

Demographic Factors and Playing Variables in Online Computer Gaming

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ABSTRACT

Despite the growing popularity of online game playing, there has been no primary survey of its players. Therefore, an online questionnaire survey was used to examine basic demographic factors of online computer game players who played the popular online game *Everquest* (i.e., gender, age, marital status, nationality, education level, occupation). The survey also examined playing frequency (i.e., amount of time spent playing the game a week), playing history (i.e., how long they had been playing the game, who they played the game with, whether they had ever gender swapped their game character), the favorite and least favorite aspects of playing the game, and what they sacrifice (if anything) to play the game. Results showed that 81% of online game players were male, and that the mean age of players was 27.9 years of age. For many players, the social aspects of the game were the most important factor in playing. A small minority of players appear to play excessively (over 80 h a week), and results suggest that a small minority sacrifice important activities in order to play (e.g., sleep, time with family and/or partner, work, or schooling).

INTRODUCTION

DESPITE THE RISE of computer games as a leisure phenomenon, there has been relatively little research into this area. Most of the research to date has tended to concentrate on the more negative aspects such as excessive play and addiction,¹⁻⁵ the effects of playing aggressive games,^{6,7} and the medical and psychosocial consequences.^{2,8} Furthermore, a majority of the research to date has concentrated on adolescent players.^{9,10} There have been a few psychologically based studies on personality and computer game play,^{11,12} although these have been exploratory. Thus, the image of a typical gamer (and the pastime of computer gaming) is seen as socially negative and remains firmly within a youth sub-culture.

Massively Multiplayer Online Role-Playing Games (MMORPG) are the latest Internet-only gaming experience. These are typically represented by large, sophisticated, detailed, and evolving worlds based

in different narrative environments. The nature of these games is to offer a rich three-dimensional world that is populated by thousands of players. This game form is a fully developed multi-player universe with an advanced and detailed world (both visual and auditory). Examples of such games are *Everquest* (heroic fantasy), *Anarchy Online* (futurist science fiction), and *Motor City Online* (classic car racing). There has been very little research into these online gaming communities, although a number of disciplines are beginning to generate research from different perspectives including the psychological,^{13,14} sociological,¹⁵ and economic.¹⁶ However, apart from the work of Griffiths et al.¹³ much of this work is "gray literature" that has not been peer-reviewed and is self-published on the Internet. Therefore, such data must be treated with some caution. For instance, Bartle¹⁵ has studied multi-user virtual environments (MUDs) and has classified players into four different sub-groups (i.e., achievers, explorers, killers, and socializers) formulated from the inter-relationship

of two dimensions of playing style: action versus interaction, and world-oriented versus player-oriented. He concluded that each of these four sub-groups views the playing of MUDs differently. More specifically, MUDs were games (like chess and tennis) to achievers, pastimes (like reading and gardening) to explorers, sports (like hunting, shooting, and fishing) to killers, and entertainment (like television and going to nightclubs) to socializers.

The most popular (and largest) MMORPG is Sony Online Entertainment's *Everquest*, which reports over 400,000 people playing it.¹⁷ On each server, there are typically around 2,000 players at any one time. Most of these servers (39 out of 44) are based in the United States, although the two latest servers are based in Europe. The game allows a range of identities (and genders) to be explored by playing a character created by the player. Character identity creation typically involves a number of dimensions such as gender, race, profession, and deity alignment (morality). Such choices can directly influence the style of play and the reception of the character to the game. As a result, each character can be played as good or evil, a friendly or unfriendly race, and a profession that is seen as a team player or more of a loner. Once in the virtual world, the players can either group or play solo. The social communication is via on-screen text. This can either be done privately (between two individuals or within a group of up to six players) or across the "zone," which includes all players in the zone. Zones are different areas within the game on the same server. Inter-zonal communication is possible through Guilds and private text messages.

Although computer gaming is now seen as very much in the mainstream of cultural pastimes (no longer only part of the youth culture), very little is known about the psychology of online gaming. There is very little data even on the basics. With the advent of the new, visually rich, virtual online worlds, an opportunity exists to explore the psychology both of players who engage in this new form of entertainment as well as the psychology of players within the world itself. Before such research can be undertaken, there is a need to establish some "benchmark" data on which future research can build. At present, we know very little about who plays online computer games.

Using Bartle's¹⁵ classification of MUD players, Andreasen¹⁸ surveyed players from all major online gaming communities. Among the 4,380 *Everquest* players polled (3,672 males; 618 females), 34% were explorers, 25% were achievers, 23% were socializers, and 15% were killers. As reported, over a third of all *Everquest* players (34%) were explorers

in the game. However, this is too vague to be meaningful. One of the main criticisms is that a player has to do all of these actions (exploring, killing, socializing) if they want to advance in the game. In a number of unpublished studies on his website, Yee¹⁴ has collected demographic data about *Everquest* players (with sample sizes ranging from 1,240 to 2,470). The main findings he reported were that 84–88% of players are male; the average age of players is 25.6 years old; 30% of players are students and 36% work in the IT business; players spend an average of 22.4 h playing the game a week; and 25% play the game with their partner.

In an attempt to establish some benchmark data, a previous study by Griffiths et al.¹³ collated data from two online gaming fan sites for *Everquest* players—*Everlore* (www.everlore.com) and *Allakhazam* (everquest.allakhazam.com). Each of these sites conducts a regular poll where one question is asked. Griffiths et al.¹³ examined every poll question on both fan sites from their inception in 1999 until June 2002. Socio-demographic data showed that the majority of players were male (approximately 85%). Over 60% of players were older than 19 years. The vast majority of the players were North American (73% American and 8% Canadian), and players had a wide variety of educational backgrounds. Thirty-three percent of the sample was still at an educational establishment, including those currently in middle school (3%), high school (14%), college (14%), and graduate school (2%). Of those who were in employment, 23% had a high school diploma, 33% had an undergraduate diploma, 7% had a Masters degree, and 2% had a doctoral degree. The data provided evidence that the game clientele was very much an adult profile and suggested a different picture than the stereotypical image of an adolescent online gamer.

Chappell (unpublished data) has also collated secondary demographic data from a variety of different games (i.e., *Return to Castle Wolfenstein*, *Counterstrike*, *Quake 3*, *Black and White*, and *Asheron's Call*). Results showed that some games appear to attract younger clientele (such as the first person shooter game *Return to Castle Wolfenstein*, the humorous single player game *Black and White*, the role playing game *Asheron's Call*, and the combat tournament game *Counterstrike*). For instance, 71% of *Counterstrike* players are 21 years and below ($n = 1,197$); 80% of *Black and White* players are 25 years and below (unknown sample size); 51% of *Return to Castle Wolfenstein* players are 25 years and below ($n = 327$); and 55% of *Asheron's Call* players are 25 years and below ($n = 1,266$). Other games such as the ultra-violent combat game *Quake 3* were perhaps

unsurprisingly dominated (93%) by males ($n = 151$). Furthermore, this game had 56% players under 20 years of age ($n = 2,021$).

Griffiths et al.¹³ acknowledged that the major weakness of their research was its reliance on secondary data. Each individual question from the poll sites had a different sample. Therefore, the rationale for the following study was to collect primary data from one sample of online game players. As this study was exploratory, there were no specific hypotheses. However, it was envisaged that findings from this study using primary data would be similar to that found in the previous study using secondary data. The next section outlines the areas that were examined.

MATERIALS AND METHODS

Participants

A total of 540 online gamers who played *Everquest* took part in the survey. The participants were a self-selected sample consisting of those individuals who completed an online questionnaire at *Everquest* fan sites. Since one of the study's main aims was to explore demographic factors, further details about participants (e.g., age, gender) are given in the results section.

Design and materials

An online questionnaire survey (using an "in-house" designed "auto-format") was used to examine basic demographic factors of online computer game players (i.e., gender, age, marital status, nationality, education level, occupation). It also asked questions relating to playing frequency (i.e., amount of time spent playing the game a week), playing history (i.e., how long they had been playing the game, who they played the game with, whether they had ever gender swapped their game character), the favorite and least favorite aspects of playing the game, and what they sacrifice (if anything) to play the game.

Procedure

Since there has been little research on who plays online computer games, an exploratory online questionnaire was publicized and placed at three online fan sites of one of the most popular online computer games (*Everquest*). To target *Everquest* players, the sites chosen were www.everlore.com, www.eq.the-safehouse.org, and www.eqvault.ign.com. The *Ever-*

lore site was used as the prime target because of its larger audience and previous feedback from pilot work by the authors. *Everlore* is a subsite within the rpglore.com family of websites dedicated to supporting the role-playing Internet games. The other sites chosen were also dedicated *Everquest* sites. Each fan site had similar structured features (e.g., help guide, maps, forums). These forums are a convenient way to communicate information between players (like a pin-up notice board for everyone to see). It is here that the authors established contact with the players. Once players visited the hyperlink address to the questionnaire, they simply clicked their selections and pressed the submit button at the end of the page. The data were then captured to allow it to be analyzed in SPSS format for convenience.

Each hour hundreds of messages are passed on amongst the players within the forum. This means that older messages are "pushed to the back" and are not in the forefront. Therefore, to keep the postings up to date, the authors had to go back every few days to each site to refresh the advertisement for participant recruitment. This was done by adding a new message to whichever discussion was taking place. All players were informed how long the form would take, what the project was about, and what was being investigated. Anyone who wished to quit the survey or not be part of it could do so by simply shutting down the browser. Advice on filling the form out was also given along with lots of examples. An E-mail address of the third author was also supplied for any queries concerns. All players were guaranteed anonymity and confidentiality.

RESULTS

Demographic variables

Gender. Of the 540 players who filled out the questionnaire, 431 were male (81%) and 99 were female (19%). Ten participants did not specify their gender.

Age. Two-thirds of players (67%) were under 31 years of age (8% of the sample were aged 12–17 years, with 59% of the sample aged 18–30 years). The remainder were aged 31–40 years (22%), 41–50 years (8%), and over 50 years (3%). The mean age of the sample was 27.9 years of age ($SD = 8.7$ years).

Player nationality. Over three-quarters of the players (77%) were from North America (United States and Canada). European players accounted for one-fifth of the sample (20%), with almost two-

thirds of these coming from the United Kingdom (12% of total players). A full list of player nationality by both country and continent are found in Tables 1 and 2.

Marital status. Over half of players were single (55.5%), with a further 1.5% being separated and 3% divorced. Just under a third of players were married (30%), with another 10% living with their partner.

Education. Most players were current university students studying for an undergraduate qualification or already had one (29%). A significant minority had postgraduate qualifications (13%). Of those without any kind of higher education, 23.5% had college schooling up to 19 years of age, and 20% had schooling up to 16 years of age. A further 14% claimed they received no education after 11 years of age with the remaining few claiming they had no formal education whatsoever (0.5%).

Occupation. Just over a quarter of all players had jobs in the information technology/computing sector (28.7%), and one fifth of players were students

TABLE 1. NATIONALITY OF ONLINE GAME PLAYERS WHO PLAY EVERQUEST BY COUNTRY ($N = 540$)

Country	Frequency	Percentage
United States	376	69.6
United Kingdom	65	12.0
Canada	38	7.0
Australia	12	2.2
Germany	9	1.7
Sweden	7	1.3
France	4	0.7
Denmark	3	0.6
Netherlands	3	0.6
New Zealand	3	0.6
Norway	3	0.6
Switzerland	3	0.6
Austria	2	0.4
Belgium	2	0.4
Ireland	2	0.4
Italy	2	0.4
Finland	1	0.2
Guam	1	0.2
Japan	1	0.2
Luxembourg	1	0.2
Pakistan	1	0.2
Singapore	1	0.2

TABLE 2. NATIONALITY OF ONLINE GAME PLAYERS WHO PLAY EVERQUEST BY CONTINENT ($N = 540$)

Continent	Frequency	Percentage
North America	414	76.7
Europe	108	20.0
Australasia	15	2.8
Asia	3	0.6

(20%). These were by far the two most prevalent occupational categories. The remainder consisted of professionals (e.g., lawyer, doctor) (7.4%), armed/emergency forces (6.9%), education (3.3%), finance (2.4%), health (e.g., nurses) (1.3%), homemaker (1.3%), manual work (e.g., gardener, laborer) (0.7%), office work (e.g., secretarial) (4.3%), self-employed (3.5%), service industries (e.g., retail, restaurants), (3.9%), and tradesmen (e.g., plumber, electrician) (2.8%). There were also those who listed other jobs not on the list (6.5%) and those who were unemployed (6.9%).

Game playing variables

Playing history. Players were asked how many months they had been playing *Everquest*. The mean time they had been playing was 27.2 months ($SD = 12.14$ months). More specifically, players reported having played for 6 months or less (8.1%), 7–12 months (9.4%), 13–18 months (7.9%), 19–24 months (17%), 25–30 months (15%), and 31–36 months (24%). A further 18.6% claimed to have been playing over 3 years. Players were also asked if they played *Everquest* with friends. Over three-quarters (75.6%) claimed that they did. Another question asked if they played with their partner, and over one quarter (25.2%) claimed they did. Players were asked if they had ever played a different gendered character. Results indicated that 60% of players had at some time gender swapped while gaming online.

Play frequency. Players were asked how many hours (on average) they played *Everquest* each week. The mean playing time per week was 25 h ($SD = 14$ h). More specifically, players reported a wide range of hours played per week. These were up to 5 h (3.2%), 6–10 h (12.9%), 11–15 h (11.7%), 16–20 h (24.5%), 21–25 h (9.5%), 26–30 h (14.6%), 30–40 h (14.5%), 40–50 h (5.4%), and over 50 h (4%). It was also noted that four individuals in this latter category claimed to play for over 70 h a week.

Favorite features of online gaming. Players were asked what their single most favorite feature of playing *Everquest* was. By far the most popular reason was that *Everquest* is a social game (24.6%). Other popular favorite reasons included being able to group together with others (10.2%), being part of a Guild membership (10%), and the fact that there was no end to the game (10%). Other lesser favorite features included assisting others who were less experienced (6.9%), being able to play solo (6.5%), being able to use magic (5.7%), being able to engage in hand to hand combat (5.4%), being able to role-play a character (5.2%), and the player versus player options (3.3%). Other more idiosyncratic reasons accounted for the remaining 12.2% of responses:

- “Resolving high end combat problems when situation goes bad”
- Taking on leadership roles
- Character advancement
- “The best way for family, friends to stay in touch”
- “Being able to see how your work matures in the form of your character”
- “Advancement in relation to others surpassing you”
- “Raiding big things with Guild and friends”
- “Interacting with others where you are only judged by what you do or say”
- Tactics
- Trade skills
- Strategic thinking
- Guild competition/politics
- “Buying and selling stuff for profit”
- “The ability to achieve and have pride in the character”
- “Something for me and my wife to do together”
- “The depth and challenge of being successful at the game”

Least favorite features of online gaming. Players were asked what their single least favorite feature of playing *Everquest* was. Almost one-fifth of players (18.7%) claimed that their least favorite part was the immaturity of other players. This was closely followed by selfishness of other players (15.4%). Other least favorite features included players who wasted time in “camping” (i.e., sitting around waiting for action; 14.8%), slow levelling for “casual gamers” (13.3%), player versus player options (13.1%), the death penalty (i.e., losing experience; 5.9%), hand-to-hand combat (4.4%), solo play (3.7%), role-playing a character (1.9%), team play (1.7%), assisting others who are less

experienced (1.7%), and being able to use magic (0.2%).

The remaining 5.2% of players gave other reasons:

- “Balance issues” (amongst other races/classes)
- “Being ignored”
- “No-drop stuff” (i.e., items that cannot be bought or sold)
- Game bugs
- Lack of customer support

Sacrificing other activities to play. Players were asked what part of their life they sacrificed most in order to play *Everquest*. Over one-fifth of the players (22.8%) said that nothing in their life was sacrificed in order to play the game. Just over one quarter (25.6%) said they sacrificed another hobby or pastime. In order to play the game, other players said they sacrificed sleep (18.1%), work and/or education (9.6%), socializing with friends (10.4%), socializing with partner (5.4%), and family time (4.6%). Other sacrifices identified included physical fitness, house duties, dating, playing other computer games, watching television, and reading. One player commented “How can something be a sacrifice if you enjoy doing it?”

DISCUSSION

As far as the authors are aware, this is the first academic study of online computer game playing to be published that has collected primary data. The findings reported here do seem to correspond with the study of secondary data previously collected by the authors¹³ and in other studies by Yee (unpublished data). These findings are compared in more detail below.

Gender differences of game players have been reported many times in different empirical studies.^{3-5,10} With regards to the online computer game medium, the conclusion is the same—games are predominantly played by males. In *Everquest*, the male population in this study accounts for 81% of the sample. This is similar to the 85% reported by Griffiths et al.¹³ (Table 3) and the 84% to 88% reported by Yee.¹⁴ However, there appears to be increasingly more female gamers, with almost 20% of the players being female. This may (in part) be due to the game itself. Griffiths⁸ argued that most computer games are designed *by* males, *for* other males. However, *Everquest* is a game that tries to reach a wide

TABLE 3. COMPARISON OF ONLINE GAMERS IN THE CURRENT STUDY AND IN GRIFFITHS ET AL. (2003)

	<i>Griffiths et al. (2003)</i>		<i>Current study</i>	
Game played	<i>Everquest</i>		<i>Everquest</i>	
Year data collected	1999–2002		2002	
Sample sizes	range: 2,536–15,788		540	
Gender	Male	(85%)	Male	(81%)
	Female	(15%)	Female	(19%)
Age	Less than 13 years	(1%)	12 to 17 years	(8%)
	10 to 30 years	(71%)	18 to 30 years	(59%)
	31 to 40 years	(20%)	31 to 40 years	(22%)
	Over 40 years	(8%)	Over 40 years	(11%)
Nationality	North America	(81%)	North America	(76.7%)
	United Kingdom	(4%)	United Kingdom	(12%)
	Germany	(2%)	Germany	(1.7%)
	Sweden	(2%)	Sweden	(1.3%)
	France	(2%)	France	(0.7%)
	Australia	(2%)	Australia	(2.2%)
	All other countries	(7%)	All other countries	(5.4%)
Education level	Primary	(17%)	Primary	(13.9%)
	Secondary	(14%)	Secondary	(19.8%)
	Further	(23%)	Further	(23.5%)
	Higher	(33%)	Higher	(29.3%)
	Postgraduate	(11%)	Postgraduate	(12.8%)
	Other	(2%)	Other	(0.7%)
Play frequency (hours per week)	Up to 9 h	(8%)	Up to 10 h	(16%)
	10–20 h	(25%)	11–20 h	(36%)
	21–30 h	(25%)	21–30 h	(24%)
	31–40 h	(18%)	31–40 h	(14%)
	41–50 h	(9%)	41–50 h	(5%)
	Over 50 h	(15%)	Over 50 h	(5%)
Gender swapping ^a	Yes	(15.5%)	Yes	(60%)
	No (main character)	(84.4%)	No (any character)	(40%)
Favorite aspects of play	Social contact/grouping	(23%)	Social contact/grouping	(35%)
	Solo play	(26%)	Solo play	(6.5%)
	Guild membership	(10%)	Guild membership	(10%)
	Role playing	(5%)	Role playing	(5%)
	Player vs. player	(2%)	Player vs. player	(3%)
	Combat/killing	(2%)	Combat/killing	(5.5%)
	Other aspects	(32%)	Other aspects	(35%)
Least favorite aspects of play ^b	Slow advance for casual players	(14%)	Slow advance for casual players	(13%)
	Difficult to play solo	(11%)	Difficult to play solo	(4%)
	Death penalty	(13%)	Death penalty	(6%)
	Too much camping	(11%)	Too much camping	(15%)
	Helping inexperienced	(4%)	Helping inexperienced	(2%)
	Other aspects	(47%)	Other aspects	(60%)

^aThese questions were not the same. One asked whether the player had ever swapped the gender of their main character. The other asked if they had ever swapped gender at all.

^bThe two studies used different “forced choice” boxes; therefore, many of the answers were different.

audience, by allowing for preference of character. These characters can be of different gender, race, and religion. This may explain why females have responded positively to this style of game. Furthermore, the introduction of sites such as www.womengamers.com has also allowed for gaming to be more acceptable in the female arena.

It has been pointed out that computer games are no longer aimed at the adolescent audience.¹³ This study confirms such assertions, as the average age of players was nearly 28 years old. Almost two-thirds (59%) of players were aged between 18 and 30 years. There were approximately equal numbers of young adolescent players and those aged between 41 and 50 years. These findings are similar to those of Griffiths et al.,¹³ although there appears to be a slightly greater age spread. More specifically, the current study appears to have a greater percentage of both younger and older players (Table 3). The current study is also comparable to the findings of Yee,¹⁴ who reported the average age of players to be nearly 26 years of age.

Although *Everquest* is predominantly played by North Americans, there was clear evidence from this study that it is becoming a worldwide game. Over three-quarters of the players in this study were from the United States or Canada, but European countries accounted for one-fifth of all the players. Table 2 highlights that players come from a wide variety of countries including the United Kingdom, Australia, Germany, Sweden, France, Finland, Italy, New Zealand, Switzerland, Norway, Austria, and Belgium. The study also highlighted that there are a small (developing) number of Asian players on *Everquest*; these include Japan, Pakistan, and Guam. With the introduction of *Everquest Asia*, Sony is aiming to increase these numbers. The results found in this study very closely match those found in the previous study by Griffiths et al.¹³

This study showed that single people (55.7%) tend to predominate the computer gaming world. It could perhaps be speculated that having a partner or other commitments reduces the amount of time that an *Everquest* player can do other activities. *Everquest* is a game that requires a lot of dedication. Players must therefore "make time" to play this game. However, it was found that almost 30% of players were married. It could be that a people's partners will get involved with computer games so that they have a common interest. For instance, in this study just over a quarter of the participants played with their partners (i.e., 63% of all players with partners). Furthermore, Yee¹⁴ also reported that 25% of gamers play with their partner. Anec-

dotal evidence from Web forums suggests that it is females who tend to "play along" with their partners so that they have something else in common. *Everquest* also allows for marriages between characters, therefore characters can share common identity online (e.g., surname) as well as offline. Although some people play the game with their partners, there appear to be others who do not want their partners to be a part (particularly if they use the game as a form of escape). When personal relationships go through "bad patches," there is often a strain. The last thing they want is for their partners to be involved, as this is the very person that they are escaping from!

Educationally, the sample was fairly educated with over 42% of the sample with a higher education qualification (or currently studying to get one). The findings are very similar to the study by Griffiths et al.¹³ It could be the case that due to the relative complexity of the game, it tends to attract those of a high educational standing. The most popular occupations among this sample of *Everquest* players were those in the IT and computing sector (28.7%). This is perhaps unsurprising as a lot of people who play online games will also enjoy IT in general, and therefore would be naturally pre-disposed toward computers. These results are again similar to Yee¹⁴ who reported that 25% of players worked in IT. Students also accounted for a high proportion of gamers in this study (20%) although is lower than that reported by Yee (30%).¹⁴ Gaming has always been seen as a young adolescents' pastime. This is again unsurprising as computer games are very popular with this group. Furthermore, the flexible time structure of student study may facilitate this kind of game playing.¹⁹ Significant minorities of both professionals and those in the armed/emergency forces played this game. The motivation to play in these groups may be more complex in comparison to the student sub-population. Alongside the positive appeal of the game, individuals who face various life pressures may also play for escapist reasons and/or as a way of alleviating stress. An equal percentage of players said they were unemployed. This is a group who have multiple reasons for embracing the virtual world of an online computer game.

The playing histories of the participants were very interesting. *Everquest* was officially launched in 1999 in the United States. In the sample, over 20% claimed to have been playing the game for over 3 years. These are therefore gamers who have been playing beta releases of the game (beta release is a version of the game that is not finished in its final form as it still contains bugs and program-

ming errors). Therefore people can sign up to take part if they wish to do so. A large minority of players in this sample clearly did. *Everquest* is not like normal “stand alone” games¹³ and take a lot of dedication and time. The mean playing time per week (25 hours)—comparable to the 22.4 h a week reported by Yee¹⁴—suggests that a lot of time is invested by a majority of players. Players who play more than 30 h a week appear to be dedicated gamers. Nearly 15% claimed they played between 31 and 40 h a week. Furthermore, there were a large minority of players (9.3%) that claimed they played for more than 40 h per week (with a few claiming to play over 80 h a week). Previous research on adolescent computer game playing suggests anyone who commits this much time runs the risk of sacrificing other duties and perhaps may be a risk to addiction of the game.^{4,10} However, there may be differences between adults and adolescents in terms of excessivity, addiction, and the consequences.

In relation to gender roles, players were asked about gender swapping (i.e., had they ever swapped the gender of their character while playing the game). The results show that almost two-thirds of players (60%) had gender swapped at some point in their *Everquest* playing. The previous study by Griffiths et al.¹³ only examined whether players had ever swapped their main character. This led to a much lower percentage of gender swapping (Table 3). The introduction of game icons such as *Lara Croft* in *Tomb Raider* means it has become quite the norm for males to play female characters. Female characters in *Everquest* can take on a similar “cool” style role. Such characters challenge conventional real-life stereotypes of traditional female characters.

The biggest appeal for those that play online computer games is that they are social (although admittedly “social” might mean something different for different players). It is therefore not surprising that almost a quarter of the sample (24.6%) said that social contact with other players is their favorite feature of the game. When combined with “grouping,” over a third of the players favorite reasons for playing (35%) were for social reasons. This is a bigger figure than in the previous study by Griffiths et al.,¹³ who reported only 23%. Both studies’ findings directly contradict previous speculations that computer games are socially isolating. Other favorite parts of online playing (such as Guild membership) are also essentially social activities. The least favorite parts of online gaming are activities that could be described as others being anti-social or engaging in undesirable behaviors (e.g., immaturity of other players, selfishness of other players, time wasting by other players, “slow

levelling” by casual players). Socializing is clearly a key for many people who play *Everquest*. The findings also suggest there are many different reasons for playing *Everquest* and that some of these reasons are similar to the sub-groups of players outlined by Bartle¹⁵ and followed up by Andreasen.¹⁸

Three quarters of the sample claimed they play with real-life friends. This is a positive factor, indicating that those who engage in role playing games may no longer be associated with the introverted.¹¹ However, do players make friends within the game (online) and then out of the game (offline), or are they friends first (offline) and then play the game (online)? A quarter of the sample said that they did not play with real-life friends at all. The motivations for these players may be different (e.g., opportunity, escape).

Given the complexity of *Everquest*, the authors speculate that sacrifices have to be made if players want to be “serious” gamers. Although just over one-fifth of the sample said they sacrificed nothing in order to play the game, it was clear that many players seriously impinge on some aspect of their life in order to play *Everquest* at the level they do. Just over a quarter (25.6%) say that they sacrifice another hobby or pastime. This appears unproblematic as it is up to them what they spend their leisure time on. However, almost one-fifth of players sacrificed sleep in order to play the game. This is a potentially large number of players having their routines and daily life interrupted due to the lack of sleep the night before. Other activities that are sacrificed may also be problematic including the displacement of work and/or education, and sacrificing time with partner and/or family. Even with the limited data presented here, there is evidence that suggests some people play excessively, and (that in some cases) addiction may exist.

There are a number of limitations to the present study. This study was carried out on one particular online game (*Everquest*). Some may question whether the findings reported here have any validity to other types of online computer games. Obviously the kind of research outlined here needs to be at least replicated with other games (such as Microsoft’s *Asheron’s Call*). Other online games may attract different types of socio-demographic clientele. For instance, *Asheron’s Call* is seen by the *Everquest* community as easier and less demanding so is likely to appeal to the younger gamer. The data collated by Chappell (unpublished data) appears to confirm this; furthermore, most of this data appears to indicate that most other types of game (e.g., role playing games, first person shooters) appear to attract a younger clientele than those who play *Everquest*. However, generalizability may not be the key issue here. The issue is not how they can be transferred to other online games, but what basic

principles of behavior can we identify that represents the new contemporary Internet gamer. Secondly, the study used a self-selected sample. There is therefore an issue about representativeness. However, the self-selecting sample came from a highly motivated (and by definition Internet literate) population. The authors do not think that the sample is unrepresentative, particularly as there are strong similarities in results between this study and the previous one by Griffiths et al.¹³

Everquest, *Asheron's Call*, and *Ultima Online* are just a few of the MMORPG that are available. However, with more sophisticated and advanced technology, and with increased Internet speeds, MMORPG will become a very popular gaming format. There is clearly much research needed in this area of the gaming world, as there is little research even on the most basic aspects of online gaming.

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