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The "Lonely Gamer" Revisited

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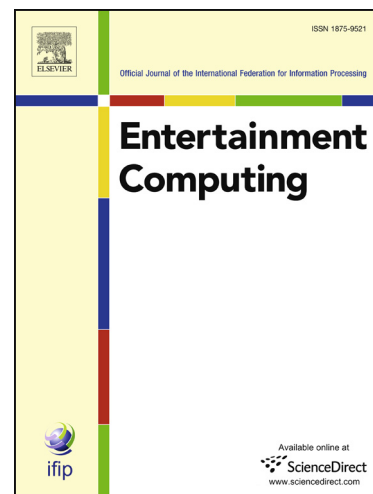Please cite this article as: D.J. Schiano, B. Nardi, T. Debeauvais, N. Ducheneaut, N. Yee, The "Lonely Gamer" Revisited, *Entertainment Computing* (2013), doi: http://dx.doi.org/10.1016/j.entcom.2013.08.002

Title

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Abstract

World of Warcraft (WoW) is a massively multiplayer online game (MMO) supporting rich and complex social interactions among over 8 million players worldwide. In this study, we explore implications of the pervasive "lonely gamer" stereotype, which portrays online gamers as socially isolated and addicted young people, usually male, with few real-life (RL) social ties. This is the first study to directly address the stereotype quantitatively, focusing on assessing the extent to which WoW players interact in the game with other people with whom they share a RL social relationship. Most previous studies of the interaction between online gaming and sociality have focused solely on either in-game or RL social interactions, without seriously taking into account today's

large and growing opportunities for hybrids of both. An online survey (in English and Chinese) collected data from 2865 WoW players from multiple world regions: Europe, Hong Kong, Taiwan, and the US. Consistently across regions, the large majority of respondents reported that they do play with others they know in RL (friends, family members, a spouse or romantic partner), and do not only play alone or just with others they know online. Moreover, sizable percentages of players in each region reported making new RL friends in the virtual world. These findings lend no support to the "lonely gamer" stereotype, but suggest instead that playing World of Warcraft may serve to enhance, rather than diminish, RL social interactions. This paper provides benchmark estimates of the prevalence of in-game sociality with RL friends, family members, spouses and partners, and co-workers for world regions not previously explored, and some intriguing cross-cultural patterns and issues for further research.

Keywords

World of Warcraft (WoW)
Massively Multiplayer Online Games (MMOs)
Social Online Games
Game Studies
Online Sociality
Virtual World

Highlights

- A large online survey explored the real life (RL) social landscape of World of Warcraft players across four global regional samples: Europe, Hong Kong, Taiwan, and the US.

- Benchmark estimates of the prevalence of RL sociality among WoW players are provided by region and gender; patterns of playing with friends, family and others are explored.

- Contrary to the "lonely gamer" stereotype, almost three-quarters of our respondents play with people they know in RL; moreover, about half have made RL friends in-game.

- Intriguing cross-cultural and gender patterns suggest the need for further research.

- These findings lend support to the view of World of Warcraft as a successful social platform for men and women across diverse regions of the globe.

Suggested Reviewers

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World of Warcraft (WoW) is a massively multiplayer online game (MMO) supporting rich and complex social interactions among over 8 million players worldwide. In this study, we explore implications of the pervasive "lonely gamer" stereotype, which portrays online gamers as socially isolated and addicted young people, usually male, with few real-life (RL) social ties. This is the first study to directly address the stereotype quantitatively, focusing on assessing the extent to which WoW players interact in the game with other people with whom they share a RL social relationship. Most previous studies of the interaction between online gaming and sociality have focused solely on either in-game or RL social interactions, without seriously taking into account today's large and growing opportunities for hybrids of both. An online survey (in English and Chinese) collected data from 2865 WoW players from multiple world regions: Europe, Hong Kong, Taiwan, and the US. Consistently across regions, the large majority of respondents reported that they do play with others they know in RL (friends, family members, a spouse or romantic partner), and do not only play alone or just with others they know online. Moreover, sizable percentages of players in each region reported making new RL friends in the virtual world. These findings lend no support to the "lonely gamer" stereotype, but suggest instead that playing World of Warcraft may serve to enhance, rather than diminish, RL social interactions. This paper provides benchmark estimates of the prevalence of in-game sociality with RL friends, family members, spouses and partners, and co-workers for world regions not previously explored, and some intriguing cross-cultural patterns and issues for further research.

1.0 Introduction and Rationale

Massively multiplayer online role-playing games (MMOs) comprise virtual landscapes with rich and varied opportunities for social interaction [1, 2, 3]. MMOs have grown tremendously in size and sophistication in recent years. In World of Warcraft (WoW), one of the most popular and important games, players adventure in a medieval-themed world, slaying monsters, practicing crafts such as herbalism, trading goods at an auction house, and engaging in diverse battles, quests, and contests. Over 8 million people play WoW worldwide [e.g., 4]. It is available in nine languages and is played even in places with poor Internet connectivity, such as Tashkent in Central Asia [5].

A great deal of research on World of Warcraft and related games clearly demonstrates that they support complex online social interactions among great numbers of players [e.g., 6, 7, 8, 9, 19, 11, and 13]. Yet the perception persists that they are "anti-social," attracting lonely people (in particular, young males), and enticing them to spend many hours in social isolation. It is still common "to imagine [players] as pasty, socially challenged loners" [14], or as troubled "addicts" seeking solace away from the real world [e.g., 15]. During the July 2011 shootings in Norway, the lonely gamer stereotype surfaced in an extreme form. A Reuter's news story on the shooter, Anders Breivik, reported that Breivik's attorney identified him as a loner who played video games (World of Warcraft, as it happened). The report stated: "Breivik's lawyer, Geir Lippestad, said his client was probably mad, but it was too early to say if the loner and computer game enthusiast would plead insanity at his trial" [15]. In an effort to quell the potentially violent activities of other such "loners," Coop Norway, one of Norway's largest retailers, removed 51 video games (including World of Warcraft) and weapon-like toys from its shelves [16]. As sociologist Stanley Cohen observed in the 1970s, Western societies are prone to periodic "moral panics" in which elements of popular culture are made visible and demonized [17]. In times of stress, such as the Norway crisis, stereotypes embodying putatively degenerate aspects of pop culture which normally dwell beneath the surface arise and become actionable. The Coop's retail strategy addressed the urge to restore a social order destabilized by a mass execution—an event linked in the minds of some to video games. Lippestad's contemplation of a narrative for his client's defense conjoined "insanity," "loner," and "computer game enthusiast."

As more and more of us spend more and more time in digital games, it becomes increasingly important to examine the connection between gaming and real-life sociality. (We use "real life" (RL) here as gamers do, to indicate a relationship or

experience with a significant offline component [3]). Most previous studies of the interaction between online gaming and sociality have focused solely on either online or RL social interactions. All too often, online interaction is simply assumed to be detrimental to RL sociality, in the absence of any serious investigation. Thus, while some researchers have characterized MMOs as virtual "third places," fostering rich sociability among online acquaintances in an informal setting [10, 13], others maintain that time spent online serves to displace "real" sociality [18, 19; see also 20]. This last argument is sometimes called the "bowling alone" hypothesis [19]. Robert Putnam, an American public policy scholar, argued that in the past, Americans maintained strong social ties through shared activities such as picnics, participation in civic groups, and playing team sports such as in bowling. Now, however, Americans have forsaken such group and team activities; they "bowl alone" (the eponymous hypothesis), and spend too much time physically apart. In so doing, they become increasingly disconnected from one another, and the consequences for society may be dire.

The lonely gamer stereotype picks up on Putnam's anxiety with respect to "aloneness." Within game studies, an alternative hypothesis, that people may use MMOs as vehicles for enacting and enhancing RL social relationships, has been surprisingly overlooked. Most of the previous literature has not seriously taken into account today's large and growing opportunities for creative hybrids of in-game and RL sociality [see 3, 21, 22 for notable exceptions]. In the study described here, we address this issue by exploring the prevalence of RL social relationships among players of World of Warcraft. This subtle but profound shift in perspective raises fascinating questions, many of which could simply not arise until now. Do people tend to venture into game spaces on their own, or do real and virtual worlds meet as people play online with friends and family? Does gaming interfere with or enhance existing patterns of RL interaction and socializing? Is in-game socializing similar for men and women? Do sociality patterns vary greatly by region or culture? What other patterns may be found in the interaction between in-game and RL sociality?

We present results from a large exploratory online survey of WoW players, comprising the first set of quantitative findings on the prevalence of RL social interactivity among MMO players. We also explore patterns of in-game interactivity with RL friends, family, and other social connections, and look for evidence of gender and age effects. Moreover, our findings span geographical regions. While more than half of World of Warcraft players live in Asia [23], the data on WoW players and play patterns—like that of other MMOs—is overwhelmingly from North America and Europe. Our survey respondents were

primarily from the US (with a small sample from Europe), but we also had respondents from Hong Kong and Taiwan. Our results thus also provide benchmark cross-regional data. While no single study could possibly address all the questions raised by this new way of looking at the World of Warcraft social landscape, we believe these fundamental, quantitatively-grounded patterns of reported sociality across diverse geographical regions provide a good start. Our aim is to shed light on RL social activity taking place in the MMO, and to stimulate further research on this important topic.

2.0 Methods

A survey was created in English, and then translated into Chinese using traditional characters. World of Warcraft players were recruited through links on online game forums, through popular gaming websites (e.g., wow.com), on social media such as Twitter, and through mailing lists derived from previous web-based studies by the last two authors. The survey was deployed between March and May 2010, and targeted primarily at the US, Hong Kong and Taiwan. For further information on survey construction and implementation, see [24].

Data were obtained from a total of 2865 survey respondents (with 90% or greater survey completion rates) from four regions: The US, Taiwan (TW) Hong Kong (HK), and the EU (from a small but fortuitous set of English-speaking Europeans). Standard data-cleaning methods were applied to the raw dataset described in our preliminary report [11]; most notably, a small number of obvious data entry errors were corrected or counted as missing data. Table 1 (see below) provides the sample size for each region (in parentheses). Note that large differences in sample counts may reflect a wide variety of factors, including disparities in language, culture and internet access. While every effort was made to minimize sampling biases, they cannot be completely eliminated in surveys of this sort. (This was especially true for the EU sample, since participation was in English and through sites on US servers.) The recruitment methods available to us did not permit meaningful estimates of participation rates or representativeness. These and related considerations dictate the need for caution in applying statistical analyses, especially inferential statistics, to these data (see section 3.2.1 for further discussion). The primary results of this exploratory study are benchmark estimates of the prevalence of RL sociality among WoW players, presented in tables as percentages by region and gender. In addition, consistent patterns in the data suggest intriguing questions for further research.

3.0 Results

3.1 Player characteristics

We first describe several findings that are related to the lonely gamer stereotype, and provide a context within which to understand how RL sociality might be enacted in World of Warcraft. For conciseness, this presentation of data in this section is fairly brief; see our preliminary report [11] for further discussion of player characteristics.

3.1.1 Gender Representation. The gender distribution of our participants is presented by region in Table 1. Female participation rates overall, and in every region except HK (11%), match or exceed a recent estimate of 24% female players worldwide [24]. Female participation was highest in the US (34%), and at a level approaching gender balance more closely than both the "lone male" stereotype and previous estimates would suggest. The low percentage of females in HK (11%) seems anomalous, and may in part be interpretable in terms of the results of another survey question, which suggests more limited home access to the internet in this region. Further research would be required to confirm this. Gender patterns are reported by region for each RL sociality variable discussed in section 3.2

Gender Distribution of Survey Respondents in Each Regional Sample

	GENDER	
	Female	Male
REGION		
EU (N=112)	24%	76%
HK (N=246)	11%	89%
TW (N=427)	26%	74%
US (N=2071)	34%	66%
Gender Means	*24%*	*76%*

Table 1. Percentage of female and male survey respondents in each regional sample (EU, HK, TW, US).

3.1.2. Age. Table 2 presents the mean age of survey respondents by region and gender. The overall mean is 26.8 yrs., (30.5 for the US). The mean age of females was higher than that for males overall and in each regional sample. This is consistent with previous survey [25] and ethnographic [3] findings suggesting that many female gamers first enter WoW through spouses or romantic partners, which may tend to make them somewhat older--as well as more socially

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connected--than males initially, and perhaps overall. The table also suggests an East/West age clustering; mean ages for EU (29.5 yrs.) and US (30.5 yrs.) participants are very close, and somewhat higher than those for participants from HK (22.5 yrs.) and TW (24.5 yrs.). These and related findings (discussed below) prompted some exploration of age-related patterns in our RL sociality data.

Mean Age

	GENDER		
	Female	Male	
REGION			Regional Means
EU	32	27	29.5
HK	23	22	22.5
TW	25	24	24.5
US	32	29	30.5
Gender Means	28.0	25.5	26.8

Table 2. Mean reported age of survey respondents, by region and gender.

3.1.3 Partnership and Parenting. Overall, 42% of participants reported that they were currently partnered (that is, in a romantic relationship or marriage); this measure rose to slightly over half of the respondents from the US (53%)--and EU the (52%). These findings are clearly not consistent with the lonely, socially isolated gamer stereotype. Yet we also find that HK and TW respondents overwhelmingly reported being single (89% and 91%, respectively). Along similar lines, while parenthood is not uncommon in the US and EU samples (24% and 17% respectively), it is extremely rare in the HK and TW samples (4% and 2%). We suspect that these results are attributable in part to the observed East/West age (and gender) differences described above. However, cultural and related factors may also play an important role, and further research would be needed to clarify this issue. The often (but by no means always) recurring East/West clustering in our data both increases our confidence in the regional samples and suggests intriguing cross-cultural questions for further studies.

3.1.4 Occupational Status. About half the respondents from the US and EU (53% and 45%, respectively) reported being full-time workers, while about half of those from HK and TW identified themselves as full-time students (51% and 45%). This pattern is also consistent with regional age differences. Note that these categories are not mutually exclusive; for example, some full-time students reported that they worked part-time. Part-time work was the next most common category in this dataset. Full-time home-makers and retirees were very rare (<5%

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in each region), and the rate of unemployment hovered around 10% or less across regions. The central message here is that most of these respondents did not seem to be playing WoW simply because they had nothing else to do—nor were they doing nothing else simply to play WoW addictively. Instead, they were generally gainfully employed or furthering their education, or both.

3.1.5 Player Type and Hours Played per Week. In one survey question, participants were asked to self-identify as "casual," "moderate" or "hardcore" players. Overall, only 9% of respondents labeled themselves "hardcore." This datum is encouraging with regard to the representativeness of our samples. It's even a bit surprising, since our recruitment methods would seem more likely to favor regular, more dedicated players over moderate players. A trend was found suggesting that males and Western players labeled themselves slightly more in the hardcore direction than did the others. The overall mean estimated time spent in WoW was 22.8 hours/week. This is quite substantial, but not more than many people regularly devote to hobbies and entertainment (see, e.g., [25, 26]). Note also that such temporal estimates generally tend to be inflated when compared with actual use logs (e.g., [10, 26]). Whether East/West differences in self-labeling and estimated play hours primarily reflect true differences in play patterns or perhaps cultural differences in self-identification and labeling is another topic for further research.

3.2 Sociality

As discussed in the introduction to this paper, the primary goal of this exploratory study is to provide benchmark estimates of the prevalence of in-game RL social interaction among WoW players. Measures of direct relevance to the "lonely gamer" stereotype and "bowling alone" hypothesis include percentages of respondents who report playing WoW alone only (v with others known in RL), and/or having made RL friends in WoW. In addition, gender, region and age patterns in RL sociality with friends, family members and other social connections are explored. In considering these results, note first that the format of the sociality questions differed somewhat from one another; while some questions required a yes/no answer, others (the "play with" questions) asked respondents to simply affirm all that apply; hence, many of these responses—and results—are not mutually exclusive. Secondly, for the age analyses reported below, the "age" variable was divided into 3 approximately equal groups ("younger"=under 20 years; "middle"=20-29 years; "older"=30 and above) based on the overall age distribution, to permit roughly comparable categorical assessments.

Some statistical issues should be considered here. A limited set of statistical analyses were performed to explore patterns in the data to guide future research. Note that these results are descriptive, not definitive, and should be interpreted with caution. As mentioned above, the representativeness of the regional samples is unclear, and sampling biases differed across regions. In addition, sample size is an important concern. Substantial differences in sample size tend to bias any overall statistic (including mean percentages), since the results for a disproportionally large sample (i.e., that for the US) will tend to drive the overall results in their direction. To explore patterns of effects by gender, region and age, Chi-Square (X^2) tests of significance and Cramer's V tests of effect size (varying from 0 to 1, with values at or above .5 considered fairly high (see, e.g., [27])) are reported for each sociality variable considered below. Note that high variability in the regional samples (especially those other than the US) can affect test results dramatically; this may account in part for the uniformly low estimates of effect size seen in the results described below. Moreover, the data are too sparsely distributed (that is, table cell counts are insufficient) for meaningful higher-order tests on several variables. Still, the possibility of such interactions cannot be ignored. Analyses of the overall dataset show significant gender x region ($X^2(3)$=67.29, Cramer's V=.15, p<.000) and gender x East/West clustering ($X^2(1)$=45.07, Cramer's V=.13, p<=.000) effects. Reliable age x gender ($X^2(2)$=68.56, Cramer's V=.16, p<=.000), age x region ($X^2(3)$=67.29, Cramer's V=.15, p<=.000) and age x East/West clustering ($X^2(1)$=45.07, Cramer's V=.13, p<=.000) effects are also found. Finally, the results of separate analyses of the US data alone are not reported, since they closely resemble the overall findings.

3.2.1 Playing Alone Only. Are most people who play WoW lone gamers? Did our respondents tend to play only with online acquaintances, or did they play WoW with other people they know in RL? The results are given in Table 3. Overall, less than one quarter of our respondents reported playing alone only (the overall mean was 22%; that for the US was 24%). These results are robust, and their implications are clear. The great majority—over three quarters—of our respondents are not lone gamers: they play with others with whom they have a RL relationship. In looking at patterns within these data, we find that the percentage of females playing alone only is lower than that for males overall (18% v 26%) and consistently for each region; this gender effect is statistically significant ($X^2(1)$=23.39, Cramer's V=.09, p<.000). The regional results for the EU (19%) and TW (20%) are very close, and somewhat lower than those from HK (24%) and the US (25%), but no reliable effect of region is found. A (non-significant) age-related trend ($X^2(2)$=5.3, Cramer's V=0.04, p=.072) suggests that older participants (30%) tend to report playing alone somewhat more often than

those of the middle (24%) and younger (25%) age-ranges. This is consistent with some previous findings for older adults in the US [28]. Again, our primary conclusion from these results is that the large majority of our respondents, both male and female, and in each region surveyed, play WoW with people they know in real life. Clearly, these are not lone gamers. Instead, most people appear to use WoW play as an extension of their RL sociality.

Playing *WoW* Alone Only

REGION	GENDER		
	Female	Male	
			Regional Means
EU	15%	22%	19%
HK	23%	27%	25%
TW	16%	24%	20%
US	20%	29%	24%
Gender Means	18%	26%	22%

Table 3. Percentage of respondents who reported only playing *WoW* alone (i.e., not with anyone they know in real life), by region and gender.

3.2.2 Playing with RL Friends. Given that most gamers do play WoW with others they know in RL, with whom do they tend to play? The results in the next several tables explore this question. Table 4 shows the results for respondents who reported playing WoW with RL friends. (Note again that the results that follow are not mutually exclusive; for example, one could play with one's spouse as well as one's friends.) Overall, slightly more than half the respondents (53%) reported playing with RL friends; the regional means were close to or above half in every case. Interestingly, the gender effect is reversed for this variable: more males reported playing WoW with RL friends overall (59% v 47%) and in each region. This reversed gender effect is reliable ($X^2(1)=9.88$, Cramer's V=.06; p<.002), and consistent with previous ethnographic reports [e.g., 3]. While no reliable regional effect is found, the interaction between region and gender is significant ($X^2(6)=49.64$, Cramer's V=.18, p<.000), reflecting a substantially smaller gender difference in the US (4%) sample than in the others (mean=15%). In addition, over half of the respondents in the younger (57%) and middle (55%) age groups reported playing with friends, but fewer of those in the older group (44%) did so. This age effect was significant ($X^2(2)=17.8$, Cramer's V=0.08, p<.000). These results again demonstrate robust RL sociality taking place in the virtual world.

Respondents Playing *WoW* with RL Friend(s)

REGION	Female	Male	Regional Means
	GENDER		
	Female	Male	
			Regional Means
EU	52%	64%	*58%*
HK	38%	58%	*48%*
TW	47%	62%	*55%*
US	51%	55%	*53%*
Gender Means	*47%*	*59%*	*53%*

Table 4. Percentage of respondents who reported playing *WoW* with real-life (RL) friend(s), by region and gender.

3.2.3 Playing with RL Family Members. After RL friends, respondents most often reported playing WoW with RL family members. These results are presented by region and gender in Table 5. Overall, about a third (29%) of our respondents reported playing with family members. The results for females is again higher than those for males overall (37% v 21%) and in each regional sample; this effect is statistically significant ($X^2(1)= 71.55$, Cramer's V=.16; p<.000). The results for the EU and US (32% and 35%, respectively) are substantially higher than those for HK and TW (26% and 23%). Reliable region ($X^2(3)=37.72$, Cramer's V=.12, p=.170) and East/West clustering effects are found ($X^2(1)=34.43$, Cramer's V=.11, p<.000) in these data. In addition, a reliable increase in family play with age is shown in these data ($X^2(2)=100.72$, Cramer's V=.19, p<.000); the results for the younger, middle and older groups are 21%, 33% and 47%, respectively. This is also consistent with previous findings on older players in the US [28]. Additional analyses suggest that the family members that our respondents played with most often are spouses and siblings.

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Playing *WoW* with RL Family Member(s)

REGION	GENDER		Regional Means
	Female	Male	
EU	44%	19%	*32%*
HK	35%	18%	*26%*
TW	26%	20%	*23%*
US	43%	28%	*35%*
Gender Means	*37%*	*21%*	*29%*

Table 5. Percentage of respondents who reported playing *WoW* with RL family member(s), by region and gender.

3.2.2.3 Playing with RL Spouse or Romantic Partner(s). Table 6 presents results on the prevalence of playing WoW with one's RL "significant other" (spouse or romantic partner). Overall, about a third (30%) of all respondents reported playing with a spouse or partner (similar to that for playing with family members). Again, the female percentages are consistently higher than males' in each region and overall (45% v 14%). This gender effect is reliable ($X^2(1)=326.06$, Cramer's V=.34; p<.000) and consistent with previous qualitative reports [e.g., 3]. Note that the size of this effect is the largest of all those reported for this study. The EU and US results (30% and 38%, respectively) are substantially higher than those for HK and TW (22% and 28%). Reliable regional ($X^2(3)=91.90$, Cramer's V=.18, p<.000) and East/West clustering ($X^2(1)=81.78$, Cramer's V=.17, p<.000) effects are found. These results are also consistent with East/West differences in age and partnering patterns. Finally, the results for younger respondents (20%) are substantially lower than those for the middle and older age groups (35% in both cases); this age effect is reliable ($X^2(2)=69.09$, Cramer's V=.16, p<.000).

Playing *WoW* with RL Spouse
Or Romantic Partner(s)

	GENDER			
	Female	Male		
REGION				*Regional Means*
EU	41%	20%		*30%*
HK	38%	6%		*22%*
TW	49%	8%		*28%*
US	53%	23%		*38%*
Gender Means	*45%*	*14%*		*30%*

Table 6. Percentage of respondents who reported playing *WoW* with RL spouse or romantic partner(s), by region and gender.

3.2.2.4 Playing with RL Co-Workers. Table 7 shows the mean percentages of males and females from each region who reported playing WoW with RL co-workers. This is quite rare overall (6%) and in each region; results were highest for the US (10%). Another reversal in the direction of gender differences obtains for this variable; means for males were higher than those for females overall (8% v 5%) and for every region except HK, which showed no difference. The reversed gender effect is statistically reliable ($X^2(1)=5.03$, Cramer's V=.04; p<.025). Significant regional ($X^2(3)=20.99$, Cramer's V=.09, p<.000) and East/West clustering ($X^2(1)=10.20$, Cramer's V =.08, p<.000) effect are found. A reliable effect of age ($X^2(1)=36.97$, Cramer's V=.11, p<.000) is also seen; consistent with age differences in occupational status, fewer of the younger participants (5%) reported playing with co-workers than did those in the middle (13%) and older (10%) age groups.

Playing *WoW* with RL Co-Worker(s)

REGION	GENDER Female	Male	Regional Means
EU	4%	8%	6%
HK	4%	4%	4%
TW	5%	7%	6%
US	8%	12%	10%
Gender Means	*5%*	*8%*	*6%*

Table 7. Percentage of respondents who reported playing *WoW* with RL co-worker(s), by region and gender.

3.2.3 Making RL Friend(s) in WoW. Finally, another survey question of direct import to the "lone gamer" hypothesis asked respondents whether they'd ever met someone in-game who eventually became a RL friend. The results are shown in Table 8. Slightly more than half of our respondents reported that they did make RL friends in WoW overall (56%); this is also true of the gender and regional means (the mean for the US sample is 54%). Again, the results for females are substantially higher than those for males overall (62% v 51%) and consistently within each region; this gender effect is reliable ($X^2(1)$=27.19, Cramer's V=.10; p<.000). Significant regional ($X^2(3)$=17.21, Cramer's V=.08, p<.001), and East/West clustering ($X^2(1)$=8.87, Cramer's V=.06, p<.003) effects are also found. In addition, in each age group, half or more of our participants reported making RL friends while playing WoW (younger=51%, middle=57%, older =50%); this age effect was also reliable ($X^2(1)$=43.01, Cramer's V =.06, p<=.007). Thus, large proportions of our respondents not only interact with RL friends and family in World of Warcraft, but also make new RL friendships while playing the game.

While qualitative evidence for making RL friends in virtual worlds has frequently been reported in previous research [e.g., 9, 10, 13, 14, 21, 24], this study provides the first quantitative estimates. The magnitude of the findings in this table are rather remarkable given the online nature of WoW, since whomever one meets could, in principle, reside in almost any RL location within a large region. (Great physical distances between WoW players must be very common, especially in the larger geographies of Europe and the US. Indeed, a previous study [3] reported guilds composed of people all over North America, from Quebec to Mexico.) Further research is clearly needed, but the robustness of this finding intrigues us.

That a large proportion of players report making RL friends in-game is a compelling finding, suggesting that World of Warcraft may not only support, but perhaps even promote, social ties that bridge real and virtual life.

Making RL Friend(s) While Playing *WoW*

	GENDER		
	Female	Male	
REGION			*Regional Means*
EU	59%	45%	*52%*
HK	58%	50%	*54%*
TW	70%	60%	*65%*
US	59%	48%	*54%*
Gender Means	*62%*	*51%*	*56%*

Table 8. Percentage of respondents who reported making RL friends while playing *WoW*, by region and gender.

4.0 Discussion

This paper presents the findings of a large online survey exploring RL sociality in World of Warcraft. The primary results of this research suggest that substantial and diverse real-life based sociality is taking place in World of Warcraft overall, and by both men and women across regions. Our participants commonly reported playing with people they know in real life and making RL friends in-game. Gamers play with friends, family members, spouse/partner(s), and sometimes even co-workers. The patterns are robust and appear to hold not only in the US, but across global regions. These and related findings are clearly inconsistent with the "lonely gamer" stereotype (portraying gamers as isolated misfits, with rhetoric that occasionally spirals down into extravagant moral panic). Moreover, our results lend no support to the "bowling alone" hypothesis [19; see also 20]. Typical patterns of WoW play appear to supplement, and perhaps even enhance, real-life relationships, not simply subvert or destroy them. The finding that substantial percentages of players across all regions are making new RL friends in the virtual world also suggests that World of Warcraft is a successful social platform [3], with players reaching out to people they meet in-game, and incorporating them into their RL social lives. Contra Putnam and the moral panic, multiplayer games may be better viewed as platforms for RL (as well as online) social interactions; whether drawing on existing RL relationships or enabling new ones, the effect is to bring people together.

The patterns of findings for gender, region and age effects—while admittedly not large in terms of estimated effect size—are coherent, robust across sociality variables, and consistent with expectations. Moreover, as in previous reports [1, 3], relatively few respondents labeled themselves as "hard core" players, providing some reassurance as to the representativeness of these results. The East/West age—and gender—differences, with some concomitantly diverging patterns of partnering, parenting, and occupational status, raise further questions. For example: Why might WoW play be more common among younger players in HK and TW? Could this reflect broad differences in culture or in access to technology? Or could some of our sociality findings more strongly reflect age—and gender—differences than regional ones? These questions cannot be answered definitively here; additional research is required.

We also note that our US sample appears to "lead" in social diversity in certain key indicators, with the highest percentages of female players, older players, parents, and respondents playing with a spouse or romantic partner. The data suggest that in the US (and perhaps in the EU as well), World of Warcraft has reached a substantial female population and regularly engages friends and family, spouses and partners in joint leisure activity.

Finally, we emphasize again the exploratory nature of this study. Our major findings comprise benchmark estimates and suggestive patterns; they cannot in themselves resolve the many intriguing questions they raise around what happens when game culture and local culture meet; much further research is needed for that. Still, the consistency of patterns across regions with very different cultures suggests that, as we attempt to conduct meaningful research in a global context, it may not always be appropriate to seek only cross-cultural differences, but also similarities. At least sometimes, the better question may be not why are we so different, but why are we so similar? In addition, it may be inappropriate to assume a priori that "culture" functions as the causal mechanism for any regional differences that are in fact found. To at least some extent, similarities in patterns of play may be attributable to game design factors; that is, to WoW's unique ways of mediating experience, and the specific affordances it offers (see [3, 7]). Outside of language localization and some very small visual adjustments, World of Warcraft is identical across regions. The broad questions raised here about culture, mediation, and affordances of virtual worlds cannot be answered in this paper, but our data establish their importance, and suggest critical paths for future research.

5.0 Conclusions

This paper presents the results of a large exploratory survey on the RL social landscape of World of Warcraft players across four regional samples: Europe, Hong Kong, Taiwan, and the US. Consistently across regions, the large majority of respondents reported that they do play with others they know in RL (friends, family members, a spouse or romantic partner), and do not only play alone or just with others they know online. This pattern of findings is inconsistent with the "lonely gamer" stereotype. Moreover, the "bowling alone" hypothesis is not supported by our results. The substantial RL socializing that occurs in games like World of Warcraft suggests that this hypothesis's construction of picnics and bowling leagues as critical sites of socializing is dated, and no longer where much of the social action now is (which may well be online games!). Typical patterns of WoW play appear to enhance real life relationships, not simply replace them. And sizable percentages of players across all regions reported making new RL friends in the virtual world, which can surely be taken as a bottom-line indicator that most gamers may well be neither lonely nor crazy. Instead, these findings lend support to the view of World of Warcraft as a successful social platform for men and women across diverse regions of the globe.

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7.0 References

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- A large global survey of WoW players found robust patterns of real-life sociality in game play.
- Most people played with RL friends and family, and many made new RL friends in-game.
- Intriguing cross-cultural and gender patterns were found, to guide further research.
- Contrary to the "lonely gamer" stereotype, online gaming can promote RL sociality.