

**Research: Do MMORPG Players Have Culturally Endorsed
Implicit Expectations of Workplace Leaders?**

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**Unpublished Major Research Paper for
University of Guelph, MA Leadership Program**

April, 2014

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Abstract

This research addresses the question of whether working adults with experience playing MMORPGs (massively multiplayer online role playing games) have specific or unique expectations of workplace supervisors. The hypothesis is that a person whose experience of leading and being led includes many hours of virtual team-based gaming will have formulated unique expectations for leadership in the game, which they may transfer to their expectations of supervisors at work. Using quantitative research (an online survey), this study asked gamers about both in-game and at-work expectations of leaders. This research will contribute to existing Culturally Endorsed Implicit Leadership Theory (CLT) from the unique perspective of a generation that grew up with on-line technology and playing MMORPGs, participating in team quests under the direction of a virtual Guild leader. Our research question is: Do MMORPG gamers hold an implicit leadership theory which they carry from in the game to the workplace?

The results of our survey found that respondents value some leadership traits in-game that they do not expect at-work, and vice versa. This means that they are not carrying a prototype of excellent leadership from the game to the workplace, and they expect different leadership interactions face-to-face and outside the game. This has implications for leadership training using online games and for successful guild leaders who think they can use the same tactics at-work they use in-game.

Introduction

The researcher is an Organization Development consultant whose work is with leaders and teams in diverse organizations in the public and private sector. In the last decade, much attention has been given to the idea of generational differences in the workplace, and to the idea that GenMe (a term for those born since 1970s) have their own set of values and attitudes about the workplace (Twenge, 2006). They tend to be immersed in social media, and are the first workers who have been online since being toddlers. In Canada, management training companies have been selling training and coaching services aimed at helping leaders to adjust and become more flexible in the ways in which they interact with employees. This study will add to the discussion about if, and how, leaders need to change their styles, while focusing on a large segment of employees who are specifically situated within a culture of online gaming.

As a parent, this researcher has witnessed the zeal with which some young people embrace a new leisure activity of on-line gaming. Especially since the 1990s the number of on-line players has increased dramatically, so that estimates are that there are now billions of online subscribers around the world. Some gamers report playing more than 20 hours per week in MMORPGs, which is equivalent to a part-time job in Canada (McGonigal, 2011). Plenty of attention has been given to describing how individualistic GenMe is (Twenge, 2006), yet this phenomenon of MMORPG play is often done in virtual teams, and a whole new crop of players is under study (Kelly, 2012). This research can contribute to an understanding of how modern team-based leisure activities, as they evolve and become main-stream, might impact how followers implicitly perceive their leaders in the workplace.

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The Gaming Landscape

Massively multiplayer online role playing games (MMORPGs) currently have more than 23 million paid subscribers worldwide (Geel, 2014), at about \$15 a month, and PC Gamer magazine reports that the spending on games in the US rose 14% from 2011 to 2012 (PC Gamer, 2012). It is estimated in the United States alone there are 183 million active gamers (all games, paid and free) and 5 million who play an average of 45 hours a week (McGonigal, 2011).

World of Warcraft (WoW) is the largest subscribed-to MMORPG game in the world, with a reported 7.7 million subscribers (Kain, 2013) and therefore *WoW* players are the focus of many research studies. Its online Beginners' Guide offers a quick explanation of what team play is like in the game. MMORPGs are played online via the internet. Players create characters, also called avatars, to fulfill certain roles in a group, and to connect and play simultaneously with other characters in the game's pre-designed fantasy world. Many of the game's more advanced content is geared toward groups of players who work together to defeat monsters and complete quests. Along with a virtual world, the game's developers have created thousands of non-player characters which engage with the players (World of Warcraft Beginners' Guide, n.d.). Although they will have different virtual worlds, it is a common feature of MMORPGs to have avatars of specific roles, i.e. warrior, mage, etc. interacting in a player-driven economy.

Most MMORPGs, such as *WoW* and *Everquest*, are built to encourage team play. For example, in *WoW*, although solo play is allowed, the player's guide states: "The true challenges

and the big payoffs await in the world's many dungeons and raids, which can only be conquered by groups of heroes working together as a team.” (World of Warcraft Beginners' Guide, n.d.)

The toughest challenges require a large raid group of 10-25 players, in temporary alliances called parties or raids. Guilds are persistent groups who play together over time to take on more difficult tasks and earn better loot. MMORPGs include institutionalized leadership of guilds, a role that is pivotal to the success or demise of a group (Prax, 2010).

By first examining both the people who choose MMORPG as a leisure activity (gamers) and the design of the games themselves (mechanics), we can begin to understand what is unique about team play and leadership in the virtual-game world. This will set the stage for our research into the possibility of an implicit leadership theory – or a schema for prototypical excellent leadership – among gamers.

Who are Gamers?

Over time, a stereotype of an online gamer has developed, and was satirized in a 2006 episode of the cartoon television show *South Park*. Online gamers were depicted as overweight, pale, pimply teenage boys who neglect their hygiene and are oblivious to their surroundings. This was meant to reinforce the myth that gamers are totally immersed in a virtual world and “have no life” (Kelly, 2012). However, a 2004 study provided new demographics that the stereotypical adolescent male was not the typical gamer, but that 60% were more than 19 years old and they had diverse education and employment profiles. (Griffiths, Davies, & Chappell, 2004). Current gamer demographics tell a similar story: The average game player is 30 years old and now 47% of players are female – more than boys aged 17 or younger (at 18%). Adult gamers

have been playing for an average of 14 years, and 62% play with others, either in-person or online (Entertainment Software Association, 2012). Researcher Nick Yee, in a years-long online study of gamers called The Daedalus Gateway, found that 50% of MMORPG players work full-time, 36% are married and that the demographic profile was too diverse to call it a youth subculture (Yee, 2013)

Some researchers have postulated that gamers have a specific disposition, without saying if they came to the game with this disposition, or if it was bred by the playing mechanics of the game itself. One of the earliest taxonomy of gamers was created by Bartle (1996) who suggested four player-types: Achievers played to win points and advance in the game; Explorers to discover the games' machinations; Socialisers to be in relationships with others and Killers to impose themselves on others (Bartle, 1996). The model became a starting point for Yee's (2006) ongoing research. Yee developed the *Motivation to Play in Online Games Questionnaire* (MPOGQ) with three categories of motivations: Achievement, Social and Immersion. Yee found both genders played for socialization, with women emphasizing relationships over teamwork (Yee, 2006c). More than twice as many *EverQuest* gamers - 7,000 - contributed to a major motivational study that compared gamers' self-reports with actual in-game behaviours (Williams, Yee, & Caplan, 2008). Yee noted that, compared to single-shooter gamers, MMORPG players were not motivated by "arousal". He suggested this is because of the long-term and progressive nature of role-playing games (Yee, 2006c).

Yee's model continues to be popular with researchers, used throughout the world as researchers try to understand gamers and their motivations for playing (Billieux, et al., 2013). (Tseng, 2011) (Brown & Thomas, 2008). *World of Warcraft* (WoW), with the largest number of

online players, provides a rich single-source of subjects for researchers, many of who study only *WoW* players. One such relevant study was a 2013 study of 252 *WoW* gamers that found that all three of Yee's motivators can predict excessive play (Snodgrass, Dengah II, Lacy, & Fagan, 2013). From a gamer profiling perspective, the study is interesting because the authors developed a *WoW Consonance Scale* to measure the degree to which players felt they exemplified the ideal cultural model of a successful *WoW* player. This showed that gamers had a normative understanding of what a gamer is, although consonance with the norm had no effect. The top three gamer characteristics cited were: excels at their role in a variety of solo and cooperative situations; plays with knowledge and skill and enjoys the game (Snodgrass, Dengah II, Lacy, & Fagan, 2013).

But is there a gamer culture? In a comprehensive review of the social aspects of massively multiplayer online games, researchers Barnett and Coulson summarized the research around the demographics of gamers and said: "It is possible to conclude that gamers are not a specialized sample and are not much different from the general population" (Barnett & Coulson, 2010).

In fact, gamers themselves may avoid self-identification as part of a culture which has been stereotyped as addicted and socially impaired (Yates & Littleton, 1999). Negative stereotypes about gamers social ineptitude have also been internalized by players, who wish to define themselves as "not that" (Kowert, Griffiths, & Oldmeadow, 2012). Another study found that marginalized groups, whom marketers may be ignoring in game design, also dislike the social stigma attached to negative stereotypes of gaming. When rejecting the label of "gamer"

other factors such as race, sexuality, age and the game platform were not the reason (Shaw, 2011).

To date, much research has been done, and continues, with online gamers as easily accessible subjects. In most cases, the researchers survey gamers, observe them in-the-game, or both. Occasionally, this data is followed with interviews. From this, conclusions are made about motivations, interests and needs satisfaction of gamers. What is undeniable is that the number of people playing online games represents a significant percentage of the population, and one that is growing up and showing up in larger numbers than ever in the workplace.

Gamers as the Technological Generation

Computing technology has, along with music and fashion, been identified as a marker of generational culture, so researchers who are looking at gamers often include references to generational identity. For example, McMullin et al. created a generational timeline specifically based on the history of computing. They derived the following generations to reflect changes in computing technology: Pre-ATARI generation (born prior to 1955), ATARI generation (born 1955-1963), Console generation (born 1964-73), Windows generation (born 1974-1978) and the Internet generation (born 1979 and later) (McMullin, Comeau, & Jovic, 2007). The first true MMORPG – *Neverwinter Nights* – was released in 1991 through AOL (mmohuts). Thus the Internet generation was the first to always have had access to MMORPGs. McMullin et al. (2007) interviewed 141 Canadian Information Technology (IT) workers and found that generational dialogues spontaneously emerged as they discussed work experiences. Interestingly, they prioritized their youthful exposure to specific technologies as a point of differentiation from

their work colleagues. The general discourse was that cohort cohesion is based on similar memories of computer games and internet use during one's formative years (McMullin, Comeau, & Jovic, 2007).

In North America, an influx of new cohorts of younger workers has received media attention and the attention of researchers. Called Gen Y, Gen X, Millennials, nGen or GenMe, this group born after 1982 has been the subject of much scrutiny (Twenge, 2006) (2010). A summary of generational differences in work values notes that these employees may see work as "less central to their lives, are more likely to value leisure, and say that they are less willing to work hard" (Twenge, 2010, p. 208). Certainly gamers could be seen to value their leisure time in-game. A more recent study of the different ways that generations view their careers points to some important workplace values held by Millennials that may fit the common characteristics of gamers: They value autonomy and independence, pure challenge and technical/functional competence. Interestingly, Millennials also want the workplace to be fun and are more concerned about status and advancement (Lyons, Ng, & Schweitzer, 2011). One can see that logically games are meant to be fun, and in MMORPGs the whole point is to gain status and advance (level up).

In discussions about the impact of generational differences, many advise that leaders will have to use a different leadership style or different ways of motivating GenMe. Twenge, a foremost researcher in this field, details how employers should respond to the specific needs of this group. She advises managers to give extensive praise, allow them to make suggestions, and provide flexible schedules. Perhaps more related to gamers, she said: "Raised with the Internet and in collaborative learning classrooms, they are not used to sitting through long, boring

lectures...One-on-one training should be Socratic and task-oriented – don't just show them something, but have them do it themselves" (Twenge, 2006, p. 218). As we shall see, a major study of *WoW* players commissioned by IBM took the same approach, advising that business leaders would do well to lead more like in-game leaders (IBM & Seriosity Inc., 2007).

Contributing Mechanisms of the Game

If we are to ask about the expectations of leaders in the game, we must understand how the mechanics – or the design and flow of the game – could contribute to leadership roles, behaviours and expectations of followers. Generally, social scientists find it is difficult to determine how much the mechanics of the games themselves account for gamer behaviours, characteristics and self-reported values and motivations, and how much is accounted for by a player's predisposition or social settings as discussed earlier. For example, Yates and Littleton (1999) argue the concept of looking at the gamer population as one social mass is outdated largely because of the online mechanism of the games. They suggest that the idea of identifying a common social culture of gamers "...in essence viewing them as an atomized mass" (Yates & Littleton, 1999, p. 577) is based on earlier studies of patterns of mass media consumption of say, television and radio. They say instead that gaming is an activity that must be viewed within a complex cultural niches created by the gamer, the game itself and gaming cultures (Yates & Littleton, 1999).

Examining the on-line player's manual for an MMORPG reveals the official mechanics of team play. The game universe is not real, but is a virtual and scripted one. MMORPGs are built to be never-ending, persistent attempts to progress in the game or level up your character. There are hundreds of goals to strive for, and many decisions to make. MMORPGs, while they are interactive and engaging the players, are pre-constructed by the game developers and everything, including the economy, is controlled (Ives & Junglas, 2008). Games are structured to require certain behaviours and constant choices by leaders and their team members, in order to

be won. The games reward technical skill and experience only as it improves your skill. In MMORPGs all players, not just leaders, have the ability to be heroic (Beck & Wade, 2004).

The design and mechanics of the game is an important consideration to game players, who choose which games to play, and also have a myriad of choices for roles within the game. A gender-based study of gamers explored the interest gamers showed in both the visual content (graphics, characters) and mechanics of the game (problem-solving, strategy structures) (Yates & Littleton, 1999).

In a more recent study of how gamers and games are changing, Kelly suggested that the gaming culture is becoming more fragmented and diverse due to the large numbers of “second-generation gamers” who embody different attributes than original, hard-core gamers (Kelly, 2012). She posits that today’s new gamers first assimilate the gamer culture that grew out of the mechanics of the game, and then they diverge from it. One significant difference is in the way they approach playing. Kelly identifies that these second-generation gamers rely on proven solutions, which they gain from online sources such as chat rooms and forums (Kelly, 2012). This highlights a unique mechanism of the game – constant in-the-moment communication and the evolution of a participatory culture of sharing hints and tips – that is part of the game and is impacting the gamers themselves.

Przybylski et al. (2010) say that game designers have broadened the game environments to better meet autonomy needs and give more choice to players. They also identified a key satisfier called “mastery of control” - the way in which a player unlocks the games mechanisms in order to move through it while in character. The researchers conclude that games which

satisfy the need for autonomy, competence and relatedness increase a player's sense of immersion (Przybylski, Rigby, & Ryan, 2010).

While in the game, a player has a myriad of choices to make. What is often overlooked is that the game design process itself is also participatory. Developers interact with players in online chats and forums, and at gaming conferences. One such study of *EverQuest* examined how that game's designers historically made management decisions in terms of the rules for play. It concluded that the social norms (or the culture of the game) are determined as gamers interpret the meaning and implement the set rules through their collective play (Rowlands, 2012).

In-game Team Play and Leadership Roles

The mechanism of the game has a significant impact on how leadership and team work play out. Researchers say the mechanics of the game are themselves a key moderator of the in-game social actions (Williams, et al., 2006) (Taylor, 2006). In an example of this, researchers studying the MMORPG *Star War Galaxies*, found social interaction in the game is typically instrumental, where strategic action trumps social relationship building. In most cases, the player's goal is to complete tasks to win rewards, including a rise in status (leveling). This encouraged some absent players to leave their avatars operating on automatic pilot, simply so they could advance in the game (Ducheneaut & Moore, 2004). This kind of abandonment of the work would be difficult to maintain in most real-life workplaces.

In the game, the distribution of leadership differs from a typical North American business hierarchy, where leadership power resides at the top. In an MMORPG, each player leads his own avatar and leadership tasks can be taken on by a team member who is not the official leader. The

quest structure of the game encourages all team members to advise, instruct and direct others even if they are not the official leader (Xanthopoulou & Papagiannidis, 2012). There is some sparse research that shows that team members who do not follow instructions from more experienced gamers or their leader, are ostracized. Also, those who take treasure they didn't earn, or don't share the booty in agreed-upon ways, are also ostracized (Brown & Thomas, 2008).

In 2006 Williams et al. studied the social life of guilds within *WoW*, and found that various leadership styles were preferred, although all players saw the critical role of the Guild Master (GM). "What was clear was that being a GM is a difficult task, made all the more remarkable by the fact that it is voluntary and rarely comes with any particular reward" (Williams, et al., 2006).

Teams in the game work best when they have similar playing levels. While diversity in avatars is welcomed, the players controlling them need to have similar experience in the game to work well as a team, as a wide disparity in level means characters die off or lose points (Ducheneaut, Yee, Nickell, & Moore, 2006). Conflict, outside of one's team, is rewarded in the game, and is central to its design since experience is gained through conflict and successful defeat (Dickey, 2011). In *WoW*, the reward and incentive system is openly shared, which may facilitate trust among members. The many options for leaders to instantly communicate to members may also lower conflicts (IBM & Seriosity Inc., 2007). A qualitative study of 15 European players discussed the topic of conflict management in-game, and found that serious conflicts were rare. When they did occur, they were often based on differing motives for play (task-orientation vs. fun) and could be solved by firm leadership. If conflict is not solved, leaders and team players may just leave the group (Siitonen, 2009).

As part of the game's design, communication among team members and between leaders and teams is constant and across both spoken and written channels. The nature of chats include constant and immediate feedback (fail or succeed) of actions. Lord and Maher (1993) conceptualize culture to include the way in which information is processed by organizational members. They describe one particular way of sharing information as "cybernetic processes", where feedback is speedy and people can change their behaviour based on the new information (Lord & Maher, 1993) In 1993 the authors did not use online gaming communities as an example to make their point, but today's MMORPG communities certainly they fit the definition of cybernetic models, where "...interpretation of past social information is intermixed over time with planning future activities and executing current behaviours" (Lord & Maher, 1993, p. 24). This kind of communication relies heavily on feedback from the task or social environment.

Reeve et al (2007) determined that many aspects of *WoW*'s designed environment inherently create shared leadership practices in the game. They point to the speed of action, the temporariness of the roles and the lack of important real-life consequences of risk-taking. Some of these may mirror changing business realities, but not all. Others, they say, are not common in business but could be and might be in the future (Reeves & Malone, 2007).

Blurred Lines between In-game and Offline

The development of online communities and the gamer culture has been carefully studied since the advent of gaming. There are several academic journals (Games and Culture (SAGE) and ELUDAMOS Journal of Computer Game Culture (Singapore-MIT GAMBIT Game Lab) as well as books (e.g. Beck & Wade, 2004; Taylor, 2006) and conference proceedings devoted to

the topic. Given the serious attention to them, are these really games? In 2006 Nick Yee in the first issue of the journal *Games & Culture* said that the boundaries between work and gaming are becoming blurred. Although many of the games are based on fantasy worlds, Yee explained that by putting in more than 20 hours a week in a game, many players begin to characterize their gaming as a second job (Yee, 2006a). He also said that given the comparable experiences in the game, it would be misleading to trivialize them as just playful games (Yee, 2006b) Yee says: “They are parallel worlds where cultures, economics, and societies are being created...They are not just games” (Yee, 2006b, p. 325).

Of particular interest for this research is an in-depth anthropological study of gaming culture by Taylor (1996) who was determined to look at both the unique mechanics of the game, and the normative practices happening within it. Taylor suggests that there are elements of offline and online spheres that are distinct and other where there are areas of overlap. She says, “What I find in my work (and see in many others), is that people live much more in the gaps between the two and negotiate that experience in fascinating ways...In much the same way we now see the relationship between on and offline life as not a bounded one, in many ways a game/not-game dichotomy does not hold” (Taylor, 2006, p. 19). Taylor identified “power players” as those who are serious about the game, and appear to others not to be having fun, but to be working at it. Taylor used this group to examine the notion of play vs. work in order to illuminate the blurring of that line, and to argue that leisure and labor are not dichotomous concepts (Taylor, 2006).

In support of this view that gaming might not be a separate activity, but might be a mirror of the gamer, Yee et al (2012) mapped in-game preferences to real-life demographics. The study

of *WoW* players showed that different players choose different activities, and that the game is built so as not to force specific playing styles on anyone (Yee, Ducheneaut, Shiao, & Nelson, 2012).

Another study of 1000 high-end gamers using a Trait Emotional Intelligence assessment also indicated a diverse style of playing. Therefore, the authors see games as places where people can express their personality through their emotions: "Gaming is likely to become a projective medium reflecting the gamers' own personality" (Herodotou, Kambouri, & Winters, 2011)

"Our research demonstrates that, on some level, players do in *WoW* more or less what they do in real life, striving to achieve and also pursuing meaningful social interactions and relationships" (Snodgrass, Dengah II, Lacy, & Fagan, 2013, p. 251).

The amount of time being spent on MMORPGs speaks to the seriousness of this recreational activity that many employees are engaged in. If one believes that there is also a blurring between in-game play and real-world living, one might easily assume that MMORPG players have the same expectations of leaders in-game and at-work.

Leadership and Gaming Research

To date, the study of leadership and MMORPGs has largely focused on the possibility of using games as a training medium for leadership development, something already happening in the military and other organizations. Other researchers have observed and reported on in-game leadership. A few major studies have focused on whether leadership skills honed in-game are transferable to the changing world of work.

The increasingly commercial application of virtual technology and gaming for business has sparked the interest of business leaders in better understanding the way virtual teams work. In 2008, the Society for Information Management's Advanced Practice Council (APC) commissioned a research initiative to further explore this. The APC financed a virtual home office located on *Second Life*, which is not an MMORPG but is a popular virtual world platform where people operate as avatars. They found that "collaboration among team members, even in firms deeply involved in building virtual worlds, has generally not migrated to virtual worlds" (Ives & Junglas, 2008, p. 154). Real-world employees, even those encouraged by leaders to join virtual meetings on *Second Life*, did not flock to the site. At the same time, APC predicted that with enabling technologies, and to support an employee population growing up with video games, business applications must grow in significance. In situations where it is expensive, or dangerous to meet physically, they predicted that online training and virtual business meetings will increase (Ives & Junglas, 2008).

Much interest has been shown in the pedagogical possibilities of using gaming as a training ground for leadership skill-building. In looking at gaming as a training resource, researchers are wondering if gaming increases one's leadership competencies. From a gamer's perspective, Yee's large study of MMORPG players showed that gamers do not play because they want to lead, and leading or following describes behaviour in the game but is not a motivation to play. While not driven to the game for leadership learning, the same study showed almost half felt that game play increased their leadership skills and had made them more comfortable as leaders (Yee, 2006b).

Still, researchers want to see if gaming leadership increases leadership excellence in real-life. A recent study of American college students said MMORPGs offer a valid leadership training ground (Hettrick, 2012).

Jang and Ryu (2010) surveyed 800 Korean gamers, and used a final sample of 300, to examine the relationship between in-game leadership and offline leadership, and to test for skill transfer. The researchers controlled the results for previous leadership experiences. Using the Multifactor Leadership Questionnaire (MLQ) which measures transformational leadership, they sorted 30 items into three leadership orientations which game leadership behaviours. These factors were: Value and motivation –oriented (including talking about values and trust and a compelling vision); Trust and respect –oriented (includes helping others, respecting others and instilling pride) and Intellectual stimulation-oriented (includes stimulating thinking and problem-solving). They found that the experience of all three factors in-game were statistically significant when it came to a positive correlation to offline leadership. Their findings were that gender, age and the number of hours spent playing MMORPG did not correlate to offline leadership. Researchers said that online games have the potential for gamers to acquire leadership skills and then transfer them to real-life, and that this would be more fun and cost-effective. However, they conclude that leadership is an ambiguous concept and that reliance on self-reporting and Korean-only gamers may limit the applicability of their findings (Jang & Ryu, 2010).

Some researchers have compared teamwork and leadership roles in MMORPGs to teams in the workplace, seeking similarities between the two.

In a study called “Play online, work better?” Xanthopoulou and Papagiannidis conducted a longitudinal study of 79 employed MMORPG players to see if behaviours used in the game

were transferred to the workplace. They noted that today's business requirements to lead global teams, delegate decision-making and collaborate using digital interaction in a highly competitive and fast-paced world resembles the MMORPG game environments. Over an elapsed month, the researchers focused on measuring transformational leadership behaviours from the Multifactor Leadership Questionnaire (MLQ) and active learning behaviours. Their findings were that, over time, transformational leadership behaviours did spillover from the game to the workplace, and that this was especially true when the player was performing well in the game. The study was based on self-reporting rather than observation, but gamers clearly thought they were using the same leadership skills in the game in their workplace (Xanthopoulou & Papagiannidis, 2012).

Lisk et al (2012) looked at leadership in multiplayer online environments from the perspective of whether it might be useful as a model for real-life leadership of distributed teams (DTs). Distributed teams are workplace teams that cross physical, geographic and cultural boundaries. Seeing similarities to this and online games, the authors sought to increase understanding of what might be needed for leadership of DTs. They noted that online games are risk-free environments for learning, and that they provide a social context. First, the researchers looked at two case studies of leadership in online games, and then they asked players about their leadership behaviours in the game and at work. They found that differences exist between in-game leadership and traditional, non-distributed teams. Among their conclusions were that the skills needed by leaders in the game are sometimes different than that in real life. In particular, the ability to use communication channels and technology is important. "Leaders who cannot wield the tools at their disposal, do not stand a chance" (Lisk, Kaplancali, & Riggio, 2012, p. 144). The researchers commented that DTs are flattening hierarchies, and changing the

workplace so that it more resembles online gaming, and that further studying guild leadership can help organizations to prepare for an effective way of leading them (Lisk, Kaplancali, & Riggio, 2012).

Prax (2010) compared the style of in-game Guild leaders to the style of organizational leaders using the traditional Leadership Grid model which juxtaposes concern for production with concern for people. In interviews with guild leaders he discovered that most leaders used two different styles; one, during the actual raid, which is oriented toward results, and the other, outside of the raid, which is aimed at creating a comfortable team atmosphere. During raids some guilds have a rule limiting who can communicate. When not on a raid, guild leaders use a friendlier style to stabilize the team and attract good players. One conclusion was that guild leaders in-game are responsible only to the guild members, and – unlike business leaders – do not have external customers or stakeholders to also worry about (Prax, 2010).

Similar to the discourse found in generational discussions, some gaming researchers are saying that this cohort generation of gamers will expect different leadership, and they suggest that business should adapt to them (Beck & Wade, 2004). This is the premise of the largest, most-cited study of working gamers, which examined the applicability and transferability of leadership skills from in-game to the real work world. Reeves and his team of researchers at Seriosity were commissioned by IBM to conduct an 8-month study with a team of veteran players. First, they observed them gaming, and then used a survey and focus groups to further illuminate their findings. This study used a well-known leadership framework developed by MIT Sloan and reported in Harvard Business Review (Ancona, Malone, Orlikowski, & Senge, 2007) to examine four core leadership capabilities: sense-making, visioning, relating and inventing.

The researchers claimed that game leaders perform leadership activities that are similar to what is done in business, i.e. decision-making, recruiting, assessing, motivating, rewarding and retaining team members. Their most important conclusion was that the game environment made leadership easier, mostly due to communication mechanisms and an appetite for iteration or learn-by-trial (IBM & Seriosity Inc., 2007).

Following the initial research, IBM's Institute for Business Value surveyed 214 IBM professionals who were gamers, to test the applicability of gaming leadership behaviours for the corporate world. Thirty-nine percent said that MMORPG approaches could make corporate leaders more effective. However, some reported that they doubted business' ability to adapt game-type leadership because of traditional hierarchical cultures and risk-aversion (DeMarco, Lesser, & O'Driscoll, 2007). For the second study, the Sloan framework was modified, so now the four categories became visioning, evaluating, collaborating and executing. Statistical data was not available from the IBM study, but a descriptive white paper of the results says that visioning was rated higher for corporate leadership, and collaborating ranked more important in-game. Evaluating and executing were important skills in both, with game leadership requiring a different style. In evaluating, gamers learn by doing, said the authors. In executing, in-game leaders use a rapid-response style.

The study also gave a list of 24 capabilities used by effective in-game leadership. Six capabilities were ranked most important for corporate leadership as well: developing skills of your character, accumulating assets; watching operational status and communication channels at the same time and communicating on multiple channels; navigating instantly to where your

connections are located and finding capable players quickly (DeMarco, Lesser, & O'Driscoll, 2007).

In a subsequent oft-quoted article in a popular business magazine, *The Harvard Business Review*, Reeves et al. state that "...we found several distinctive characteristics of leadership in online games that suggest some of the qualities tomorrow's business leaders will need in order to achieve success" (Reeves, Malone, & O'Driscoll, *Leadership's Online Labs*, 2008). A more controversial conclusion is that by replicating some of the fun aspects of the game, businesses – and leaders – can create more engagement at work (Melymuka, 2008).

Businesses, and their Human Resources consultants, are highly interested in gaming and its application for leadership development and transfer of skills. There has not been a study to see if a culturally-endorsed implicit leadership theory is emerging within MMORPG gamers.

Study Construct: Implicit Leadership Theory (ILT)

Almost 40 years ago Eden and Leviathan concluded that leadership factors are partially held in the minds of followers. Implicit Leadership Theories (ILTs), which take this suggestion further across gender and culture, suggest that followers hold an image of an effective leader in their mind. These schemas are then stored in memory and activated whenever followers interact with a leader (Schyns & Meindl, 2005). Rush and Russell (1988, cited by Schyns & Meindl, 2005) argued that social events, prior experiences and interactions help form ILTs. This leads to a perspective that culture influences expectations of effective leaders.

The most influential work in the field of ILTs has been done through ongoing academic research by Lord and his associates since 1978. Lord et al have developed a cognitive-attribution approach to explain perceptions which allow people to categorize someone as a leader (Lord & Maher, 1993). In this model, the label "leader" is formed by recognition-based and inferential cognitive thinking, which can involve automatic and/or controlled modes of information processing. In recognition-based processing, leaders are categorized by followers based on what's appropriate for the situation and the hierarchical level of the leader. By using existing prototypes, formed from direct experience and what is socially communicated, followers perceive leadership even under conditions of high information load (Lord & Maher, 1993). In inferential-based processing, followers assess the quality of a leader based on the causal attributions they make. In other words, they may assume a leader is a good leader if the team succeeds at their task. In cases where there is cognitive overload and preoccupation (which could describe MMORPG playing) the perceiver may use automatic inferential-based conclusions of a leaders' effectiveness (Lord & Maher, 1993).

Lord and his fellow researchers have evidence of leader prototypes, and their work raised the question of whether there are leadership attributes which are universally endorsed. In trying to answer this, many cross-cultural studies of leadership use the work of Hofstede (1980, 2001) to measure cultural differences. Hofstede identified five major areas of difference: power distance, uncertainty avoidance, individualism-collectivism, masculinity-femininity and long-term, short-term orientation (Northouse, 2013)

In 1991, Robert House gathered a group of researchers to begin collecting data globally, in a major study of culturally endorsed leadership theories (CILTs) (House & Aditya, 1997). GLOBE (Global Leadership and Organizational Behaviour Effectiveness) is a multi-phase, multi-method research project which since 2002 has been studying leadership in 61 nations. It uses nine cultural definitions and surveys thousands of middle managers in order to compare attributes of effective leadership. The goal of GLOBE is to describe, understand and predict the relationship of societal culture on leadership processes, based on a theoretical proposition that what distinguishes one culture from another is predictive of what is expected of leaders to be successful (House, Javidan, Hanges, & Dorfman, 2002). GLOBE researchers seek to see the impact of culture on leadership prototypes, and if there is one universally accepted schema for effective leadership.

In 1994, Gerstner and Day asked 142 leaders in 8 countries about their prototype of a business leader using a 59 point list of attributes. They concluded that reliable differences of leadership were found. In particular, in the Western subgroup, which included France, Germany, Honduras, India and the United States, the trait *determined* was prototypical for every country. In the Eastern subgroup, including Taiwan, China and Japan, the trait of *intelligent* was

prototypical. No one trait was rated in the top 5 for each country, but the trait of *goal-oriented* appeared in all countries except for France and Japan (Gerstner & Day, 1994).

Medcof and Holzinger (2007) compared leadership prototypes across Canada, China and India, while developing a new CILT scale informed by the GLOBE project and including other relevant cross-cultural research. After initial testing, the researchers settled on 12 leadership categories, each with from 4-8 specific items. The 69 characteristics rated by respondents, were then clustered into 12 Leadership Types: charismatic, procedural, integrity, humane, directive, determined, goal-focused, communicative, servant, adaptable, status conscious and challenger. Their findings were that the same seven leadership dimensions were highly positive across Canada, India and China results: Integrity, Adaptable, Charismatic, Communicative, Humane, Goal-Focused and Decisive (Medcof & Holzinger, 2007).

In noticing that none of the categories were significantly different, the authors postulated that perhaps it was because respondents were identifying with the global, market-oriented business market and not their culture of origin (Medcof & Holzinger, 2007). As the gaming community is also made up of people from around the globe, using remote technology and avatars which can camouflage obvious cultural markers, perhaps MMORPG players will also identify with the global, game-oriented culture and not their culture of origin.

Research Method

Participants

A web-based survey was pre-tested with gamers and adjusted according to their feedback, taking into consideration fatigue and distractions. Target subjects consisted of people who play

MMORPGs, are 18 years of age or older, Canadian or American and have work experience (defined as paid employment). The number of possible respondents number in the millions based on current demographic data for active subscribed gamers in North America.

The survey invite was distributed via the internet, using social media. It was posted on the researchers' blog; on Facebook and Linked In, and sent via Twitter with the hashtags #MMORPG, #WoW, #LoL, #letsplay and #gamers. The survey link was posted on "Reddit" and several chat-room forums specifically for gamers.

Respondents were asked only to participate if they were 18 years of age or older, were a Canadian or an American, played MMORPGs and had some paid employment work experience, past or present. There were 687 people who started the survey, and 256 who fully completed it.

Table 1

Participant Demographics

Gender	Valid Percent
Male	79.9
Female	20.1
Birth year	
1994 and sooner	18.5
1989-1993	31.2
1984-1988	19.8
1979-1983	9.7
1978 and prior	18.9
Game Played	
World of Warcraft	78.8
Guild Wars	6.2
Final Fantasy	2.9
All Others	12.1
Currently Employed	
Yes	76.3
No	23.7
Years of Work	

Experience	
0-5 years	40.6
6-10 years	21.6
11-15 years	13.7
16-20	9.2
More than 20 years	14.9

For those who indicated gender, 79.9% were male. The bulk of respondents (79.2%) were born in 1979 or earlier, making them 35 years of age or younger. The average age of respondents was between 26 and 29 years of age. The vast majority (N330) representing 78.8% said World of Warcraft is their most frequently played game.

In terms of work: 76.3% of respondents were currently employed. A large number (40.6% (128) had 5 years or less of work experience; 21.6% had 6-10 years of work experience and 13.7% had 11-15 years of experience. Almost 15% had more than 20 years of work experience. Years of work experience was positively correlated to age.

Table 2

Average Number of Hours Played

Average Number of Hours Played Per Week	Percentage Responded
0-10	21.16
11-20	35.93
21-30	22.36
31-40	11.78
41 or more	8.78

Almost 43% of respondents played more than 20 hours a week, which is the equivalent of a part-time job in Canada. In total, almost 79% played an average of more than 10 hours a week.

Table 3

Type of Play

Game Play	Currently Employed	Currently Unemployed
Average % solo play	46.49	46.93
Average % team play	35.12	35.73
Average % lead team in game	18.39	17.34

The percentage of time spent playing solo, as a team player and as a leader was not significantly different (t-tests $p < .05$) whether employed or not as follows: 47% solo, 36% team player and 17% as a leader.

Measures

Leader prototypes

To gain insight into leadership prototypes, we used a scale from prior quantitative research on cross-cultural leadership (Medcof & Holzinger, 2007). This scale was informed by the GLOBE study (House et al., 2004), but had the addition of elements such as desire to win, adaptability and expertise, which were not explicit in previous scales. Given the mechanics of MMORPGs (games that you win or lose) and the profile of gamers as described by previous researchers, this scale was attractive for this research. The instrument makes sense for this research because it includes task-focused behaviours (i.e. procedural, directive, goal focused) as well as items that are more people-focused such as (charismatic, humane, servant). Therefore, it is broad enough to cover aspects of entry-level leadership roles, i.e. those expected of supervisors and team leaders, and is not limited to the attributes found at strategic/executive level leadership. Table 1 displays which items are tied to which leadership category.

In this study, we asked about both “*at work*” and “*in-game*” leadership characteristics, using a duplicate question but instructing the respondent to think of an effective leader either in

the game or, at work. Attributes were listed alphabetically and five choices on a scale were given: Not Important, Somewhat Important, Uncertain, Important or Very Important.

Game Play Variables

Respondents were asked which MMORPG they play most often, and given a list of popular games to choose from, and an open category of Other. The average hours per week of game play was asked, in increments from 0-10, 11-20, 21-30, 31-40 and more than 41 hours per week. Respondents were asked what percentage of their weekly game play was solo, what percentage as a team player and what percentage as a team leader. The total time had to equal 100% playing time.

Work Experience Variables

Respondents were asked how many years of work experience they had, with work experience defined as paid employment, including full-time, part-time, seasonal, contract and other forms of job arrangements. Response choices were 0-5 years, 6-10 years, 11-15 years, 16-20 years and more than 20 years. Another question asked the respondent if they were currently employed. Those who were employed were asked how many hours per week they work, from 0-10 hours per week, 11-20 hours per week, 21-30 hours per week, 31-40 hours per week and more than 41 hours per week. In Canada, full-time employment is usually defined as 40 hours per week.

Results/Findings

To address the research question, we compared in-subject ratings of each of the 69 items, looking for statistically significant differences between what was deemed most important from leaders, in-game and at work.

Table 4

Items Mean Ratings In-Game and At-Work Sorted by Category

Leadership Category and Items In-Game Ratings	Mean	Standard Deviation	Leadership Category and Related Items At Work Ratings	Mean	Standard Deviation	Valid N
Charismatic (G)	3.90	.69	Charismatic (W)	4.07	.69	243
Able to develop a vision (G)	3.86	1.12	Able to develop a vision (W)	4.39	.88	242
Charismatic (G)	3.86	1.17	Charismatic (W)	3.95	1.10	238
Courageous (G)	3.44	1.29	Courageous (W)	3.36	1.32	237
Enthusiastic (G)	4.20	.93	Enthusiastic (W)	4.14	.98	235
Likeable (G)	3.67	1.15	Likeable (W)	3.70	1.24	229
Positive (G)	4.25	.85	Positive (W)	4.40	.84	224
Sets example (G)	4.22	.94	Sets example (W)	4.50	.73	226
Procedural (G)	3.25	.75	Procedural (W)	3.49	.85	242
Avoids conflict (G)	3.62	1.32	Avoids conflict (W)	3.60	1.31	241
Avoids risk (G)	2.27	1.15	Avoids risk (W)	2.96	1.33	241
Defers to authority (G)	3.02	1.22	Defers to authority (W)	3.50	1.14	234
Follows instructions (G)	3.87	1.15	Follows instructions (W)	4.07	.99	237
Follows rules (G)	3.92	1.12	Follows rules (W)	4.01	1.09	237
Non-confrontational (G)	2.80	1.34	Non-confrontational (W)	3.17	1.39	227
Sacrifices themselves for mission (G)	3.12	1.40	Sacrifices themselves for mission (W)	3.13	1.39	225
Integrity (G)	4.28	.64	Integrity (W)	4.47	.56	237
Has personal integrity (G)	4.32	.93	Has personal integrity (W)	4.54	.74	235
Honest (G)	4.33	.94	Honest (W)	4.47	.82	236
Responsible (G)	4.31	.81	Responsible (W)	4.64	.55	225

Treats everyone as an equal (G)	3.90	1.15	Treats everyone as an equal (W)	4.07	1.19	227
Trustworthy (G)	4.46	.73	Trustworthy (W)	4.58	.70	226
Humane (G)	3.92	.76	Humane (W)	4.19	.69	239
Cares about others in the game (G)	4.06	1.09	Cares about others at work (W)	4.34	.84	239
Generous (G)	3.21	1.26	Generous (W)	3.56	1.25	236
Kind (G)	3.59	1.31	Kind (W)	3.92	1.22	237
Patient (G)	4.20	.90	Patient (W)	4.20	.93	226
Respects others (G)	4.42	.79	Respects others (W)	4.63	.67	226
Supports others (G)	4.33	.80	Supports others (W)	4.38	.78	228
Understanding (G)	4.16	.89	Understanding (W)	4.36	.77	224
Directive (G)	3.86	.69	Directive (W)	4.13	.61	237
Disciplined (G)	4.15	.94	Disciplined (W)	4.28	.75	237
Has specific expertise (G)	3.76	1.18	Has specific expertise (W)	4.08	1.00	237
Persuasive (G)	3.51	1.19	Persuasive (W)	3.74	1.08	225
Provides Direction (G)	4.59	.62	Provides Direction (W)	4.60	.66	227
Well educated (G)	3.28	1.43	Well educated (W)	3.93	1.13	226
Determined (G)	3.94	.68	Determined (W)	3.73	.77	237
Competitive (G)	3.38	1.33	Competitive (W)	2.87	1.37	236
Decisive (G)	4.42	.78	Decisive (W)	4.33	.81	236
Determined (G)	4.28	.78	Determined (W)	4.12	.84	237
Strong willed (G)	3.66	1.17	Strong willed (W)	3.58	1.22	226
Goal Focused (G)	4.41	.50	Goal Focused (W)	4.44	.50	237
Goal-oriented (G)	4.25	.86	Goal-oriented (W)	4.37	.80	237
Has comprehensive knowledge (G)	4.35	.91	Has comprehensive knowledge (W)	4.32	.92	237
Intelligent (G)	4.17	.94	Intelligent (W)	4.32	.86	237
Knows teams goals (G)	4.55	.68	Knows teams goals (W)	4.58	.66	229
Committed to the team (G)	4.71	.58	Committed to the team (W)	4.55	.67	234
Organized (G)	4.28	.85	Organized (W)	4.41	.73	226
Understands their own role (G)	4.62	.61	Understands their own role (W)	4.54	.68	226
Communicative (G)	4.12	.57	Communicative (W)	4.34	.57	242
Avoids embarrassing others (G)	3.70	1.27	Avoids embarrassing others (W)	4.27	.99	241
Communicates well (G)	4.77	.45	Communicates well (W)	4.67	.65	236
Delegates (G)	3.93	1.04	Delegates (W)	4.22	.85	235
Listens to others (G)	4.21	.84	Listens to others (W)	4.41	.75	228
Offers feedback (G)	4.13	.93	Offers feedback (W)	4.39	.79	228

Servant (G)	3.45	.91	Servant (W)	3.62	.85	237
Democratic (G)	3.45	1.32	Democratic (W)	3.62	1.27	237
Loyalty (G)	4.13	.98	Loyalty (W)	4.17	.99	229
Modest (G)	2.87	1.32	Modest (W)	3.29	1.32	228
Shares emotions (G)	2.54	1.33	Shares emotions (W)	2.70	1.44	227
Shares information (G)	4.31	.93	Shares information (W)	4.26	1.00	226
Adaptable (G)	4.48	.45	Adaptable (W)	4.47	.54	244
Adapts to change (G)	4.67	.65	Adapts to change (W)	4.58	.65	242
Collaborates with others (G)	4.56	.73	Collaborates with others (W)	4.39	.81	237
Flexible (G)	4.16	.92	Flexible (W)	4.31	.87	237
Learns from mistakes (G)	4.70	.49	Learns from mistakes (W)	4.64	.65	228
Open-minded (G)	4.24	.85	Open-minded (W)	4.32	.84	228
Willing to learn (G)	4.61	.60	Willing to learn (W)	4.62	.63	227
Status Conscious (G)	3.12	1.07	Status Conscious (W)	3.28	.91	238
Has formal authority (G)	3.35	1.45	Has formal authority (W)	3.95	1.10	238
Pays attention to differences in status (G)	3.49	1.27	Pays attention to differences in status (W)	3.47	1.31	226
Strict (G)	2.62	1.23	Strict (W)	2.78	1.27	226
Uncompromising (G)	2.62	1.38	Uncompromising (W)	2.77	1.42	226
Challenger (G)	3.55	.75	Challenger (W)	3.48	1.02	374
Challenges norms (G)	3.56	1.20	Challenges norms (W)	3.55	1.22	237
Controls Emotions (G)	4.03	1.03	Controls Emotions (W)	4.18	.92	237
Independent (G)	3.35	1.29	Independent (W)	3.74	1.19	237
Outspoken (G)	3.28	1.24	Outspoken (W)	3.31	1.21	226
Takes risks (G)	3.38	1.24	Takes risks (W)	3.15	1.30	227

Reviewing Table 4 reveals the top 10 most important rated items for leadership in-game in descending order as: communicates well, committed to the team, learns from mistakes, adapts to change, understands their own role, willing to learn, provides direction, collaborates with others, knows team goals and is trustworthy.

The top 10 rated items for leaders at work, in descending order, are: communicates well, learns from mistakes, responsible, respects others, willing to learn, provides direction, adapts to change, knows team goals, trustworthy and committed to the team.

Looking at the mean ratings of broader leadership categories, sorted by descending order, we see these similarities: at the top of both lists: Adaptable, Goal-Focused, Integrity and Communicative; with Goal-Focused and Integrity switching places at position 2 and 3 (in-game vs. work).

A comparison of the mean scores for the 69 specific leadership characteristics, in terms of rank, between in-game to at-work shows the following:

- “communicates well” was rated in first position for both
- “learns from mistakes” was rated in 3rd position in-game and 2nd position at-work
- “committed to the team” was rated 2nd position in-game and 10th position at-work
- “respecting others” was rated 12th position in-game and 4th position at-work

Table 5 shows descending ratings and how they differed in-game and at-work as reported by G-W mean score, with a positive number G-W meaning the item scored higher at-work and a negative G-W number meaning it scored higher in-game. These items were ranked at least 10 points higher for at-work leadership: able to develop a vision, responsible, avoids embarrassing others, offers feedback, well-educated, has formal authority, sets example, cares about others at work and listens to others. For in-game leadership, the following items were ranked higher: determined, decisive, shares information, has comprehensive knowledge, collaborates with others, enthusiastic and competitive.

Table 5**Rank Difference by Item**

In-Game Rank	In-Game Items	At Work Rank	At-Work Items	Rank Difference (G-W)
42	Able to develop a vision (G)	19	Able to develop a vision (W)	23
18	Responsible (G)	3	Responsible (W)	15
45	Avoids embarrassing others (G)	32	Avoids embarrassing others (W)	13
34	Offers feedback (G)	21	Offers feedback (W)	13
60	Well educated (G)	47	Well educated (W)	13
57	Has formal authority (G)	46	Has formal authority (W)	11
25	Sets example (G)	14	Sets example (W)	11
35	Cares about others in the game (G)	25	Cares about others at work (W)	10
26	Listens to others (G)	16	Listens to others (W)	10
58	Independent (G)	49	Independent (W)	9
12	Respects others (G)	4	Respects others (W)	8
31	Understanding (G)	24	Understanding (W)	7
63	Defers to authority (G)	57	Defers to authority (W)	6
61	Generous (G)	55	Generous (W)	6
17	Has personal integrity (G)	12	Has personal integrity (W)	5
23	Positive (G)	18	Positive (W)	5
69	Avoids risk (G)	65	Avoids risk (W)	4
38	Delegates (G)	34	Delegates (W)	4
21	Organized (G)	17	Organized (W)	4
44	Has specific expertise (G)	41	Has specific expertise (W)	3
64	Modest (G)	61	Modest (W)	3
65	Non-confrontational (G)	62	Non-confrontational (W)	3
13	Fair (G)	11	Fair (W)	2
53	Democratic (G)	52	Democratic (W)	1
32	Disciplined (G)	31	Disciplined (W)	1
29	Intelligent (G)	28	Intelligent (W)	1
49	Kind (G)	48	Kind (W)	1
9	Knows teams goals (G)	8	Knows teams goals (W)	1
3	Learns from mistakes (G)	2	Learns from mistakes (W)	1
51	Persuasive (G)	50	Persuasive (W)	1
7	Provides Direction (G)	6	Provides Direction (W)	1
10	Trustworthy (G)	9	Trustworthy (W)	1
6	Willing to learn (G)	5	Willing to learn (W)	1
1	Communicates well (G)	1	Communicates well (W)	0

36	Controls Emotions (G)	36	Controls Emotions (W)	0
30	Flexible (G)	30	Flexible (W)	0
15	Honest (G)	15	Honest (W)	0
41	Follows instructions (G)	42	Follows instructions (W)	-1
22	Goal-oriented (G)	23	Goal-oriented (W)	-1
59	Outspoken (G)	60	Outspoken (W)	-1
68	Shares emotions (G)	69	Shares emotions (W)	-1
66	Strict (G)	67	Strict (W)	-1
67	Uncompromising (G)	68	Uncompromising (W)	-1
43	Charismatic (G)	45	Charismatic (W)	-2
62	Sacrifices themselves for mission (G)	64	Sacrifices themselves for mission (W)	-2
4	Adapts to change (G)	7	Adapts to change (W)	-3
37	Seeks input (G)	40	Seeks input (W)	-3
40	Treats everyone as an equal (G)	43	Treats everyone as an equal (W)	-3
33	Loyalty (G)	37	Loyalty (W)	-4
48	Avoids conflict (G)	53	Avoids conflict (W)	-5
54	Courageous (G)	59	Courageous (W)	-5
39	Follows rules (G)	44	Follows rules (W)	-5
46	Likeable (G)	51	Likeable (W)	-5
24	Open-minded (G)	29	Open-minded (W)	-5
50	Challenges norms (G)	56	Challenges norms (W)	-6
52	Pays attention to differences in status (G)	58	Pays attention to differences in status (W)	-6
16	Supports others (G)	22	Supports others (W)	-6
28	Patient (G)	35	Patient (W)	-7
47	Strong willed (G)	54	Strong willed (W)	-7
56	Takes risks (G)	63	Takes risks (W)	-7
2	Committed to the team (G)	10	Committed to the team (W)	-8
5	Understands their own role (G)	13	Understands their own role (W)	-8
55	Competitive (G)	66	Competitive (W)	-11
27	Enthusiastic (G)	38	Enthusiastic (W)	-11
8	Collaborates with others (G)	20	Collaborates with others (W)	-12
14	Has comprehensive knowledge (G)	27	Has comprehensive knowledge (W)	-13
19	Shares information (G)	33	Shares information (W)	-14
11	Decisive (G)	26	Decisive (W)	-15
20	Determined (G)	39	Determined (W)	-19

Table 6
Paired Samples Test: Significant Differences

LEADERSHIP CATEGORY	In-game G Mean	In-Game SD	At-work W Mean	At-Work SD	Mean Diff G-W	T-stat	Sig Level
Determined	3.9437	.69235	3.7321	.77143	.21167	4.682	.000
Challenger	3.5531	.75666	3.4784	1.01843	.07473	2.020	.044
Goal-focused	4.4315	.44864	4.4427	.50170	-.01111	-.385	.701
Adaptable	4.4997	.41685	4.4738	.54101	.02589	.863	.389
Charismatic	3.9391	.65209	4.0675	.69264	-.12845	-3.723	.000
Procedural	3.2690	.72364	3.4864	.84612	-.21738	-4.825	.000
Integrity	4.3234	.62476	4.4713	.56329	-.14789	-4.263	.000
Humane	4.0359	.68615	4.1902	.69477	-.15433	-4.007	.000
Directive	3.8740	.65815	4.1265	.60991	-.25253	-6.806	.000
Communicative	4.1421	.53628	4.3402	.56964	-.19807	-6.031	.000
Servant	3.4850	.74969	3.6173	.84937	-.13235	-3.345	.001
Status Conscious	3.0014	.93560	3.2766	.90765	-.27521	-5.407	.000

As shown in Table 6: Two of the 12 leadership categories were found to be more important in-game (G) than at-work (W) as indicated by a positive mean difference ($p < .05$): Determined and Challenger. Two of the 12 showed no significant difference: Goal-Focused and Adaptable. The remaining leadership categories all show higher importance for effective leadership at-work than in-game: Charismatic, Procedural, Integrity, Humane, Directive, Communicative, Servant and Status Conscious.

Looking at Paired Samples for specific leadership characteristics, Table 4 shows the seven items which rated higher in-game (G) than at-work (W), sorted by which leadership category they are part are. Table 5 shows the 31 items that rated higher for at-work leadership effectiveness (W), and which leadership category they are part of.

Table 7**Paired Samples Test: Higher In-Game**

LEADERSHIP CATEGORY and Attribute	In-game G Mean	In-Game SD	At-work W Mean	At-Work SD	Mean Diff G-W	T-stat	Sig Level
ADAPTABLE							
Collaborates with others	4.56	.721	4.39	.816	.165	2.912	.004
CHALLENGER							
Takes risks	3.38	1.245	3.31	1.299	.249	2.995	.003
DETERMINED							
Competitive	3.41	1.302	2.88	1.372	.532	5.838	.000
Decisive	4.45	.729	4.33	.806	.119	2.090	.038
Determined	4.30	.741	4.12	.835	.181	3.153	.002
GOAL FOCUSED							
Committed to the team	4.75	.515	4.55	.675	.202	4.326	.000
Understands their own role	4.65	.549	4.54	.683	.113	2.517	.013

Table 8**Paired Samples Test: Higher At-Work**

LEADERSHIP CATEGORY and Attribute	In-game G Mean	In-Game SD	At-work W Mean	At-Work SD	Mean Diff G-W	T-stat	Sig Level
CHALLENGER							
Controls Emotions	4.00	1.044	4.18	.922	-.181	-2.606	.010
Independent	3.32	1.284	3.74	1.195	-.419	-4.918	.000
GOAL FOCUSED							
Goal-oriented	4.24	.888	4.37	.801	-.134	-2.063	.040
Organized	4.27	.862	4.41	.726	-.133	-2.323	.021
Intelligent	4.16	.925	4.32	.857	-.156	-2.684	.008
CHARISMATIC							
Able to develop a vision	3.90	1.134	4.39	.878	-.490	-5.976	.000
Positive	4.23	.866	4.40	.841	-.170	-2.862	.005
Sets examples for others	4.24	.934	4.50	.049	-.259	-4.232	.000
COMMUNICATIVE							
Avoids embarrassing others	3.72	1.245	4.26	.988	-.548	-5.972	.000
Delegates	4.00	.974	4.22	.854	-.221	-3.560	.000
Offers feedback	4.11	.956	4.39	.792	-.285	-4.348	.000
Listens to others	4.20	.872	4.41	.755	-.211	-3.764	.000
PROCEDURAL							
Avoids risk	2.28	1.164	2.96	1.331	-.683	-7.056	.000

Defers to authority	3.11	1.198	3.50	1.138	-.386	-4.506	.000
Follows instructions	3.92	1.123	4.08	.991	-.153	-2.419	.016
Non-confrontational	2.80	1.341	3.19	1.386	-.391	-4.009	.000
HUMANE							
Cares about others	4.07	1.111	4.34	.845	-.272	-3.348	.001
Understanding	4.17	.893	4.35	.776	-.181	-3.272	.001
Kind	3.62	1.300	3.92	1.225	-.301	-3.599	.000
Generous	3.33	1.257	3.55	1.257	-.212	-2.689	.008
Respects others	4.44	.798	4.62	.673	-.185	-3.143	.002
INTEGRITY							
Has personal integrity	4.33	.969	4.53	.745	-.204	-3.138	.002
Responsible	4.34	.820	4.63	.554	-.291	-5.409	.000
Honest	4.33	.968	4.47	.817	-.136	-2.185	.030
STATUS CONSCIOUS							
Has formal authority	3.24	1.403	3.94	1.099	-.704	-7.659	.000
Uncompromising	2.56	1.391	2.77	1.423	-.214	-2.491	.013
DIRECTIVE							
Has specific expertise	3.80	1.175	4.08	1.003	-.278	-3.672	.000
Persuasive	3.52	1.180	3.74	1.076	-.218	-2.723	.007
Well-educated	3.19	1.453	3.92	1.125	-.733	-8.423	.000
SERVANT							
Modest	2.92	1.338	3.29	1.324	-.367	-4.475	.000
Shares emotions	2.54	1.308	2.69	1.440	-.152	-2.061	.040

Table 10: Correlations GminW

Correlations																				
Pearson Correlation																				
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>
1	Average hours played per week	1	-.124*	-.129*	-.223**	.137**	.170**	-.157**	0.105	0.025	.157*	0.093	0.067	0.047	0.09	0.104	0.064	.170**	-0.009	.127*
2	Years of work experience	-.124*	1	.433**	.113*	-0.066	-0.076	.874**	0.051	.185**	0.051	0.076	-.128*	-0.068	-0.121	-0.081	0.024	-0.1	0.054	-0.076
3	Hours worked per week	-.129*	.433**	1	0.104	-0.105	-0.022	.378**	0	0.025	0.021	0.016	0.015	-0.092	-0.124	-0.114	0.039	-0.119	0.005	-0.038
4	Average percentage solo play	-.223**	.113*	0.104	1	-.590**	-.525**	.203**	-0.02	0.041	0.008	-0.019	-0.07	-.186**	-0.065	-0.086	0.002	-0.03	0.025	-0.066
5	Average percentage team play	.137**	-0.066	-0.105	-.590**	1	-.170**	-.154**	0.03	-0.068	-0.047	-0.007	0.03	.144*	0.014	0.039	0.011	0.063	0.033	0.053
6	Average percentage lead team in game	.170**	-0.076	-0.022	-.525**	-.170**	1	-0.099	-0.006	0.019	0.041	0.033	0.062	0.095	0.073	0.073	-0.014	-0.027	-0.07	0.028
7	Birth Year	-.157**	.874**	.378**	.203**	-.154**	-0.099	1	0.066	.190**	0.062	0.104	-.148*	-0.086	-0.091	-0.093	0.088	-0.043	0.066	-0.063
8	Charismatic_GminW	0.105	0.051	0	-0.02	0.03	-0.006	0.066	1	.197**	.404**	.442**	.260**	.303**	.364**	.361**	.424**	.385**	.151*	.344**
9	Procedural_GminW	0.025	.185**	0.025	0.041	-0.068	0.019	.190**	.197**	1	.245**	.342**	0.072	0.054	.209**	.396**	.262**	.166**	0.106	0.09
10	Integrity_GminW	.157*	0.051	0.021	0.008	-0.047	0.041	0.062	.404**	.245**	1	.592**	.288**	0.077	.314**	.434**	.416**	.402**	0.064	.212**
11	Humane_GminW	0.093	0.076	0.016	-0.019	-0.007	0.033	0.104	.442**	.342**	.592**	1	.135*	0.016	.287**	.430**	.397**	.407**	-0.046	.250**
12	Directive_GminW	0.067	-.128*	0.015	-0.07	0.03	0.062	-.148*	.260**	0.072	.288**	.135*	1	.287**	.398**	.302**	.237**	.257**	.325**	.257**
13	Determined_GminW	0.047	-0.068	-0.092	-.186**	.144*	0.095	-0.086	.303**	0.054	0.077	0.016	.287**	1	.463**	0.125	.158*	.362**	0.051	.343**
14	GoalFocused_GminW	0.09	-0.121	-0.124	-0.065	0.014	0.073	-0.091	.364**	.209**	.314**	.287**	.398**	.463**	1	.379**	.183**	.472**	.192**	.341**
15	Communicative_GminW	0.104	-0.081	-0.114	-0.086	0.039	0.073	-0.093	.361**	.396**	.434**	.430**	.302**	0.125	.379**	1	.341**	.453**	0.063	.230**
16	Servant_GminW	0.064	0.024	0.039	0.002	0.011	-0.014	0.088	.424**	.262**	.416**	.397**	.237**	.158*	.183**	.341**	1	.274**	.181**	.291**
17	Adaptable_GminW	.170**	-0.1	-0.119	-0.03	0.063	-0.027	-0.043	.385**	.166**	.402**	.407**	.257**	.362**	.472**	.453**	.274**	1	-0.02	.358**
18	StatusCons_GminW	-0.009	0.054	0.005	0.025	0.033	-0.07	0.066	.151*	0.106	0.064	-0.046	.325**	0.051	.192**	0.063	.181**	-0.02	1	.137*
19	Challenger_GminW_GminW	.127*	-0.076	-0.038	-0.066	0.053	0.028	-0.063	.344**	0.09	.212**	.250**	.257**	.343**	.341**	.230**	.291**	.358**	.137*	1
Correlation is significant at the 0.05 level (2-tailed).																				
* Correlation is significant at the 0.01 level (2-tailed).																				

Leadership Preferences and Other Variables

The average hours played per week is slightly positively correlated to these in-game choices: Procedural, Determined, Status-Conscious and Challenger. Playing time is negatively correlated to Communicative at-work ($r=-.135, p<.05$).

Average percentage of time spent as a leader in the game has a small positive correlation with the following in-game characteristics: Charismatic ($r= .117, p<.05$); Determined ($r=.116, p<.05$); Adaptable ($r=.120, p<.05$); Challenger ($r=.118, p<.05$). There is just one positive correlation between time spent as a leader in the game and an at-work choice, and that is Charismatic ($r= .142, p<.05$).

Birth year is slightly negatively correlated to the following in-game categories: Determined ($r=-.189, p<.01$), Directive ($r=-.184, p<.01$) and Status Conscious ($r=-.164, p<.01$). In other words, the younger the respondent, the less likely they would choose those items as necessary for effective in-game leadership. For at-work choices, birth year is negatively correlated to Procedural ($r=-.166, p<.05$) and positively correlated to Status Conscious ($r=.219, p<.01$) and Communicative ($r=.128, p<.05$).

In terms of leadership categories in-game, years of work experience is positively correlated to Integrity ($r=.147, p<.01$) and Humane ($r=.112, p<.05$), and negatively correlated to Determined ($r=-.142, p<.05$), Directive ($r=-.123, p<.05$) and Status Conscious ($r=-.117, p<.05$). In terms of at-work leadership categories, years of work experience is positively correlated to

Integrity ($r=.163, p<.05$) and Communicative ($r=.162, p<.05$) and negatively correlated to Procedural ($r=-.152, p<.05$) and Status Conscious ($r=-.175, p<.01$).

Hours worked per week is slightly correlated to Integrity in-game ($r=.141, p<.05$). At-work categories which are correlated to hours worked per week are Goal-Focused ($r=.197, p<.01$), Integrity ($r=.147, p<.05$) and Communicative ($r=.147, p<.05$).

Leadership Preferences Gap between In-game and At-work and Other Variables

Five of the demographic variables were correlated to the in-subject leadership preference gaps (GminW).

The average hours played per week is positively correlated to the Integrity gap ($r=.157, p<.05$); the Adaptable gap ($r=.170, p<.01$) and the Challenger gap ($r=.127, p<.05$).

Both years of work experience and birth year are positively correlated to the Procedural gap as follows: work experience ($r=.185, p<.05$) and birth year ($r=.190, p<.05$). Years of work experience is negatively correlated to the Directive gap ($r=-.128, p<.05$). Birth year is negatively correlated to the Directive gap ($r=-.148, p<.05$).

The Determined gap was correlated to time spent playing solo or on a team. Average percentage time spent in team play is positively correlated to the Determined gap ($r=.144, p<.05$) and time spent in solo play is negatively correlated ($r=-.186, p<.01$).

Discussion

Our research question is: Do MMORPG gamers hold an implicit leadership theory which they carry from in the game to the workplace?

By asking respondents to choose the importance level of leadership characteristics, we were able to compare within-group data, and also look for significant correlations between item choices and our demographic variables regarding work and game play.

The survey results show that gamers are able to differentiate between in-game leadership and at-work leadership. Generally, MMORPG valued different characteristics from in-game leaders than their work leaders. This contradicts the assertion of the oft-quoted Seriosity study which predicted that "...mangers will need to adjust their styles accordingly for workers used to playing in a gaming environment" (IBM & Seriosity Inc., 2007, p. 6).

Rather than fall into the effects of the game and unconsciously be trapped by conditioning, they appear to be able to interpret and distinguish fantasy from the real-world. This fits with the view of Professor Henry Jenkins, a noted researcher on the cultural effects of technology and the use of video games for teaching. He believes that gamers are not unconsciously shaped by games without regard for previous experience and cognitive activity (Jenkins, 2006). "And they tend to dismiss anything they encounter in fantasy or entertainment that is not consistent with what they believe to be true about the real world" (Jenkins, 2006, p.212). Jenkins argues that rather than reshaping behaviour, games provide a personal space for learners to make meaning. We should not assume that players have no rational thinking or that

they are playing outside of their existing cultural context (Jenkins, 2006). Certainly, this seems the case in this study.

While many of the characteristics chosen were the same or not significantly different, there were a few items that vary. The items that scored differently and where the Mean Score G-W is high seem easily explained by the mechanics of the game and how guild leadership differs from workplace supervision. If we look at what is different about playing an MMORPG – as compared to working under a supervisor in the typical North American workplace – a few mechanics of the game come to mind.

How is MMORPG gaming different than the workplace? We have outlined some of the important mechanics of the game. Perhaps the biggest and most obvious difference is that playing the game is a voluntary, unpaid activity, and a gamer on a team can choose to leave the game at any time. There is a heavy turnover rate in membership, and players taking a more casual approach to membership. These cohesion problems are attributed to the game mechanism of leveling (Ducheneaut, Yee, Nickell, & Moore, 2006) and perhaps not surprising in a leisure activity. This could explain why “commitment to the team” was ranked as the 2nd most important item in-game, but only 10th at work. Committed or not, a work supervisor is less likely to up and quit on a moment's notice. A supervisor's sudden decampment is less common at work and replacement not as simple as recruiting a new volunteer player.

“Communicates well” was rated the single most important item both in-game and at-work. Yet the way in which information is processed within a game emphasizes cybernetic

processing (Lord & Maher, 1993), which is not a description of most business environments. During a game, players will communicate via speaking into live microphone or by typing text into chat boxes on screen. As the action is in play, the team is constantly facing imminent danger and options for movement; therefore the in-game conversation tends to focus on what to do next. This requires a high degree of collaboration applied in a decisive, risk-taking, immediately competitive arena. In the game, there is information consistently available on-screen. This highly transparent level of information is one aspect of gaming environment that many real-world companies are already striving to emulate (Reeves, Malone, & O'Driscoll, Leadership's Online Labs, 2008). And yet, the best examples of real-world teams who might communicate that way would be emergency (medical, military) or crisis intervention teams. Communication, then, is critical both in-game and at-work. In the game, though, communication must support taking risks, being decisive and winning the competition.

Elements in the list which rank higher at-work logically appear to be related to healthy face-to-face interaction, and may require time to build inside more stable relationships. Charismatic, Integrity, Humane and Servant all were more important at-work than in-game. Items which speak to treating others compassionately and with dignity were rated higher for at-work leaders: "avoids embarrassing others", "cares about others at work", "kind", "generous", "respects others", "modest", "shares emotions", "honest", "positive". These traits are reminiscent of *Emotional Intelligence*, a set of behavioural skills that many believe are even more important than a leaders' technical ability. According to researcher Goleman (1998) Emotional Intelligence

skills includes self-awareness, self-regulation, motivation, empathy and social skills (Goleman, 2004). He goes on to say that empathetic leaders are attuned to the subtleties of body language, and take time to listen to subordinates. Socially skilled leaders may appear idle as they connect with others while at work. "People seem to know intuitively that leaders need to manage relationships effectively; no leader is an island" (Goleman, 2004, p12).

One major difference in-game is that players in the game are using avatars (imaginary figures) to represent themselves on-line in a virtual world, which affords a degree of separation and protection. In real-life, our leaders know who we are, and their experience of us can affect more than the outcome of the game. Workplace leaders have the authority and power to decide what we earn, and even if we keep our job. Given the impact of the power differentials, it seems natural that employees would like Humane and Charismatic leaders at work. Conversely: "In online games, perhaps because players are represented by avatars and are not face-to-face with each other, heated disagreements are common and accepted" (IBM & Seriosity Inc., 2007, p.28).

As noted in the Seriosity study, the ability to fearlessly challenge each other is way that gamers show commitment to the team. In fact, it is a protocol of the gaming community to share all information you have, including if it challenges the leaders' approach, while still respecting the role of the leader to decide. "Thankfully, chatting in World of Warcraft is easier and more casual than anything you'd encounter in the real world" (World of Warcraft Beginners' Guide, n.d.).

Gamers' awareness of this difference between on-line and in-person interaction was supported by a study of guild leaders who felt that their offline, in-person guild meetings required more confidence and held more risk of social embarrassments than whenever they are in-game (Ee & Cho, 2012).

However, at work, direct challenges to our leaders are still rare. At work, formal authority is conferred by position in the hierarchy, and there is evidence that we unquestionably obey our workplace authority figures (Pfeffer, 1992). Employees learn that it is often frowned upon to challenge those who are higher up the chain of command. When this is true, having a leader that listens and delegates is desirable. Notably, within the leader-type of Challenger, respondents ranked "controls emotions" higher for at-work leaders, perhaps hoping that confrontations would be minimized. Self-regulation is one of the traits of an emotionally-intelligent leader (Goleman, 2004). Collaboration, at work, often becomes compromise as people seek solutions that will not upset relationships. In fact, a well-regarded management training model advises that compromising means finding a win-win solution through skilled negotiation at work (Covey, 1989).

In-game leaders are often asked to lead because they have more experience in the game or play at a higher level which could account for the importance of the item "has comprehensive knowledge". In-game research on the social dynamics in *WoW* bears this out: The work involved to maintain guild membership is not well-supported by the game design. Leaders need to recruit players of identical experiences with complementary skills, and there are few in-game resources

provided to leaders to help to do this properly (Ducheneaut, Yee, Nickell, & Moore, 2006).

Perhaps as a nod to this reality of the shortcomings of the game we see the item “understands their own role” was rated higher in-game than at-work.

Conversely, in the work-place, the most experienced person may not be promoted to a leadership position, as promotions are often due to internal politics and personal reputation (Pfeffer, 1992). This may be why “well-educated” - which provides some objective standard of competency in the real-world - is more highly valued at-work. Other items rated higher at-work were “has formal authority” and “has specific expertise”.

Ee and Cho's (2012) qualitative study of leadership in MMORPGs suggested that of the four MIT Sloan leadership capabilities, only inventing – which mean turning goals into reality – needs to be held confidently within guild leaders'. They posit that self-efficacy is important in the game because unsuccessful team coordination can “wipe out” an entire team. They say the other four capabilities – sense-making, visioning and relating – are not as likely to have such drastic negative repercussions in the game (Ee & Cho, 2012).

It is perhaps not surprising then that the item “able to develop a vision” rose a dramatic 23 spots in rank importance from in-game to at-work. In the workplace, the ability to develop a vision is considered a crucial skill of excellent leaders, and is often included in leadership competency models. Organizational researchers Kouzes and Posner teach that “Inspiring a Shared Vision” is one of five crucial leadership practices (Kouzes & Posner, 1987).

In game play many missions, or quests, are short-lived and unfold rapidly – therefore, in conversation, the purpose of the action of the team must be clearly and articulated by the leader and quickly understood by the team. “You need to accomplish specific goals in order to complete quests” (World of Warcraft Beginners' Guide, n.d.). However, in business, leaders may be setting objectives that take several years to attain. Depending on the size and structure of the business operation, one employee’s activity is not always clearly aligned to a larger, strategic business objective. In complex human systems of work, which lack the logical mechanisms that drive game developers, it can be difficult for employees to see the relationship between what they are currently doing and the goal. So, at work, the ability of a leader to articulate the future vision becomes important. Some argue that the ability to establish a common goal at work is a trademark of an ethical leader (Northouse, 2013).

That’s not to say that in-game leaders don’t also seek alignment in the team, but this could be attributed to the diversity of gamers which can slow down play or cause mission failures through misunderstandings and conflict. Leaders in-game may be required to interpret the values and goals of their team (Siitonen, 2009). Perhaps this replaces the need to be “able to develop a vision”. In this small qualitative study of Finnish players, it was noted that in-game conflicts can start small and escalate, often due to differences of interpretation. Leaders are needed who will be direct and firm said the respondents. In support of this, Williams and colleagues (2006) found that *WoW* group members were happiest when their leaders applied

clear policies and procedures. They said, “There was clear evidence that the majority of players wanted a firm leader to enforce norms and policies” (Williams, et al., 2006).

Replayability, an inherent feature in gaming, means that players learn by taking risks. Experimental learning happens when something fails and the players try a different approach. As noted earlier, there is not the same consequence of failing in the game as in real life (Lisk, Kaplanali, & Riggio, 2012). This game mechanism may account for why “take risks” was rated higher in game, and Procedural items like “avoids risks”, “follows instructions” and “defers to authority” was higher in at-work ratings.

It appears from our study that MMORPG players value different things from leaders in-game than at work, and that these values are driven by the mechanics of the game and what makes it different than real work life. We might conclude that experienced Guild Masters should not assume that they can use the same skills with their teams at work and get the same successful results as in-game. Business leaders are well-advised to work on their interpersonal skills and ability to inspire others, whether that be through online simulations or with a coach or mentor who “replays” with them their real-world challenges.

Limitations

Our survey used a “within-subjects” design, which does not require a large pool of participants and can reduce errors caused by individual differences between different groups. Each survey respondent served as their own baseline.

A weakness of this kind of design is that subject's behaviour on later questions can be impacted by their responses on earlier questions, especially in the case where we have asked the same question twice (for in-game and at work). Answering the question first for in-game exposed respondents to all 69 of the leadership characteristics, so when they answered for at-work they knew the list, and may have responded differently to each item. The order of asking a question may make a significant difference, due to learning, sensitization and other psychological effects. Segmenting the questions and using questions in-between the longer duplicates may have helped re-set the respondent and helped create an independent evaluation of in-game and at work leaders (Charness, Gneezy, & Kuhn, 2012).

Fatigue is another drawback of within-subject design, and in this case, participants may have become tired due to the long list of characteristics they were asked to complete. The high rate of incomplete surveys may point to this.

Ecological validity refers to the realism of experimental methods, materials and settings in order to mirror environments where the findings might have immediate practical applicability (Highhouse, 2009). The purpose of this research was to test a hypothesis, and it has limited immediate applicability to organizational situations. *WoW* is not specifically designed to facilitate leadership, so it is limited in terms of generalizability of these finding to online training. One would have to study on-line games specifically designed to develop leadership skills to see if the softer skills valued at work can be taught in on-line games. Further surveys which focus directly

on gamers' expectations of their leaders at work, and field work such as focus groups in the workplace would contribute to these findings.

Implications and Future Research

Although we have discussed some possible explanations for our findings, gamer focus groups in the workplace could help to interpret these survey results and test some of the ideas discussed here. Replicating this study using a different leadership framework – such as the Sloan model, or Seriosity/IBM's modified version, or the Multifactor Leadership Questionnaire (MLQ) - would be another way of testing for an implicit leadership theory. Another option would be to conduct this research using the GLOBE culture survey, which would apply cross-country cultural aspects to a culture that is global but exists online.

The United States army has long used multiplayer online games to teach leaders (Lisk, Kaplancali, & Riggio, 2012). In Prax's research he notes that guild leadership style is most like the style of the Swedish Air Force during a mission, and leadership demonstrated in volunteer organizations (Prax, 2010). Due to the similarities (and because many gamers play military-type games) it would be interesting to conduct an in-person study of gamers who are also military personnel, and those who work in the non-profit sector, to see if what is valued in those more similar work environments is closer to leadership expectations in-game. Another possible use for these results is to add to the discussion of the younger generations' expectations in the workforce. Commonly called "Millennials", this group roughly born between 1977 and 2005,

have been the focus of researcher's attention in terms of work values and employment preferences (Ng, Lyons, & Schweitzer, 2012). Many gamers are of this generation as noted earlier, as the advent and growing popularity of MMORPGs corresponds with this cohort.

In 2006 a research team examined the ways digital media were transforming young people's lives. Henry Jenkins and his team discussed the rise of what they labeled "participatory culture" in our society. This type of culture is characterized by low barriers to engagement, mentorship where more experienced members pass their knowledge along to novices, and people feel some degree of social connections with each other (Jenkins, 2006). MMORPGs are considered to have contributed to the early phases of participatory culture, with the introduction of the game EverQuest in 1999, and followed by the increasingly widespread broadband Internet connections. Today blogs and player forums proliferate (and were helping in distributing our research survey). Experienced, higher-level gamers answer questions and help newbies, and players converse with the game's developers on-line and at conferences to give input into design. A broader study could examine the leadership expectations in participatory cultures, of which MMORPGs form a part.

In a conversation with Jenkins about participatory cultures, researcher Carpentier suggests that our current view of leadership, in Western cultures, does not fit the logic of democracy. He believes that leadership practices will need to be redefined to fit more horizontal forms of organization, such as found in a participatory culture (Jenkins & Carpentier, *Theorizing participatory intensities: A conversation about participation and politics*, 2013). However, until

businesses and workplaces share more characteristics with the mechanics of MMORPGs, it is perhaps naïve to think that gamers who work implicitly want something different from their leader than the rest of the population.

Works Cited

Ancona, D., Malone, T. W., Orlikowski, W. J., & Senge, P. M. (2007, February). In Praise of the Incomplete Leader. *Harvard Business Review*, 85(2), pp. 92-100.

Barnett, J., & Coulson, M. (2010). Virtually Real: A Psychological Perspective on Massively Multiplayer Online Games. *Review of General Psychology*, 14(2), 167-179.

Bartle, R. (1996). Hearts, Clubs, Diamonds, Spades: Players who Suit MUDs. *The Journal of Virtual Environments*, 1. Retrieved November 5, 2013, from <http://www.mud.co.uk/richard/hcdfs.htm>

Beck, J. C., & Wade, M. (2004). *Got Game: How the Gamer Generation is Reshaping Business Forever*. Boston, Massachusetts: Harvard Business School Press.

Billieux, J., Van der Linden, M., Achab, S., Khazaal, Y., Paraskevopoulos, L., Zullino, D., & Thorens, G. (2013). Why do you play World of Warcraft? An in-depth exploration of self-reported motivations to play online and in-game behaviours . *Computers in Human Behaviour*, 29, 103-109.

Brown, J. S., & Thomas, D. (2008, February). The Gamer Disposition. *Harvard Business Review*, p. 17.

- Charness, G., Gneezy, U., & Kuhn, M. A. (2012). Experimental methods: Between-subject and within-subject design. *Journal of Economic Behaviour & Organization*(81), 1-8.
- Covey, S. R. (1989). *The 7 Habits of Highly Effective People*. New York: Simon and Schuster.
- DeMarco, M., Lesser, E., & O'Driscoll, T. (2007). *Leadership in a distributed world: Lessons from online gaming*. IBM Institute for Business Value, IBM Global Business Services. Somers, NY: IBM.
- Dickey, M. D. (2011). World of Warcraft and the impact of game culture and play in an undergraduate game design course. *Computers & Education, 56*, 200-209.
- Ducheneaut, N., & Moore, R. J. (2004). The Social Side of Gaming: A Study of Interaction Patterns in a Massively Multiplayer Online Game. *Proceeding of the 2004 ACM Conference on Computer Supported Cooperative Work* (pp. 360-369). New York, NY: ACM.
- Ducheneaut, N., Yee, N., Nickell, E., & Moore, R. (2006). "Alone Together?" Exploring the Social Dynamics of Massively Multiplayer Online Games. *CHI 2006 Proceedings* (pp. 407-416). Montreal, Quebec: CHI.
- Ee, A., & Cho, H. (2012). What makes an MMORPG Leader? A Social Cognitive Theory-Based Approach to Understanding the Formation of Leadership Capabilities in Massively Multiplayer Online Role-Playing Games. *Eludamos. Journal for Computer Game Culture, 6*(1), 25-37.

Entertainment Software Association. (2012). *2012 Sales, Demographic and Usage Data:*

Essential Facts about the Computer and Video Game Industry. ESA. Retrieved October 7, 2013, from <http://www.theESA.com>

Geel, I. V. (2014). *MMO Data.* Retrieved March 14, 2014, from MMOData.blogspot:

<http://mmodata.blogspot.ca/>

Gerstner, C., & Day, D. V. (1994). Cross-Cultural Comparison of Leadership Prototypes.

Leadership Quarterly, 52(2), 121-134.

Griffiths, M., Davies, M. N., & Chappell, D. (2004). Online computer gaming: a comparison of adolescent and adult gamers. *Journal of Adolescence*(27), 87-96.

Herodotou, C., Kambouri, M., & Winters, N. (2011). The role of trait emotional intelligence in gamers' preferences for play and frequency of gaming. *Computers in Human Behavior*, 27, 1815-1919.

Hettrick, J. (2012, January 1). Online Video Games: Leadership Development for the Millennial College Student. *Dissertation & Theses Collection.* Retrieved from

<http://scholarsarchive.jwu.edu/dissertations/AAI3542761>

Highhouse, S. (2009, July). Designing Experiments That Generalize. *Organizational Research Methods*, 12(3), 554-566.

House, R. J., & Aditya, R. N. (1997). The Social Scientific Study of Leadership: Quo Vadis?

Journal of Management, 23(1), 409-473.

- House, R., Javidan, M., Hanges, P., & Dorfman, P. (2002). Understanding cultures and implicit leadership theories across the globe: an introduction to project GLOBE. *Journal of World Business, 37*, 3-10.
- IBM & Seriosity Inc. (2007). *Virtual Worlds, Real Leaders: Online games put the future of business leadership on display*. IBM, Global Innovaton Outlook (GIO). Armonk, NY: IBM.
- Ives, B., & Junglas, I. (2008, September). APC Forum: Business Implications of Virtual Worlds and Serious Gaming. *MIS Quarterly Executive, 7*(3), 151-156.
- Jang, Y., & Ryu, S. (2010). Exploring game experiences and game leadership in massively multiplayer online role-playing games. *British Journal of Educational Technology, 42*(4), 616-623.
- Jenkins, H. (2006). The War Between Effects and Meaning: Rethinking the Video Game Violence Debate. In H. Jenkins, *Fans, Bloggers, and Gamers* (pp. 208-221). New York: New York University Press.
- Jenkins, H., & Carpentier, N. (2013). Theorizing participatory intensities: A conversation about participation and politics. *Convergence: The International Journal of Research into New Media Technologies, 19*(3), 265-286.
- Kelly, S. K. (2012). *Running with Newbies: Understanding On-line Communities Through the Eyes of Second-Generation Gamers*. University of Southern California, Philosophy (Communication). Shawna Kathleen Kelly.

- Kouzes, J. M., & Posner, B. Z. (1987). *The Leadership Challenge: How to get extraordinary things done in organizations*. San Francisco, California, USA: Jossey-Bass Inc.
- Kowert, R., Griffiths, M. D., & Oldmeadow, J. A. (2012). Geek or Chic? Emerging Stereotypes of Online Gamers. *Bulletin of Science, Technology & Society*, 32(6), 471-479.
- Lisk, T. C., Kaplancali, U. T., & Riggio, R. E. (2012). Leadership in Multiplayer Online Gaming Environments. *Simulation & Gaming*, 133-149.
- Lord, R. G., & Maher, K. J. (1993). *Leadership & Information Processing: Linking Perceptions and Performance*. New York, NY: Routledge.
- Lyons, S. T., Ng, E. S., & Schweitzer, L. (2011). *Generational Career Shift: Summary Report of Key Findings*. Guelph, ON, Canada: Canadian Electronic Library.
- McGonigal, J. (2011, January 22). *Be a gamer, save the world*. Retrieved from The Wall Street Journal: <http://online.wsj.com/news/articles>
- McMullin, J. A., Comeau, T. D., & Jovic, E. (2007). Generational affinities and discourses of difference: a case study of highly skilled information technology workers. *The British Journal of Sociology*, 58(2), 297-316.
- Medcof, T., & Holzinger, I. (2007). Prototypical Leadership Scale Development: A Comparison of Leadership Prototypes in Canada, China and India. *ASAC 2007*, (pp. 175-186). Ottawa.
- Melymuka, K. (2008, May 12). Revenge of the Gamers! World of Warcraft and other games are honing tomorrow's business leaders. *ComputerWorld*, pp. 30-31.

- mmohuts. (n.d.). *The First MMORPG: Early History of the Genre*. Retrieved March 16, 2014, from mmohuts: <http://mmohuts.com/editorials/the-first-mmorpg>
- Mysirlaki, S., & Paraskeva, F. (2012). Leadership in MMOGs: A Field of Research on Virtual Teams. *Electronic Journal of e-Learning*, 10(2), 223-234.
- Ng, E. S., Lyons, S. T., & Schweitzer, L. (2012). *Managing the New Workforce: International Perspectives on the Millennial Generation*. Cheltenham, Glos, UK: Edward Elgar Publishing Limited.
- Northouse, P. G. (2013). *Leadership Theory and Practice* (Sixth ed.). (P. G. Northouse, Ed.) Los Angeles: SAGE .
- PC Gamer. (2012, December 15). *Infographic shows \$13 billion spent worldwide on MMOs in 2012*. Retrieved from PC Gamer: <http://www.pcgamer.com/2012/12/15/mmo-infographic>
- Pfeffer, J. (1992). *Managing with Power: Politics and Influence in Organizations*. Boston, MA, United States: Harvard Business School Press.
- Prax, P. (2010). Leadership Style in World of Warcraft Raid Guilds. *Nordic DiGRA 2010*. Authors & Digital Games Research Association (DiGRA).
- Przybylski, A. K., Rigby, C. S., & Ryan, R. M. (2010). A Motivational Model of Video Game Engagement. *Review of General Psychology*, 14(2), 154-166.
- Reeves, B., & Malone, T. (2007). *Leadership in Games and at Work: Implications for the Enterprise of Massively Multiplayer Online Role-playing Games*. Seriosity, Inc.

- Reeves, B., Malone, T. W., & O'Driscoll, T. (2008, May). Leadership's Online Labs. *Harvard Business Review*, 86(5), pp. 62-66.
- Rowlands, T. (2012). *Video Game Worlds: Working at Play in the Culture of EverQuest*. Walnut Creek, CA, USA: LeftCoast Press.
- Schein, E. H. (1999). *The Corporate Culture Survival Guide*. San Francisco, CA, United States of America: John Willey & Sons, Inc.
- Schyns, B., & Meindl, J. R. (Eds.). (2005). *Implicit Leadership Theories: Essays and Explorations*. Greenwich, Conn, USA: Information Age Publishing.
- Shaw, A. (2011). Do you identify as a gamer? Gender, race, sexuality, and gamer identity. *new media & society*, 14(1), 28-44.
- Siitonen, M. (2009). Conflict Management and leadership communication in multiplayer communities. *Breaking New Ground: Innovation in Games, Play, Practice and Theory*. Authors & Digital Games Research Association (DiGRA).
- Snodgrass, J. G., Dengah II, H. F., Lacy, M. G., & Fagan, J. (2013). A formal anthropological view of motivation models of problematic MMO play: Achievement, social and immersion factors in the context of culture. *Transcultural Psychiatry*, 50(2), 235-262.
- Taylor, T. (2006). *Play Between Worlds: Exploring Online Game Culture*. Cambridge: MIT Press.
- Tseng, F.-C. (2011). Segmenting online gamers by motivation. *Expert Systems with Applications*, 38, 7693-7697.

- Twenge, J. M. (2006). *Generation Me: Why Today's Young Americans Are More Confident, Assertive, Entitled - and More Miserable Than Ever Before*. New York, New York: Free Press.
- Twenge, J. M. (2010). A Review of the Empirical Evidence on Generational Differences in Work Attitudes. *Journal of Business Psychology*, 25, 201-210.
- Williams, D., Ducheneaut, N., Xiong, L., Zhang, Y., Yee, N., & Nickell, E. (2006, October). From Tree House to Barracks: The Social Life of Guilds in World of Warcraft. *Games and Culture*, 1(4), 338-361.
- Williams, D., Yee, N., & Caplan, S. E. (2008). Who plays, how much and why? Debunking the stereotypical gamer profile. *Journal of Computer-Mediated Communication*, 13, 993-1018.
- World of Warcraft Beginners' Guide*. (n.d.). Retrieved March 9, 2014, from <http://us.battle.net/WoW/en/game/guide/>
- Xanthopoulou, D., & Papagiannidis, S. (2012, April 17). Play online, work better? Examining the spillover of active learning and transformational leadership. *Technological Forecasting & Social Change*, pp. 1328-1339.
- Yates, S. J., & Littleton, K. (1999). Understanding Computer Game Cultures: a situated approach. *Information, Communication & Society*, 2(4), 566-583.
- Yee, N. (2006a, January). The Labor of Fun: How Video Games Blur the Boundaries of Work and Play. *Games and Culture*, 1(1), 68-71.

- Yee, N. (2006b, June). The Demographics, Motivations, and Derived Experiences of Users of Massively Multi-User Online Graphical Environments. (M. Press, Ed.) *Presence: Teleoperators & Virtual Environments*, 15(3), pp. 309-329.
- Yee, N. (2006c, November 6). Motivations for Play in Online Games. *CyberPsychology & Behaviour*, 772-775.
- Yee, N. (2013, October 16). *Player Demographics*. Retrieved from The Daedalus Gateway: http://www.nickyee.com/daedalus/gateway_demographics.html
- Yee, N., Ducheneaut, N., Shiao, H.-T., & Nelson, L. (2012). Through the Azerothian Looking Glass: Mapping In-Game Preferences to Real World Demographics. *CHI 2012* (pp. 2811-2815). Austin, Texas: CHI.