498). From a review of empirical literature on gaming addiction among children and adolescents, Kuss

and Griffiths (2012) concluded that gaming addiction does exist, and time invested in preparation and in gaming increases with addition. A comparable comprehensive review for gaming addictions among adults does not yet exist.

Yee (2002) suggests that excessive users of games were driven by a uses and gratification type motivation system, and paralleled Dodes' (2002) theory, where addiction is not merely physical but psychological: rather than the cigarette being addictive, it is the *person* that sees the object who is addictive. Thus, the motivations of gamers (and the question of what benefits they derive from the game) are as important as intrinsic qualities of the game that made it 'addictive'. Majikian (2012) describes the social construction of Internet addicts and addiction itself and during this critical analysis compares the Internet and opium while suggesting that disease risk (perhaps like all risks) are constructs.

Another risk often examined with regards to video games is that of aggression. Several studies explored the impact of violent video games on aggression and generally agreed that playing violent video games increases aggression in children and young adults (Anderson & Bushman, 2001; Dill & Dill, 1999; Griffiths, 1999). However, Griffiths (1999) also pointed out that the literature that 'showed' violent behavior in children was based on a single method (observation of children in free play), which was limited in the kinds of implications one can draw from it. Likewise, most aggression studies used adolescents playing a game from the first person shooter genre, which may not be applicable to different genres of video games.

The Massively Multiplayer Online (MMO) genre has attracted its own body of literature relevant to risk. MMOs themselves can be broken into subgenres, but they all

share a few common characteristics: players link to their specific game servers, players have the ability to interact with other people, often strangers, who are linked to the same server, and the game itself is robust on a massive scale. The typical MMO server handles thousands of users at a time, and most MMOs run several dozen servers at a time.

MMOs have attracted a great deal of attention, not only because of their large number of players, but also because the typical MMO player is different from the stereotypical gamer. The typical MMO player is an employed adult with a family who still manages to play, sometimes up to 22 hours a week (Yee, 2006). The effect of MMOs is also different than other gaming genres. Smyth (2007) assigned non-players to play four different types of games: arcade, console, and a solo computer first person shooter and massively multiplayer online game. After one month of playing, MMO players had spent more hours playing, exhibited worse health, worse sleep quality, greater interference with “real life”, greater interest and enjoyment in play, and greater acquisition of new friendships, when compared to the other three.

Unique to the extreme engagement intrinsic to MMOs, researchers have also explored cybersecurity risks associated with this genre, including the dissemination of personal information, loss of privacy and identity theft. Young (2005) investigated the mechanisms teenagers developed to cope with the risks on the Internet associated with dissemination of personal information, and found that they share incomplete or false information online. Listed as a threat from gaming by the US-CERT document in 2008 (Hayes, 2006), identity theft has become a more vocal concern following the hacking of the PlayStation servers in 2011; Sony announced that they would take measures against identity theft and began providing protection against it (Hachman, 2011). Beyond passive

cyber security risks, MMOs potentially involve trading scams, where progress in the game or fully developed accounts are sold for real world money to players who have not themselves earned that progress (Bardzell et al, 2007; Meyer 2011).

The majority of studies that explore the risks associated with MMOs focus on one sub-genre, the Massively Multiplayer Online Role Playing Game (MMORPG). MMORPGs incorporate three-dimensional graphics where players create “avatars” that they move through the game space. Players invest time in developing these characters by following story arcs, completing quests, collecting in-game-objects, and fighting game-generated opponents and other players’ avatars.

In 2005, Parsons investigated the prevalence of Internet addiction among MMORPG players and found that MMORPGs might be facilitators of Internet addiction. Using player surveys, Parsons determined that less than 1% of players report seeking counseling for Internet addiction (p. 97) even though over 15% of those surveyed met his criteria of Internet addiction, with 22% at moderate to high risk of addiction. He attributed these elevated levels of addictions to increased access to the Internet, increased time spent online, and social needs of the players. He indicated that the social needs, loneliness and confidence predicted Internet addiction among players (p. 95). Likewise, Sanders et al. (2010) found that MMORPG gaming leads to higher rates of information disclosure and that posit that such players were more vulnerable to exploitation and predation.

While most studies of MMORPGs focus on risks, a few also explore the potential benefits of gaming. MMORPGs may build leadership skills (McGonigal, 2010), and that the sense of satisfaction derived from being a part of the game and its community can be

used to develop other fronts of a player's life, that the sense of self-efficacy has utility in other spheres. Similarly, an IBM white paper pointed out that the kind of leadership abilities seen in MMORPG group leaders are the kinds of leadership abilities that would be required in tomorrow's business leaders (DeMarco, Lesser & O'Discoll, 2007).

Although Wolf (2007) pointed out that entering the community in order to learn leadership may be counterproductive if the player ends up addicted to the game, others suggested that in-game may be a good place to grow their leadership ability (Ee & Cho, 2012; Jang & Ryu, 2011).

Cole and Griffiths (2007) found that MMORPG players are very social, with gamers forming authentic relationships (friendships and romantic attachments) through games and feeling "more themselves online because they are not judged by their appearance, gender, age, or other personal information." Smyth (2007) reported that players assigned to play MMORPGs showed higher enjoyment of play, and greater acquisition of new friends (aka building persistent communities).

Researchers are also investigating the utility of MMORPGs in the classroom. As an example, Delwinche (2006) recommended that in-game exercises in Second Life or EverQuest (two popular MMORPGs) be used when they build "bridges between the domain of the game world and the domain of professional practice" based on two MMO-based courses. Paraskeva, Mysirlaki and Papagianni (2010) argue for approaching online games as a complex learning environment.

Sanders, Atkinson, Dowland, Furnell and Papadaki (2011) conducted a meta-analysis of the studies reporting effects of MMORPGs and presented a table of risks and benefits, reproduced here as Figure 1. Still, MMORPGs represent only a subgenre of

MMOs. Browser MMOs, another subgenre of the MMO class of games, represent a growing, but relatively overlooked gaming experience. Browser MMOs can be played from any computer with a browser and an Internet connection, while MMORPGs typically require a player to download and run client software. Also, most browser based games are cheaper to play. World of Warcraft, the most popular MMORPG, boasts of subscription rates of \$18/month whereas the popular browser MMO Lords of Ultima is free. Finally, browser MMOs encourage 'set and forget' actions, where the game requires a few minutes of focused activity and allows for extended and flexible break times instead of the normal two to eight hour commitment to complete a group based event within MMORPGs. Thus, browser based MMOs have a lower cost of entry, in terms of accessibility, time and monetary investment (Klimmt, Schmid & Orthmann, 2009).

However, due to the focus on MMORPGs in the literature, MMO games are becoming interchangeable with MMORPGs. As a case in point, when Barnett and Coulson (2010) refer to MMOs in their review for Review of General Psychology, they actually mean MMORPGs. This is a dangerous confounding of terms because MMORPGs are a specific instance of MMO games. Yee and Bailenson (2007) discovered the Proteus effect, that is, online self-representation as an avatar has a direct impact on player behavior both in game and in life, outside of the game. However, avatars are particular to MMORPGs, whereas MMOs often lack this feature and would likely lack the Proteus effect.



	<b>Opportunities</b>	<b>Risks</b>
1	Presents challenges, facilitates personal skills development	Tracking & harvesting personal data
2	Team work, collaboration, evaluation and reflection skills	Unwanted intrusion, data disclosure
3	Share knowledge, support, motivate others	Creating and distributing malicious add-ons and plug-ins
4	Rewarded success, new challenges and opportunities	Desensitisation to violent, gruesome, harmful scenes
5	Adapting to new hierarchical social structures	Victim of griefing, trolling, cyber bullying
6	Advise and lead others	Harassing, cyber bullying another
7	Facilitates creativity and customisation of gaming experience	Desensitisation to sexual scenes
8	Using user generated content to enhance gaming experience	Unwanted contact and predatory behaviour. Being groomed
9	Create and publish user generated content	Erotic role play. Inappropriate sexual conduct
10	Emerging forms of self-other expression	Behavioural (operant) conditioning
11	Emerging dimensions of social engagement	Pathological gaming, behavioural addiction
12	Civic engagement, experimentation and expression of identity	Encouraging inappropriate, unhealthy behaviour

Figure 1: 'Emerging Opportunities and Risks in MMORPG Environments' table based on a meta-analysis of papers on MMORPG research from Sanders et al., 2011. Column numbers added for ease of referencing.

It would therefore be useful to study games and gamers who choose to play a browser based MMO game to provide a comparison to the common, and often over-extended generalizations, of MMORPGs. In most of the discussed studies, researchers have examined the effects or correlations video games have on players, but what is missing is an examination of how the players see the risks, how they cope and their motivations to play in that lens.

### **User Motivations and Benefits**

The studies discussed above exploring benefits of online gaming largely represent individual forays into the benefits of gaming; an appropriate broad theoretical framework to situate these studies in is the uses and gratification school of research.

Uses and Gratification has evolved since Katz's 1959 landmark paper establishing the need to determine *why* users use media and *how* media are used. As a theoretical framework, it assumes that the consumer of media is doing so both actively and in a goal-oriented manner; yet the theory is often critiqued for offering low predictive ability. While these assumptions may be more applicable in today's new media, including Internet and video games, due to these assumptions, many early applications to traditional mass media use yielded relatively poor results, since "much media use is actually circumstantial and weakly motivated. The approach seems to work best in relation to specific types of content where motivation may be present such as political content." (McQuail, 2010, p. 425).

After a thorough analysis of existing literature, Ruggiero (2000) put forth the idea of Uses and Gratifications for the 21<sup>st</sup> century, expanded to include concepts drawn from

the modern, non-traditional media. Roggiere speaks of a need to include the new features offered by the Internet, such as interactivity and hypertextuality. Stafford, Stafford and Schkade (2004) used this approach to study the uses of the Internet and found that Internet use was driven by process and content gratification, items seen in the uses of old media, in addition to a social gratification, a use seen only in the new media.

LaRose, Mastro and Eastin (2001) suggested that reformulating gratifications as outcome expectations rather than gratifications sought and obtained would improve the predictive use of the theory. Sundar and Limperos (2013) took this further; they recently postulated new measures as part of 'Uses and Gratifications 2.0' to measure the nuanced uses of new media instead of applying older measures to capture less accurate data.

Uses and Gratification has been applied to video games as well. Neys, Jansz and Tan (2014) determined that persistence in gaming is due to three main factors: enjoyment, competence and connectedness. Wu, Wang and Tsai (2010) also used the uses and gratifications approach to examine players of online games in Taiwan. While they do not mention what kind of online games they examined, they used empirical measures and found that achievements, enjoyment and social interactions were the three primary factors, similar to Internet usage.

Hassouneh and Brengman (2014) developed a motivation-based typology of social world users based on players of the MMORPG Second Life. The primary factors that emerged in their typology, in decreasing order for both sexes, were friendship, escapism, role-playing, achievement, relationship and manipulation. However, the gap between the more frequent factors and less frequent factors was larger for women. That is, there was less deviation in female motivation for MMORPG use. While these studies

did not use the new measures suggested by Sundar and Limperos (2013), they do follow classic uses and gratifications line. Even Yee (2002) suggested that excessive use of gaming followed a push and pull system: that users had certain needs, and that gaming provided a pull that satisfied those needs.

### **User Perceptions of Risks**

In-depth interviews and other rich data collection have lead to studies on gamer motivations (Wolfe, 2012; Xu, Turel & Yuan, 2012; Yee, 2006; Yee 2006b), but not an analysis of the user-perceived risks. Zhong (2009) administered a survey to 465 Chinese gamers and found that their perceptions of pro- and anti-social game effects (a benefit/risk pair) was moderated by a third person effect.

Davidson's (1983) third person effect finds that individuals perceive the likelihood of negative influence from mass media to be greater on other people as compared to themselves. This can be due to a perceived vulnerability of the others, or a perceived strength of oneself. Ivory (2004) was the first to survey 175 students and apply third person effect to video games. He found that players rated the addictive potential of video games as moderate for others, and very low for themselves; but posits that this could be due to heavy gamer's defense of the medium.

However, limitations of the survey method limit a fuller understanding of gamer perceptions. The contextual information is important not only to achieve a proper understanding of the information, but also, "whether Internet and MMO use were associated with negative or positive outcomes was largely dependent on the purposes, contexts, and individual characteristics of users" (Shen & Williams 2011, p. 145).

Therefore, this study aims to fill this gap by examining the player's perceptions of risks using browser MMOs.

One way to examine how an audience perceives their interaction with media is through mental maps. Mental maps are physical representations of the many different ideas and concepts that people use to construct the meaning and the concepts underlying an idea, word, or phrase.

Used in the context of risk communication and perception, mental maps have been applied to a variety of issues, including climate change (Morgan, 2001, p.76; pp. 125-141), radon in homes (Atman, Bostrom, Fischhoff & Morgan, 1994; see Fischhoff, Bostrom & Quadrel, 1993 for discussion of the application mental maps for health communication), radon and cigarette smoking (Hampson et al., 1998), earthquakes (McClure, Walkey & Allen, 1999), coastal hazards (Morrow, 2009), nuclear waste disposal (Skarlatidou, Cheng & Haklay, 2012), nuclear energy sources for space missions (Maharik & Fischhoff, 1992), cardio-metabolic health risks (Damman & Timmermanns, 2012). In their study about the risks and benefits of wildfires, Zaksek and Arvai (2004) came up with a model that contained various effects and causes of wildfires. In the diagram, each effect and cause had a number indicating how many of the laypeople (and experts) in their population of interest mentioned it based on interviews with experts on wildfires in that area. The disagreements between the items that the experts and the laypeople list are used to drive the communications strategy. For example, the items that both the experts and the laypeople agreed on could be relatively deprecated, while items that they disagreed on indicated a gap that communication could fill. While sometimes this entailed correcting misapprehensions that the "laypeople" had, the laypeople are

experts in their own experience and observed phenomena and contributed in their own right. Keeping in mind that communication is two-way, comparing mental maps is a useful technique to identify disconnects and gaps. In a similar case study, Morgan (2001) talked to experts and to sixty adolescents (the “laypersons” in this case) to find out their conceptualizations of HIV/AIDS. The “difference” map was used to devise a communications campaign.

Fischhoff and his colleagues used many techniques to create mental maps of concepts. These included surveys (administered vocally or by text), and in-depth interviews (Bostrom, Atman, Fischhoff & Morgan, 1994; Bostrom, Fischhoff & Morgan, 1992). Eventually, the group recommended the use of open ended, in-depth, semi-structured interviewing to identify how users structure knowledge because fully structured interviews assumes that the interviewer knows all possible responses. They can also lead the interviewee in directions where they would not normally go by providing cues. Additionally, interviewees also try to give interviewers what they think the interviewer wants (Weiss, 1994); an open ended conversation allows the interviewer to identify their beliefs, how strong or weak they may be, and possibly even gauge the basis on which the interviewee is responding.

These techniques will be applied in the context of Grounded Theory. This methodological approach was introduced in Glaser and Strauss’ (1967) landmark book, *The Discovery of Grounded Theory*. In the book, Glaser and Strauss established that qualitative methods could be systematic and based firmly in the data. They emphasized that data collection and analysis could not be separated for qualitative research and made the case that theory could be derived from data rather than simply from older theories. In

the four and half decades since, both Glaser and Strauss have refined their techniques in different directions, and others have taken their ideas and made them their own.

Glaser (1978) backed the original idea of constant comparisons between and within the data to come up with explanations for and about social processes, while the bulk of Strauss' later work focused on techniques to validate researchers' theories (Strauss and Corbin 1990, 1998). Thus, following a Glasarian grounded theory approach will lead to a more empirical and parsimonious take on the data, while a Staussian approach will lead to a strategy that has multiple validation and reassessment steps during the course of theory formation. A much later entry into the field, Charmaz (2001), challenged the assumption that data somehow produces the theory ("theory emerges from the data") independent of the researcher and instead proposed a more interpretive approach: the research participants (interviewees) bring with them their points of view, and the final theory draws as much from the implied meanings in their words as much as the researchers own constructed understanding of the subject of study. Further, unlike Glaser or Strauss, Charmaz called for a delayed literature review instead of none, since a prior literature review would bias the researcher as an instrument and dictate to him or her what patterns to see.

A grounded theory approach to research calls for the gathering of rich data. Thus, ethnographies are common, and have been carried out for MMORPGs (Pearce, 2006; Steinkuehler, 2007) with short field interviews. However, the core of grounded theory lies with in-depth interviews and has frequently been used to understand user (or "lay") conceptions of risk.

One of the most common fields in which grounded theory has been applied is health communication. Grounded theory was the basic framework used by Charles, Redko, Whelan, Gafni and Reyno (1998) when they interviewed 20 women with early stage breast cancer to find out how these women understood the risks and benefits of breast cancer and how they cope with the prognosis; it found that the women preferred when the physician took a decision making (not just information supplying) role, for fear of making a mistake. Though the study was presented in the context of the communication challenge faced by physicians, it has wider implications for women similarly afflicted.

Similarly, Hoskins, Roy and Greene (2012), determined through 60 interviews that young women who tested positive for BRCA 1/2, a genetic trait that is linked to a higher risk of breast cancer, conceptualize risk in both oncological and non oncological terms, such as childbearing, impact on family, impact on their mental state. The non-oncological risks prompted these young women to pre-emptively get mastectomies instead of going through the medically equivalent risk management strategy of a quarterly screening process. This, again, has implications for counselors who, knowing this, may now be able to give women a more comprehensive picture of risks and help them cope.

Grounded theory is particularly appropriate when there is an underlying social process that informs the perception of risk. Essentially, it allows the researcher to understand what underlying social factors may be at work in user conceptualizations of risk. For example, when Roy, Nonn, Haley and Cox (2007) deconstructed why young injection drug users in Montreal disregard the importance of preventing Hepatitis C, they



found that it wasn't lack of knowledge: the drug users just had more pressing concerns on their minds than acquiring Hepatitis C. From their analysis of interviews with the drug users, the authors concluded that providing a stable living condition would be a critical component of successfully intervening and treating the HPC, once acquired.

In a similar vein, Lotfi, Tehrani, Yaghmaei and Hajizadeh (2012) identified the barriers to condom use among women at risk of HIV/AIDS in Iran to be low self-esteem, low self-efficacy, and "the perception of trust, commitment and loyalty established by marriage" (p. 7).

However, not all findings are directly related to what the researcher is looking for. Grounded theory calls for going in with themes or topics of interest, instead of specific narrow questions. In allowing the user's experience to speak, and listening to what patterns may emerge from the data, one may discover something interesting and useful. Georgakopoulous, Ciancanelli, Coulson and Kaldis (2008) were looking to "clarify the underlying driver(s) of the farmer's preoccupations" (p. 21), when they determined that the coping mechanisms for environmental risk among organic salmon farmers was denial and affective bias; the Scottish government's plan to turn organic salmon farmers into good stewards was ineffective because they saw themselves as the underdogs.

A grounded theory approach, therefore, has been used to capture perceptions of risk across multiple contexts and doing so within a video game context will extend the current understanding of gamer perceptions in this growing field.

### **Study Objectives**

The purpose of this study is to understand how long term players of a massively multiplayer online game formulate their ideas of risks and cope with those risks. Using grounded theory I intend to generate a mental model of the user conceptualization of risks and answer the following research questions:

1. What are the risks and benefits identified by the players?
  - a. What are the risks associated with playing?
  - b. What, if any, differences exist between player-generated concepts of risks and expert generated ideas of risk?
  - c. What are the general motivations to play?
  - d. What are the benefits of playing?
2. How do players conceptualize risks associated with gaming?
  - a. How do long-term players deal (cope) with the risks they face?
  - b. How do long-term players articulate the degree of various risks?
  - c. How do long-term players source their ideas of risk?
3. Why do they think the way they do?
  - a. On what basis do players calibrate the acceptability of risks?

## CHAPTER 3. METHODS AND METHODOLOGY

### Lord of Ultima

The target game Lord of Ultima is a massively multiplayer online (MMO) game. Each of the 97+ servers has several thousand players. Players form teams, called “alliances” of up to a hundred members. In this community-based game, an alliance (rather than an individual) wins by building eight communal “palaces”. Palaces not only need a lot of resources to build (and thus require the entire alliance to contribute), but can be destroyed by players. There is an imperative to establish military dominance to protect the palaces from rival alliances. Players advance their individual games to produce militaries and resources. Players simultaneously work within an alliance to collect and send resources to enable palaces to be built, and collaborate militarily to remove threats (other players) and protect the palaces from attack. Since each game runs between five and eight months, member recruitment and retention is also an important for the alliance, and is a critical responsibility of the alliance’s leadership team. Communication between alliances are usually geared toward ‘poaching’ members from other alliances, working with another alliance against a third alliance or disrupting a competing alliance from within. Thus, as a game, Lord of Ultima requires extensive cooperation and communication.

Lord of Ultima runs on a browser and thus is accessible to a larger group of players than the typical MMORPG. World of Warcraft or EverQuest, the quintessential MMORPGs, require the gamer to download a large client software to their computers, connect to a server, and play. Serious gamers of MMORPGs frequently “raid”, an in-

game activity that requires the player to commit two to eight hours at a stretch. While in the middle of a raid, a player cannot leave his computer. Furthermore, most MMORPGs have a monthly subscription fee. For the World of Warcraft, this is approximately \$18/month.

Lord of Ultima is an MMO, with all the social aspects of being a massively multiplayer online game, but it not an MMORPG. Since it is not an avatar-based game, we can remove the complications of the Proteus effect, making results of this study applicable to a wider base of MMO games and players. This classic game ran from April 2010 until owner Electronics Arts (EA) announced that all servers would be shut down on May 12, 2014 (Williams, 2014). While EA did not cite a reason for this closure, it closely followed the quiet shut down of the game's developers (Makuch, 2013). Many later games in this genre have followed in the footsteps of Lord of Ultima and share many similarities to it, including the newer Tiberium Alliances. Lord of Ultima exemplifies the genre but games are constantly replaced as they age (Electronic Arts, 2014). Lord of Ultima itself was one game in the Ultima franchise, one of the oldest continuing gaming franchises.

### **Population and Sample**

Players who self-identify as regular, long-term gamers who have played the target game for at least six months were asked to participate. As a player within the target game community, I began by recruiting players with whom I had an existing relationship and who I know fit the desired participant profile. Snowball sampling was used to identify further participants. First-order participants were those whom I knew personally. Second-

order participants were those who were somehow connected to me virtually (in-game), either through alliances or other in-game communication. Third-order participants were those with whom I had no direct connection but were suggested by either first- or second-order participants as individuals who would make good interview subjects. Two first-order participants, eleven second-order participants and five third-order participants were recruited. While the willingness of first- and second-order contacts to be interviewed was high, there was more resistance from third-order contacts, with less than a third of the third-order contacts agreeing to be interviewed. Players who chose not to participate were not comfortable engaging via voice; some cited voice conversations with a stranger over the Internet as a risk they were unwilling to take.

Potential participants were recruited mainly via Skype messages requesting them to volunteer; some participants were recruited through the in-game mail system. This in-game email system is local to a server and has no forwarding abilities. However, active players consistently and regularly use the in game mailing system to communicate about the game, mainly, working toward reaching alliance-wide goals, asking for and responding to requests for military help in the game. Successful alliances tend to have a pyramidal leadership structure. Leaders talk to their 'officers' (who serve a lower management role) about strategic goals; officers, in turn, collaboratively form tactics to achieve their strategic goals. To this end, every officer stays in touch with every member of his or her team (including social and real world events that might impact achieving those goals).

Studies on and demographics of browser based MMOs are hard to come by. It is even hard to find an estimate of the total number of players. Demographics gleaned from

the MMORPG World of Warcraft indicate that players have a mean age of 23-28 (Achab et al., 2011; Griffiths, Davies & Chappell, 2004; Hussain & Griffiths, 2009; Yee, 2006;) and show greater proportion of males (between 65% and 85%) (Griffiths, Davies & Chappell, 2003). Gamers are largely introverts (Williams, Yee & Caplan, 2008; Yee, 2006), and the average MMORPG player logs about 22 hours of usage per week (Yee, 2006) but only a small minority of the players appear to exhibit excessive playing and sacrifice other activities in order to play (Griffiths, Davies and Chappell, 2004). One study of French MMORPG players found that over two thirds of players have at least a high school diploma, and 23.7% of the players had a masters' degree or higher (Achab et al., 2011). While those descriptions specify MMORPG players, one of the only studies on browser based MMO players shows demographics conforming to the MMORPG model, with survey respondents being 76.7% male, and young adults (24.2 years,  $SD = 9.4$  years) (Klimmt, Schmid & Orthmann, 2009).

For this study, eleven male and seven female players were interviewed. The youngest was 22-years-old and the eldest was 63. Players were recruited from the USA (7), Britain (2), Norway (1), Argentina (1), Australia (1) and Brazil (1); the rest did not identify their geographic location. All but one of the players interviewed for this study held fulltime employment in fields as diverse as construction, finance and safety inspection. All but one of the interviewees had a high school diploma; information about further education was not sought. Two interviewees additionally pursued part time college degrees.

I continued interviewing gamers until the data were saturated; saturation was reached when no new themes emerged with new interviews. In this study, no new themes

emerged in the last three of eighteen interviews. In a comparable study, Hussain and Griffiths (2009) stopped after conducting 32 semi-structured msn messenger interviews to players of the MMORPG World of Warcraft. Since my interviews were over voice (rather than text), I was able to let the interviewees' tone and nuances guide the interview in a way difficult with text.

### **Procedure**

One-on-one semi-structured in-depth interviews lasting about an hour were conducted via skype following the protocol attached as the Appendix. The protocol contains a list of the items that need to be discussed in order to answer the research questions, as well as prompts to get the interviewee talking without leading them. One of the questions involved describing the categories of potential risks and opportunities from the table from Sanders et al., 2011, as presented back in Figure 1. Thus the protocol served as a checklist for the researcher, but the direction of the interviews was determined by the participant (following the guidelines established by Weiss in 1994 for semi-structured interviews). Therefore, the order in which various research questions were tackled were context-dependent for each participant.

In brief, after establishing what the interviewee can expect from the interview, the players were asked to describe their playing history and their motivations to play. This generally led to a discussion about risks and informational sharing practices, impact on their real life, challenges in and around playing, coping mechanisms, and their communication practices inside and outside the game. Typically, following these themes, players were asked for advice they would give to new players on not only game

mechanics, but also other things that new players should watch out for, including potential risks. This broad open-ended question allows them to summarize, if they choose, or bring up additional issues not listed in the interview protocol.

Once consent was given, interviews were recorded (audio) and transcribed. Names were stripped from transcripts, and players were assigned letters from the alphabet randomly as codenames, except the letters 'A' and 'I', which are words in and of themselves. These codenames will be used for all further data analysis and presentation. Following the methodological guidelines laid out by Charmaz (2006), a thumbnail sketch of impressions and highlights of the interview were written immediately afterwards, and later the interview was transcribed from the audio recording. Data were collected over a period of a few months starting in October 2013; all but two interviews had been conducted by February 12, 2014 and all data collection was complete by April 2014. One year after the data are collected, audio files will be deleted. The text-based research materials will be retained for 3 years.

### **Data Analysis**

Data analysis was carried out concurrently with data collection. The first step of data analysis is transcription. Not only does transcription produce the raw text that is the data for further analysis, it is one of the researcher's earliest exposures to the data. Transcription allows the researcher to develop some initial ideas about the broad strokes of the interview.

Next, the transcribed data was open-coded, approximately sentence-by-sentence. According to Esterberg, open coding is where a researcher briefly describes what that line



or sentence is about (2002, p. 158). This generates a list of labels that describes the content of the conversation. These labels were collected and clustered them to arrive at higher order themes and categories (as suggested by Charmaz, 2006, p. 86). After each interview, the labels for that interview were added to the label collection for the project and fit into existing categories; the labels were used to generate a mental map.

Glauser and Strauss's constant comparative analysis procedure suggests that researchers should review what each new datum adds to the understanding of the whole. After every third interview, I attempted to re-cluster the data by getting rid of all the existing clusters, shuffling the labels and seeing if any new patterns emerge due to the introduction of the data. By comparing what I already found with what I learned with every new interview, I therefore generated the "theoretical properties of the categories" (Anfara, Brown & Mangione, 2002 p. 32).

Both Esterberg and Charmaz suggest that once the important themes have been identified, one should go over the (blank) interview transcripts again looking for those themes. They call this "focused coding" (Charmaz, 2006, p. 57; Esterberg, 2002, p. 161). I did this for any new themes that emerge from the analysis, and for the current themes of interest: "perceived risk", "coping", "motivation/benefit". Focused coding allows the researcher to collect all the data (quotes) relevant to a theme in one place, and carry out higher order analysis.

I generated memos throughout the entire process of data collection and analysis. Memos were tagged "data" if they are notes on data collection, "procedural" if they document decisions made during the data analysis stage and "theory" if they are to do with theory development. Both data and procedural memos are useful to document the

study: to make clear tracks that “shows the hand and opens the mind of the investigator to his or her reader” (Anfara, Brown & Mangione, 2003, p. 29). I used the theory memos to record ideas on connections and patterns I saw in the data or in the literature to arrive at my analysis and conclusions.

I also carried out a negative case analysis, where I looked to see if there are any examples or contradictions for my proposed theory in other sources (Mason, 2002, p.155). That is, if a gamer makes an assertion, I actively looked for specific cases where *other* gamers have denied that assertion, especially if I plan to use that assertion to build a theory.

### **Situating myself in the context of the game**

I played Lord of Ultima (LoU) for about one and a half years, and “won” the game on three different servers (w55, w89, w52) as part of different hundred-member teams called “alliances”. On one team, I was a team member, in the second, I rose to the position of alliance leader halfway through the game, and in the final team, I was leader from start to finish. Throughout this time, apart from coordinating gameplay for my alliance members, I stayed in the top ten players on the server, and had a major individual contribution toward playing. Being a prominent member of the LoU community opened many doors for this research. Some of the participants in this study are ex-members of my alliance. Some of them are other leaders of different successful alliances who have heard of me. And some of them are members of other alliances who were willing to speak to me, based on my reputation in game.

As I was an LoU player, the participants all perceived me as being “in group”. On the one hand, this gave me access to people and a built-in level of trust I can leverage to get honest answers to complicated, personal and difficult questions. I believe that my personal brand and the trust I evoked in most of the participants led to deeper data. On the other hand, as a long-term player of the game, my assumptions may have impacted the analysis. In order to minimize this impact, reflexivity during analysis of the data and careful parsing of the data, mindful of my own biases and assumptions, is called for.

## CHAPTER 4. RESULTS AND DISCUSSIONS

Risks undertaken by gamers have real world consequences, including out of control spending, disruption of personal relationships, and stalking. One of the players, M, claimed to have been stalked by another player, with the alleged stalker also contacting M's family and church. Similarly, as an example, O's wife and family disapproved of his gaming habits and this caused several familial issues.

Consider spending money: even though Lord of Ultima is a free-to-play game, purchasing add-ons such as ministers [minis] makes the games easier and much more pleasurable to play.

“I mean, for eight bucks [a month] I can get minis. Keeping your queues filled is the key to be in the top ranks. With minis, I can have a life. I don't have to check my queues every time something gets done building, I can just check in every few hours. It gives me a freedom from sitting in that chair. Other games can cost like, twenty-five a month. Eight, I can do. It's less than what I make an hour. And anyone can handle two coffees. But yeah, I usually spend like fifteen, because just having a few funds for emergencies can make a difference.” (S)

Many participants quoted the danger of spending too much money at the beginning of the game, with only two players (L and R) being willing to spend over twenty dollars monthly. F, for whom the free-to-play nature of the game was one of the reasons he chose to start playing it, said, “I spent a couple hundred dollars the first few months. I had to keep up, and I couldn't figure out what you guys were doing, so I just... wallet warrior. You know.” Said T, “You don't even know how much you've spent until you look at the credit card bills. The first few months on the game can be a silver plated bitch.” Therefore, while this study examines gamer's perceptions of risks, it is important to couch such perceptions within the real outcomes of their engagement with the game.

### **Perceived Risks in Online Gaming**

Following the mental maps method, the labels from the interviews were aggregated into themes to form a map of the conceptualization of the mental landscape for risks and benefits around gaming (Figure 2).

From Figure 2, we can see that a large number of the risks elucidated by Sanders et al. (2011) emerge from discussions with long term players of the game. Four clear categories of risks from the analysis are: pathological gaming, technical risks that arise from misuse of the system (website, computers, etc.), financial risks that arise from sharing financial and personal information with the game and with other players, and risks to the individual due to interactions on the game. Some risks, such as monetary mismanagement (e.g. overspending on the game) fall under multiple categories.

The gamers are motivated to play for four reasons: escape from reality, seeking enjoyment, seeking achievements and for social interactions. The last three motivations were identified for gaming by Wu et al. (2010) and are similar to motivations identified for Internet use based on the uses and gratifications framework. All four fall into the user typology for social worlds determined by Hassouneh and Brengman (2014) for MMORPGs. Gamers experience enjoyment individually, while interacting with the game, and with other people. In this particular game, there is both a cooperative and a competitive component to person-vs-person gameplay. Players see benefits arising from three motivations types (enjoyment, achievement and social interactions) through competitive and cooperative gameplay. It is interesting that escape from reality is often quoted as a benefit of gaming, even though it is directly related, in players' minds, with the risk of loss of time.

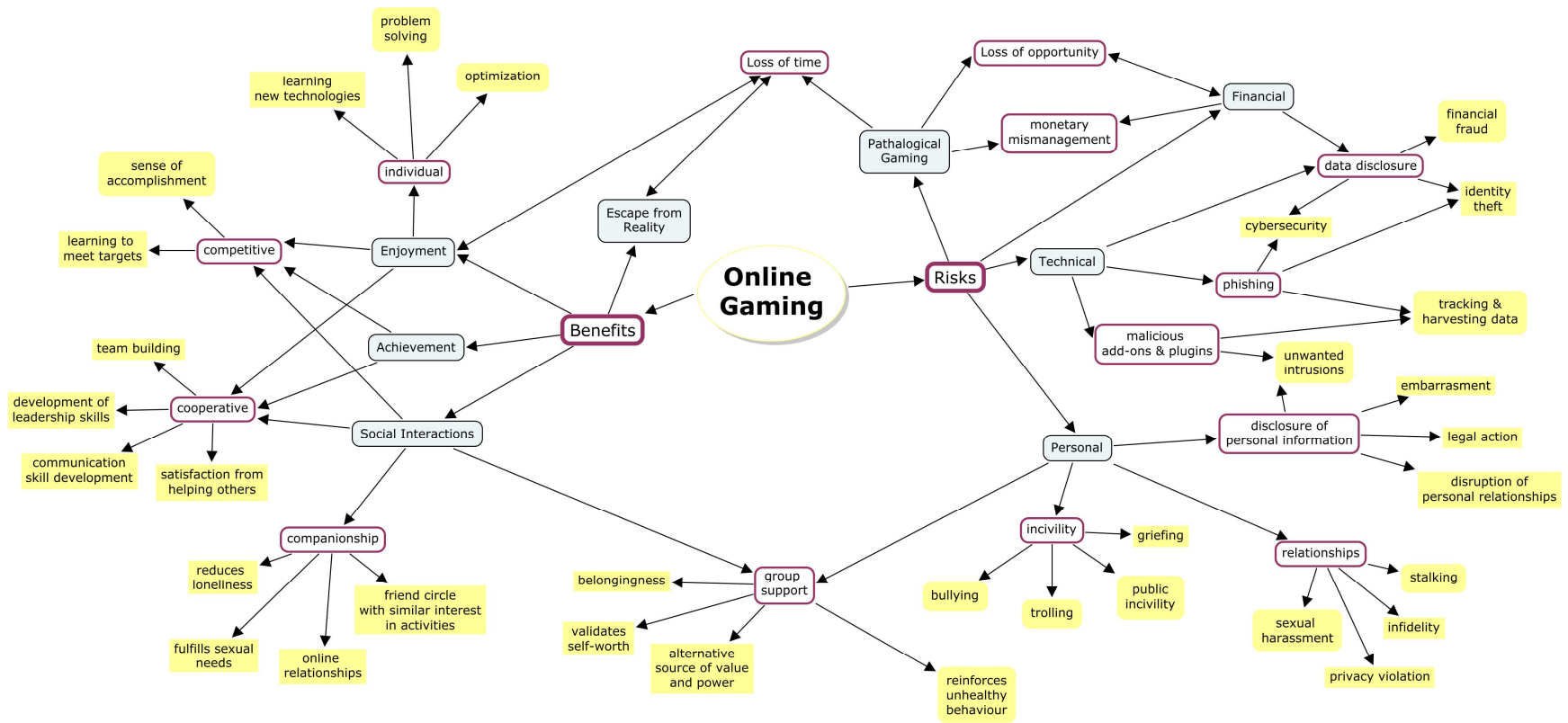


Figure 2: Participant's mental maps of the risks and benefits associated with online gaming. Filled blue bubbles indicate categories the researcher created to represent and organize gamers' concepts. Yellow bubbles are risks or benefits explicitly mentioned by the gamers.

The only benefit that was typically immediately associated with a risk was ‘support from the group’. The major risk identified by gamers linked to support was the possibility of encouraging unhealthy behavior. Curiously, gamers joke about gaming itself being unhealthy behavior, frequently referring to LoU as being ‘worse than crack’. Although data disclosure is placed on the risk end of Figure 2, players only *implicitly* brought up data or personal information disclosure as a risk. They mentioned sharing information – including identifying information, financial data, account login information, and private information including images in compromising positions; but rather than outright listing it as a risk, they implied it, saying, “that takes trust” (G, Q, E, and H).

However, while this map presents all the risks that were mentioned, it does not denote how important the gamers thought the risk was. Because the gamers were not informed that they would be discussing risks before the interview and therefore are unlikely to have prepared for that topic, the risks spontaneously presented are the ones most accessible and will be interpreted as perceived as more important or relevant.

Table 1 lists the risks mentioned most frequently by gamers. For comparison, these risks are also noted if they were present in the table from Sanders et al., 2011. The primary risk identified by players was pathological gaming: being unable or unwilling to stop playing, being unaware of time passing (loss of time), overspending on the game, and loss of opportunity. Every player spontaneously mentioned how the game was ‘addicting’<sup>2</sup>, frequently humorously; every player except one specifically brought up loss

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<sup>2</sup> Except J, who has a background in psychology and said multiple times that she didn’t know if it was an addiction.

of opportunity – how they could have been doing something else. It is interesting that long-term players would admit to being addicted and admit to the addictive capacity of the game. However, players also note being that they are able to manage their addiction without too many negative impacts on their day-to-day lives.

Players also mentioned interpersonal interaction risks. In Figure 2, these are classified as personal risks. While all the risks in Figure 2 were mentioned by at least one participant, of all the personal risks, the most frequently mentioned were bullying and sexual harassment. When considered together, players brought up the risks associated with the financial tag in Figure 2, followed by the technical tag in Figure 2. All the other risks, such as griefing, public incivility, or risk of legal action following disclosure of shared information, were brought up by fewer participants and are not listed in Table 1.

Table 1: Perceived risks as prioritized by players. Risks are sorted in descending order of the number of people who mentioned the risk.

<b>Risk mentioned by player</b>	<b>Number of players mentioning risk (Cued?)</b>	<b>Mentioned in Sander's table?</b>
Pathological gaming Loss of time	18 (No)	#11
Loss of opportunity	17 (No) 1 (Yes)	No
Bullying Sexual harassment	15 (No) 3 (Yes)	#5, #6, #9
Financial risks	4 (No) 14 (Yes)	#1
Technical risks	6 (No) 4 (Yes)	#1, #3

In contrast, the risks from the table from Sanders et al., 2011, that participants dismissed as not being relevant were the ones that they associated with the existence of an avatar, e.g. erotic role play (18 participants), behavioral (operant) conditioning (18),



being groomed (18), desensitization to sexual scenes (17) or desensitization to violent, gruesome, harmful scenes (as you would see in a first person RPG or shooter) (18).

However, F mentioned desensitization to sexual conversation:

My alliance has – well, had, now, I guess – a skype group which ... where people just bummed around in and talked. And if some people –you’ll edit out the names, right? – well, if [edited out] were around, they would make all these really sexually charged conversations with each other. Not that they were having sex in the common room, but eventually you got used to it and there was also... a lot of people didn’t participate, but if you talked in that room and didn’t, you were a sissy. So a lot of people, they just talked in the alliance-business only rooms to actually do war planning or whatever you know. But that was uncomfortable in the beginning.

Many of the risks that players were dismissive of were due to a lack of technology in this game. When, after the interview, P was shown Sander’s table, her comment was, “they clearly aren’t talking about LoU”. When pressed, she explained, “you just can’t do that stuff in LoU. I mean, HOW are we going to have a violent scene? We get numbers after we slaughter millions of troops. Castle squished? Numbers again. No scenes, really. It’s not like tiny triangles are scary.”

Perceived risks and mitigation strategies both appear to be context dependent and based on real world experience. For example, consider a comparison of risks perceived by player Q vs. player M.

Q, 44 years old, holds a masters degree and works in the financial sector, was the only one to identify all of Sander’s listed financial/online transactional risks associated with video gaming. Q takes no additional precautions against such risks and uses his credit card to charge his account on the gaming site. His expertise appears to foster trust in the safeguards of the existing system. “I don’t think I’m too worried about all that

though. The website should have a good deal of backend security to take care of all that. It's about whether you trust the company behind the game. And EA is too big to be selling my information."

M, 45 year old, is a high school graduate working in a supervisory position for a blue-collar sector. He does not use a credit card on websites. Instead, he goes to WalMart and buys an EA card, which he uses to charge his account. So, he trusts the WalMart store over an online game, which he has been playing for over a dozen years. Whether this is due to lack of trust in an online transaction, or because of a specific lack of trust in the game is difficult to parse from the interview. It appears that M loses trust in an entity if it morphs into a 'them'. "They don't care about the players [...] why would my debit card information be safe with them?" His lack of expertise combined with a perceived lack of interest on the part of the game leads him to distrust the website and not take the risk of giving them his financial information.

In a different context, Q, happily married for over two decades, was unaware of online relationships formed during gameplay. After his initial reaction, "People DO that!?" he took a few moments, and composed an argument for, "But that's not safe to do!" He proceeded to list a lot of risks associated with forming online relationships through the game, not least of which was, "You'll destabilize the alliance, make so much drama!" On the other hand, M engaged in online sex with women he met over the game. M perceived relationship risks, but was reluctant to discuss them. "Of course you have to be able to trust the person you do that with."

### **Motivations to Play**

A discussion of perceived risks is incomplete without the perceived motivations and benefits of playing. Participants in the study listed a number of different motivations. All participants noted that they played the game because they enjoyed it. But in many long-term players of the game, the source of enjoyment shifted from optimizing the mechanics of the game (only 3 listed this spontaneously), which would be fulfillment of a cognitive need for challenge, to social processes, such as belongingness to the alliance, or individual relationships within it. In both cases, the game represented an escape from the stresses of 'real life' (participants' term) and was seen as a means of short-bursts of relaxation in between stressful family or work situations.

Wu et al., (2010) empirically show that in some online games, achievements, enjoyment and social interactions are the three primary factors of gratification of the users of online games. These three factors emerge as motivators in this study too. Both P and N quoted the usefulness of internal rankings for contribution to the alliance as a motivating factor for other members of their alliances (both are leaders of alliances); although none of the participants claimed the need for such things for themselves, certain achievements (such as winning) was critical to all of them. In the game, various participants claimed a cognitive need to be good at the game: 'beat the game' (B), 'figure it out' (G), 'beat the other guy' (N), 'be better than anyone else' (E), 'be the most efficient empire' (Q). The same people whose primary driving force was the social aspect of the game, also said that because alliances cut off eligibility for members below a certain rank, ranking 'only matters so you don't get kicked out [of the alliance]' (P,J), and they spent more time in social interactions and in out-of-game communication with other

players. Some of these players also sought relationships of various kinds outside of the game. To quote R, ‘I think H uses LoU somewhat like a dating service too kinda like M did. He’s just far more private about it.’

It is difficult to compare the data with Sanders et al.’s table (2011) of risks and opportunities, primarily because the participants did not present their experiences as opportunities. However, Table 2 indicates the mapping of words or phrases the participants used that are most likely related to Sanders et al.’s list of opportunities. The first column in Table 2 is from Sander et al.’s 2011 table referenced earlier. The second column assigns the opportunities to one of four benefit/motivation categories from Figure 2. The third column contains phrases and labels from interview transcripts that I considered to be a match for the opportunity in the first column. The final column lists the number of participants who mentioned the phrase from whose interview the label was extracted. In this table, the cued/not cued numbers are not included.

In Table 2, we see that all the opportunities emerged from the data except those that require advanced graphical use or an avatar. The availability of some opportunities versus others may be dependent on the specific game. When comparing to the categories of benefits from Figure 2 earlier, we can see that in the minds of long-term players of LoU, opportunities related to interpersonal interactions are represented more heavily than the achievement and enjoyment categories. The opportunity to unplug and escape from reality isn’t mentioned in Sanders et al.’s table; it comes with the associated risk of immersion and prolonged disconnection from reality.

Table 2: Opportunities from Sanders et al.'s (2011) table, and correlation to data in this study. Opportunities are assigned to one of four benefit categories (escape from reality, enjoyment, achievement, or social interaction) as derived from Figure 2.

<b>Sanders et al., 2011 table opportunities entry</b>	<b>Benefit category from Figure 2</b>	<b>Phrases participants may have mentioned</b>	<b>Mentioned by (Number of participants)</b>
Presents challenges, facilitates skill development	Enjoyment	Game mechanics, optimization, learning to use and play the game and add-ons effectively	8
Team work, collaboration,	Social interaction	Teamwork, alliance, coordination, war, palace resources,	18
evaluation and reflection skills	Achievement	contribution rankings	7
Share knowledge, support, motivate others	Social interaction	Mentoring, supporting, conversations, motivation, helping other players	13
Rewarded success, new challenges and opportunities	Achievement	Ranking up, changing continents, winning, new roles, promotions	15
Adapting to new hierarchical social structures	Social interaction	Promotions, change, alliance organization, continents, roles	11
Advice and lead others	Social interaction	Leading, mentoring, advising, officer, role	4
Using user generated content to enhance gaming experience Create and publish user generated content	Enjoyment Enjoyment	Mods, software, add-ons, documents and spreadsheets on googledocs or other similar shared source – all shared peer to peer	8
Emerging dimensions of Social engagement	Social interaction	Dates, appointments, coordination, meetings, calls	5
Facilitates creativity and customization of gaming experience	Not present		0
Emerging forms of self-other expression	Not present		0
Civic engagement, experimentation and expression of identity	Not present		0

Four of the participants were curious about the source of my checklist. When they asked me, I shared with them the paper and the table (after the interview). Three immediately commented, they could not see the link between some of the opportunities and risks in the context of LoU (#1, #3, #4, #7, #8, #9, #10, #12 from Figure 1) and as mentioned earlier, felt that some of the risks were irrelevant to this specific game due to the lack of an avatar or any customizable user graphics (#7, #8, #9, #12 from Figure 1).

### **Risk Mitigation Strategies**

Gamers use three ‘tricks’(Q) or ‘mind fucks’ (E) to manage the risks associated with gaming: framing the risk as a benefit by thinking in terms of what is gained or by comparing to alternatives; minimization of the degree and extent of the risk through either third person effect, dismissal of the threat entirely as irrelevant or inapplicable, or reduction of seriousness of the risk through humor; presenting management of risk as a matter of faith and trust and therefore not action.

Consider the primary risk identified by gamers, loss of time and opportunity. Managing this risk rarely involved reducing gameplay. Gamers interviewed reported playing anything between 2-8 hours a day with more during the weekends. Each claimed to average at least 20 hours a week, with some listing above 60 hours a week. Every time gamers were asked about gaming time, they also provided information about the ‘intensity’ of game play. It appears that if they are not completely focused on the game, they do not consider all of that time as being spent on the game. For some, getting an accurate idea of how much time they spent on the game was hard to arrive at, because they would ‘leave the LoU window running in the background’ (15 participants), so that

they could easily tab into the game during ‘breaks or whenever there’s an attack of anything. “The great thing about LoU is that you don’t have to sit there for four hours. You can just set it and check on it in ten minutes or two hours or whatever, while it builds. Or launch an attack and just check when it hits to see if went well. I just have a second monitor where it’s going so it doesn’t distract me from work.” (G)

In many cases, the time management strategies used to combat loss-of-time were ineffective in actually managing time; instead they were aimed at reducing the consequences of time-loss. For example, E brought his workplace supervisor into the game too, so that he could play during the day at work and not get into trouble. G met his deadlines for work, weeks, even months ahead but did not report progress accurately, giving him ‘spare time’ in which he needed ‘something to do’.

B was the only long-term player who managed the risk by reducing. He quit the game while ranked 4 on a server of several thousand players and while part of a winning team. If he had stuck around for only a month and a half beyond the approximately six he stayed, he would have won with his team. He did this because he had once “lost 4 years to world of warcraft” and he felt the pattern was repeating. So he acted like an alcoholic tasting “a little bit of wine in some punch” and cut it off entirely.

Finally, as a risk mitigation strategy, gamers made worst-case scenario plans for the risks that they had imagined in order to manage it. The most common was, “I can always cancel the credit card.” The ones that mentioned this also mentioned having the habit of watching their credit card statements. This gave them confidence in their risk management decisions.

**It's a benefit, not a risk!**

When participants acknowledged taking risks, they often framed it in terms of the benefit to themselves and others instead of the risks. One example is that when talking about time loss, they would note the risk, but then justify why they were doing it, and explain how they were 'not really spending all that time, the window is just up all day'. They would often immediately go into the benefits of either gaming in general, 'But it's a good break from work' (F), or of this specific game, 'Its so much better than Evony. I used to have to sit at the computer and didn't dare to move for an hour during an Evony attack!' (J).

No participant named data disclosure explicitly as a risk. Instead, they flipped it into a matter of trust for the person they disclose the data to. The only situation in which all the players used multiple different risk minimization techniques was while selecting third party add-ons for use on their browsers to enhance gameplay. They all used a trusted add-on ranking site, tapped in-group expertise and relied on word-of-mouth among the community to selectively install add-ons.

Being aware of the risk but voluntarily accepting it appears to make the participants less willing to consider the behavior a threat. When participants alluded to the degree of threat attributed to a risk they based the intensity directly on their estimate of the likelihood to occur, and the likelihood to occur to them. Interestingly, the two were not as disparate as one would imagine for the risks that they admitted to taking.

However, while describing risks to children, possibly due to third person effect or the perceived vulnerability of children, many risks came up, including bullying (11 participants) that did not come up in the context of risks to the player. These risks were



not mentioned earlier, despite the fact that the participant had witnessed bullying (6 participants).

Similarly, when the gamers spoke to me as an ‘in group’ individual, they were far more likely to list personal reasons for play. These include some kind of fulfillment from actually playing the game, such as ‘I enjoy challenging my mind’ (H), ‘its like an optimization problem’ (B), or ‘it’s a puzzle every time’ (M) to fulfillment found in the social component of the game, like ‘I like knowing there’s a real person on the other side I match my brain to and then the point is to outfox them.’ (G), ‘I liked being part of something bigger. It’s about getting the alliance to the top. I like winning, don’t get me wrong, but its great to know that its about something bigger.’ (J) or ‘I like companionship while I work. I work night hours. Literally no one is around. No one. So it’s nice to have people to talk to, and its not just about hooking up you know, its about actually having... you know, what we do, listen to music or play games, or you know... just hang out’ or ‘it easier to have relationships online.’ (S)

However, when they spoke about why one should play as advice to a random third person, they frequently listed reasons not to play, framing the risk of spending too much time, or money, or being unable to do other things, or whatever combination of risks they presented as a benefit earlier. The benefits were listed as the cerebral challenge of the puzzle and rarely, the fulfillment of teamwork.

### **Trust-as-strategy for risk management**

Literature shows clearly the trust is critical in risk management and communication. Its role in this study is multi-layered. From the interviews, it is clear that once the participant makes a decision about a particular behavior, they do not reconsider

it until and unless information comes forcefully to their notice, causing the player to reconsider older decisions. In the context of this game, trust determines who is in-group as a gamer, who is in-group of the alliance, and the degree of data disclosure that the participant is willing to engage in.

Relationships are built on the willingness of players to help others manage ‘real life’ so that they can ‘focus on the important stuff’ (T, H, C), the game. Husband, wife, boy/girl friend, baby “aggro” is jargon to indicate attention from that person and to indicate interference with gameplay. This usually results in someone else taking over in the game for the player for a short while.

Gamers also support each other through other events in ‘real life’. For example, a longtime member of the LoU community, S died of cancer in Dec 2013. Until that point, an entire alliance set up vigils and financial support for the treatment. Similarly, O acquired funding for higher education and T for her causes through marathon-running via the community of the alliance in the game.

Thus individual friendships were common and the corresponding amount of trust was seen often. Even among individuals who did not form such friendships, the leaders of the alliance frequently knew real names and other private data about them. Many of the participants made comments along the lines of, “once you choose to trust [subject: the leader, the alliance, the website], you kinda have to go with it. You can’t sit around letting it eat you up inside.”

### **Role of Groups in Risk Mitigation**

Groups are an essential component of the LoU game. Members of these groups communicate about risks and evolve shared strategies for risk management. In LoU, teams of 100 players work together towards common goals in order to win. When the team wins, each player is crowned a winner. Players of LoU cannot win the game outside a team. The team can have a maximum of 100 members, and usually stays full; there are also internal hierarchies that differ from alliance to alliance. As such, all participants interviewed in this study had had in-game ‘alliance’ affiliations. Frequently, an alliance would ‘win’ a server and move on as a group to another new server and start again. Thus, some alliances were persistent multi-server, multi-game associations of people.

Players who were affiliated with each other in an in-game alliance often shared a similar degree of articulation of risks and a similar idea of the acceptability of out-of-game communication, financial risks associated with gaming, and sharing personal information. In this study, gamers from at least three distinct alliances were interviewed (only three alliances had at least three members participating in this study).

Players from different teams had different ideas of what the risks were and the risky behaviors they had or were willing to engage in, while conforming to what their teammates were willing to do. While it is possible that the clear alliance-lines are an accident, it is more likely that the alliance evolved a common risk mitigation and acceptance strategy. While one alliance required members to accept certain risks (a policy level decision made by the leaders of that alliance), others may have come to a common idea based on communication. While players said that they did not engage in deep conversation about risks, per se, their daily conversation contained referents that

guided them on how their fellow gamers were thinking. When asked about the source of their perceptions of risks, the participants were unable to answer. Their sourcing is amorphous and/or related in their memories to anecdotes. Literature shows us that it is not uncommon for people to lose the sourcing of facts once acquired (Marsh, Meade & Roedinger, 2003).

In some of the most developed ideas of risks, many conversations appear to have happened to shape a shared idea of risk within the group members.

According to the Theory of Planned Behavior (Ajzen, 1991), attitude toward the behavior, perceived behavioral control and subjective norms impact intention towards action. Subjective norms are defined as the social pressure to conform. In this context, it is the pressure from the group for the individual to accept certain risks. In the last two or three months of gameplay, players with large empires are overwhelmed by needing to maintain their empires as well as contribute towards the win. Unfortunately, both these tasks feel tedious. D describes them as “a large number of chores that never end. You have to raid dungeons, and if out don’t reset the raids when the dungeon runs out, the armies starve. And then you can’t send resources to the palace, and your contribution to alliance rankings slip, and then before you know it, you rage quit because your empire is full of ghosts. Even with resource towns, it’s a pain to remember to push resources to palaces everyday, every time a new palace lights up. Its... hard to stay the course.”

Participants estimate just maintenance can take anywhere between 45 minutes to two hours; the key collective game play that enables an alliance to win (‘resources to palaces’) is also tedious. An alliance experiences the highest amount of attrition in player

base at this point in the game. People stay because they want to win, and also because they feel they would be letting down their teammates if they quit.

During this time, if a player wishes to quit, it is usually portrayed as morally irresponsible to quit on one's teammates; there is extreme social pressure to continue playing. If the player is determined to quit, he or she is asked to share account information so that the leaders of the alliance can keep the account going, and continue to participate towards winning. The norms of the alliance dictate if the player is asked for the login information, which is against the terms of service of the game, or a temporary substitute. In either case, the player must trust said leader to not steal his credit card information if it is still attached to his account, and not do anything damaging to his reputation, since such players usually return to claim their accounts later. Managing the new account ends up costing the helper more time. For context, player M managed three and seven accounts at the end of two games; N managed three and five, G managed two and twelve, and T reports to have managed 'a dozen' at the end of two games and 'over thirty' at the end of another. This burden is not usually shared outside of the leaders and the officers of the game.

Haines (2014) discovered that long-term virtual teams have a sequential group development process, comparable to non-virtual teams, but delayed. He states that trust in peers begins with the feeling that team was accomplishing the task appropriately, and is associated with goal commitment in later stages. We see this in LoU: one of the integral values of members in the alliance near the end of the game is goal commitment. It is even used as a lever to pressure players to continue playing until the end, suggesting that possibly the context in which the virtual team is formed is immaterial. This implies that

Haines' recommendations for effective team management (having specific, clear goals, communication between members, and an expectation of continued contact after the project) are applicable more broadly, for many virtual team processes.

## CHAPTER 5. CONCLUSIONS

The purpose of this study was to extend the literature on risks associated with video games to include a player-centered understanding of these risks and to broaden the context from the more commonly studied MMORPG genre to the potentially more influential browser MMO genre.

In general, players identified many of the risks associated with gaming that Sanders et al. arrived at through their meta-analysis of MMORPG data in 2011. However, risks associated with having an avatar in the game or access to a certain degree of graphic customizability did not emerge in this study – likely a consequence of shifting the context away from MMORPGs to the broader, but often less studied MMO games. In addition, this study was able to determine the primacy of some risks over others in the minds of the players. Players believe that biggest risk with online gaming is the loss of time and opportunity associated with pathological gaming and as a second main risk, interpersonal abuse in the form of bullying and sexual harassment. Finally, the risks inherent in sharing financial data with the gaming website and with other players as well as the risks of phishing and malignant software add-ons for the game were mentioned by a majority of players.

Participants in this study also identified an additional opportunity/benefit to gaming not identified in the Sanders et al. 2011 meta-analysis, namely, escape from reality. If this factor has indeed not come up in past research of MMORPGs, future research may focus on the attractiveness of this perceived benefit for gamers. Taken together, these findings imply that while Sanders et al.'s 2011 study may be an excellent

beginning point regarding the risks of video games, its applicability to specific games and contexts should continue to be tested.

It is also noteworthy that while articulating ideas about risks, some risks that experts unequivocally classify as risks were framed as benefits by the participants of the study. The risk of data disclosure by people who had received personal information from the participant was only implicitly listed as a risk, but the expert model regards this as a serious threat. Similarly, while players listed loss of time as a benefit, experts consider it a risk. In fact, disassociation, one of the primary risks investigated by researchers, is a motivating factor for some gamers (9). This implies that the way gamers think about risks may be different from the way experts do, and it is further possible that the difference between the two may be a consequence of risk management strategies adopted by the participants.

Several participants indicate that they should not have been doing various things in order to play: from using work time (multiple participants), to deceiving work supervisors (G, D, S), to deceiving partners (T, C, S, N), to 'leaving the kids in childcare for an extra couple of hours' (J). Despite their awareness of the risks, and the existence of the idea that they should not be engaging in this behavior, the players' motivations to play appear to drive them to take risks that aren't necessary in pursuit of those motivations. Kardefelt-Winther (2014) criticizes existing literature on Internet addiction and suggests a move toward compensatory Internet use in order to explain why people continue to engage in excessive use despite being fully aware of any negative consequences and impacts. Thus, he suggests we look at motivation as a mediator



between parasocial well-being and Internet use, a concept that could arguably be applied to video games as well as well as viewing the use of games itself as a coping strategy.

From this study, it appears that ideas of risk are shared within sub-communities of gamers; these sub-communities are persistent, long-term groups of people who regularly play together. This may partially be due to policies in their groups, and partially due to shared ideas due to communication about risks over time. It is clear that long-term players are unable to identify the precise source of their perception of risks. While some are sourced in their personal experience and is thus contextual, others are associated with anecdotes and hearsay. Even with anecdotes, gamers are unable to trace where they first considered a specific risk as a risk.

Yet, perceived relevance to self and likelihood to occur to self are the two main bases on which long-term players judge the severity of a risk. In some cases, such as when they disclose personal or sensitive information to another player, they deliberately decide to take the risk and trust the person. They frame it as a matter of faith or trust after that decision is made, and do not reconsider it until and unless new information is forced to them.

### **Practical Implications**

Long-term gamers within the target browser MMO game were well aware of the risks of gaming. They have in place what they consider to be sufficient and necessary precautions to protect them against the risks of gaming. They also additionally have the support of other gamers in staying in the game. In established communities, they have shared ideas of risks and risk management that reinforce their ideas. Thus, if gaming is a

behavior that is to be discouraged, or its degree and intensity to be changed, one should be aware that there is an entrenched community of support behind the behavior that makes it harder for any single long-term player to reduce or quit.

Billieux et al. (2013) demonstrated through longitudinal analysis that high involvement in game does not necessarily lead to a negative impact in daily life. In line with this, while informing gamers of risk might be useful to new gamers, long-term gamers, who spend a significant portion of their lives on the game, know and accept some of the major risks involved. Thus, any programming targeted to reduce their gameplay should be means of effectively reducing game time or should target loss of opportunity, which is the one risk that the players were most uncomfortable discussing and therefore could still trigger dissonance. Gamers are also driven by a feeling of obligation to continue playing in a group-based game. If there was a way to target groups, rather than individuals, the social fabric that keeps the players in the game may work to push them out. This is another target – small groups tend to quit together and may be extracted from gameplay habits together.

### **Limitations and Future Directions**

Despite the depth of understanding of the mental conceptions of long-term players reached through this study, no generalizable conclusions about video games can be made. While this study is adequate to speak to some practical implications arising from its findings, to establish generalizability would require surveys. Furthermore, absorbing the measures from Users and Gratifications 2.0 to obtain a nuanced look that

the motivations and benefits would be useful, while testing to see if these relatively new measures (Sundar & Limperos, 2013) yield any differences from the older measures.

This study is further limited in scope since it considered only a specific game; it is possible that other players from other games would have a different perception of risks and benefits. Thus, one would need to apply any conclusions from this study to other situations and contexts with care.

This study uncovered the important role of group dynamics in shared risk mitigation strategies, but did not go into the interviews with this topic in mind and therefore did not explore group effects as deeply as this topic deserves. This new direction of how a group formulates its ideas of risk perception, acceptability and management could yield valuable insights applicable to not only gaming, but other communities and groups.

The participants interviewed for this study were all long-term players of the game. This was in order to speak to people who had likely fleshed out their mental conceptions of risks associated with gaming. However, future research could look at comparing older and newer players to see if exposure to game play changes the perception of risks. Furthermore, since this study found that long-term gamers sometimes accept risks and do not reconsider those decisions, it would be interesting to study the process of making that decision. When, in the evolution of a gamer, does he or she accept greater and greater degrees of risk? What are the factors?

This study was unable to find the sourcing of risks among long-term gamers. One hypothesis is that the participants 'lost' sourcing for risks with time; thus, a longitudinal

or ethnographic study of the adoption of risks would be useful to trace communication of risks.

Finally, in this study, a meta-analysis of existing literature was used as an expert model of gaming risks. It is likely that speaking to experts will reveal further ideas of risks to consider. This would further the practical implications of this study for risk communication and risk management.

### **Reflections**

I was drawn to this research based on personal experience. On one world during my time leading LoU, I ran a “sister alliance” in parallel to my own alliance, bringing the number of people I handled to about 200. Toward the end of the two servers where I was leader, I was running 17 and 23 accounts respectively in addition to my own. While some of these accounts were handed over and run legitimately, in some cases I violated the Terms of Service in the way I ran their accounts, and I risked being permanently banned. I had access to not only account login information, but also the gamers’ credit card information to fuel the account.

During the course of leading the alliance, I knew what people were good at doing in the game, and assigned them tasks according to their schedules and abilities. As a consequence, I frequently knew details of members’ personal lives, and what it was costing them to play: in two cases, their marriages. Many of these people stayed in touch with me even after they had stopped playing. I learned a great deal while playing and after, but it was only hindsight that I understood what it cost me to play, not least of which was time, opportunity, and a great deal of mental and emotional energy. I hope this

research can be used to help players continue to enjoy their time while managing risks and costs of playing and to avoid regrets.

## APPENDIX. INTERVIEW PROTOCOL

Hello \_\_\_\_\_!

How are you? Thank you so much for agreeing to talk to me. [Establish rapport].

### Introduction

- State purpose of the study, which is for a thesis, with the intention for academic publication. Offer to share the paper once published.
- Confidential, I promise this won't leak. I'll run quotes by you before I publish. Your words remain your own.
- Voluntary. You can opt out at any time. You don't have to answer anything you don't want to.
- Is my accent going to be a problem? Just tell me if it is, and I can repeat and rephrase.
- Any questions or concerns at this point? I'll give you my phone number in case any concerns crop up later; you shouldn't hesitate to call me. Or, of course, I'll continue to be available on skype.

Some basic questions:

How long have you been playing?

What games? Would you consider yourself a regular gamer?

I'd like for us to focus on mostly Lord of Ultima. Is that ok with you?

Why do you play?

What do you get out of it?

When do you play?

Does the game interweave with your day-to-day life? If yes, how so? What other hobbies do you have?

What are the challenges of playing the game? How do you deal with those challenges?

Let's talk about factors outside the game. Do you see any challenges there (in the context of playing)?

Do you talk to people you play with online? Are there other modes you use to talk to people you play with? Do you play with people you know in real life? What does it take before you trust someone as much as someone from real life?

How can people reach you, in general? What about people in game? (Is that normal?)

Have you noticed a change in your sharing of information from the beginning? Does it impact your social life? If so, how?

You've mentioned negative impacts. Have there been positive ones?

If you don't mind sharing, have you had any unpleasant experiences while gaming?  
How do you protect yourself from that?

What advice would you give someone who is about to start playing? What if they are children/teens?

A large section of my project is about the risks associated with playing an MMO, like LoU. What do YOU think are the risks? Where or from what source have you learned about these risks?

I have a list of risks that other people have put together. If you don't mind, we can go over the list, and you can tell me what you think, if you've seen something, or experienced any of the following:

cyberbullying

online relationships

online infidelity

sexual harassment

sexual predation

(remind participant of voluntariness of this interview)

time loss

disassociation

addiction

privacy

cybersecurity

phishing, trade scams

*For items not mentioned, ask:* As you can see, this item on X is on the list, but you did not mention it before. Why was that? *Prompt to goad for other reasons.* Is it because you don't know about it? Is it because you consider that risk acceptable?

Do you have any questions or concerns about this study?

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