

# A New Look at World of Warcraft's Social Landscape

Diane J. Schiano  
ITP  
1069 East Meadow Circle  
Palo Alto, CA 94303 USA  
dianejschiano@gmail.com

Bonnie Nardi,  
Thomas Debeauvais,  
Department of Informatics  
University of California, Irvine  
Irvine, CA 92697 USA  
{tdebeauv,nardi}  
@ics.uci.edu

Nicolas Ducheneaut,  
Nicholas Yee  
Palo Alto Research Center  
3333 Coyote Hill Road  
Palo Alto, CA 94304 USA  
{nicolas, nicholas.yee}  
@parc.com

## ABSTRACT

World of Warcraft (WoW) is a massively multiplayer online game (MMO) supporting complex social interactions among over 12 million players. While the “lone gamer” stereotype still persists, there is little data on gaming with other players with whom one shares a “real life” (RL) social relationship. Our work departs from previous studies in focusing on the hybrid of online and offline sociality, rather than only one or the other. We provide perhaps the first systematic quantitative characterization of MMO play with RL friends, family and other social connections. A large online survey collected data from 2865 WoW players from the US, Europe, Hong Kong and Taiwan. The findings overwhelmingly support the view that playing WoW may often serve to enhance, not diminish, RL social interactions. In addition, we present benchmark results on demographics and WoW play practices in world regions previously not studied. The consistency of the patterns of findings across East/West and gender groupings suggests fascinating issues for further research.

### Categories and Subject Descriptors

H.5.1 [Multimedia Information Systems]: Artificial, augmented and virtual realities

### General Terms

Human Factors, [Measurement: Game Studies/Social Games]

### Keywords

Game studies, social games, MMOs, World of Warcraft, real-life relationships, online sociality, demographics

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

Conference'10, Month 1–2, 2010, City, State, Country.

Copyright 2010 ACM 1-58113-000-0/00/0010...\$10.00.

## 1. INTRODUCTION

Massively multiplayer online role-playing games (MMOs) comprise rich and varied social—as well as virtual—landscapes [4, 10]. In recent years, MMOs have grown tremendously in size and sophistication. In World of Warcraft (WoW; see [4, 10]), 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 twelve million people play WoW worldwide [3]. It is available in nine languages and is played even in places with poor Internet connectivity, such as Tashkent in Central Asia [9]. Still, while more than half the players worldwide live in Asia [7], the literature on WoW players and play patterns—like that of other MMOs—is based overwhelmingly on data from North Americans and Europeans.

Many studies of WoW and related virtual worlds indicate that they support rich and complex social interactions among great numbers of players online [1, 5, 8, 10, 11, 15, and 16]. Still, the perception persists that these games are “anti-social”, attracting only lonely people (especially young males), and enticing them to spend many hours in social isolation. It is still common “to imagine [players] as pasty, socially challenged loners” [8], or as troubled “addicts” seeking solace away from the real world [4]. As more and more of us spend more and more time in WoW and other MMOs, it becomes increasingly important to seriously examine the connection between gaming and “real life” (RL) sociality. (We use “RL” here as gamers do, to indicate a relationship or experience with a significant offline component [10]).

Much of the research on online gaming has focused solely on online interactions without exploring RL relationships, or vice-versa. And all too often, the former is simply assumed to be detrimental to the latter, in the absence of any serious investigation. Thus, while some have characterized MMOs as virtual “third places”, fostering rich sociability among online acquaintances in an informal setting [16], others maintain that time spent online only serves to displace “real” sociality [2, 12]. This last argument is sometimes called the “bowling alone hypothesis” [12]. An alternative hypothesis, that people may use MMOs as vehicles for enacting and enhancing RL social relationships, been surprisingly overlooked.

In the study described here, we address that hypothesis by examining RL relationships among players of World of Warcraft. This subtle but profound shift in perspective raises fascinating questions, many of which simply did not arise until now. Do people tend to venture into game spaces on their own, or does the real world meet the virtual world as people play with friends and family? Does gaming interfere with or enhance existing RL patterns of interaction and socializing? Do sociality patterns vary greatly by region or culture?

In this paper, we present results from a large online survey of WoW players, posted in English and in Chinese. Respondents were primarily from the US, Hong Kong, and Taiwan, with a small but fortuitous sample of English-speaking Europeans. We provide the first set of quantitative findings on MMO play with RL friends, family and other social connections, and benchmark cross-regional data suggesting important issues for further research. No single study can address all the questions raised by this new way of looking at the World of Warcraft social landscape, but the results given here provide a good start.

## 2. METHODS

A survey was created in English, then translated into Chinese (using traditional characters). WoW players were recruited through links on game forums, through popular gaming websites (e.g. wow.com), on social media such as Twitter and with mailing lists from previous web-based studies by the last two authors. The survey was deployed between March and May 2010, and targeted at the US, Hong Kong, and Taiwan. For further information on the survey, see [20].

## 3. FINDINGS

Data were obtained for a total of 2865 survey respondents (with 90% or greater survey completion rates) from four regions: the US, Taiwan (TW), Hong Kong (HK), and a small set of English-speaking Europeans (EU). Table 1 (rightmost column) gives the regional sample counts. As can be clearly seen in the table, the US sample is largest by far, and that from the EU is smallest. Note that differences in sample counts may reflect a wide variety of factors, including disparities in language, culture, and internet access. In addition, 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.) In the sections below, we present mean results (descriptive statistics) for each regional sample independently, noting recurring patterns within and across regions. The sampling considerations cited above lead us to refrain from using inferential statistics to make direct quantitative comparisons with this data. However, repeated patterns of findings lend confidence to our conclusions. Further results, including standard deviations of the means presented here and findings from additional analyses of this dataset, will be available upon contacting the first author.

### 3.1.1 Player characteristics

In addition to regional counts, Table 1 also provides gender, marital/romantic partner status, and parental status of survey respondents for each region. As might be expected, males comprise the highest percentage of respondents in each region.

Still, the female representation is substantial. The EU, TW and US percentages match or exceed a recent estimate that 24% of WoW players are female [13]. The percentage of female players is highest in the US sample (34%), and closer to gender balance than both the “lone male” stereotype and previous estimates suggest. The HK sample has the lowest rate of female participation (11%). Responses to another survey question suggest that this might in part reflect more limited home access to the internet in this region, but further research would be required to confirm this.

**Table 1. Mean percentages of female, single and parent survey respondents by region (EU, HK, TW, US)**

REGION	Female	Single	Parent	Count (by Region)
EU	24%	47%	17%	112
HK	11%	89%	04%	246
TW	26%	91%	02%	427
US	34%	47%	25%	2071
<b>Total Count</b>				2856

When asked whether they were currently single or partnered (i.e., in a romantic relationship or marriage), more than half the EU and US respondents reported that they are in fact currently partnered. These findings strongly belie the representativeness of the lonely, socially isolated gamer stereotype. Yet we also found that HK and TW participants are overwhelmingly single (89% and 91%, respectively). This may in part reflect the relative youth of these respondents (see Table 2), but cultural factors may also play an important role. Further research would be needed to provide clarification on these issues. This pattern of data is one example of a recurrent East/West clustering of results in this dataset, which both increases our confidence in our samples (especially for the EU), and suggests intriguing cross-cultural questions for further studies.

**Table 2. Average age of respondents and estimated hours per week spent in WoW by gender and region**

REGION	Females		Males	
	Avg Age	WoW Hrs/wk	Avg Age	WoW Hrs/wk
EU	32 yrs	21.1	27 yrs	20.3
HK	23 yrs	27.3	22 yrs	27.2
TW	25 yrs	25.9	24 yrs	25.0
US	32 yrs	22.7	29 yrs	21.4

Finally—and not unexpectedly given the partnering patterns, parenthood is extremely rare for HK and TW respondents (4% and 2%, respectively), but not uncommon for those from the EU and US (17% and 24%, respectively).

Table 2 presents average age and estimated hours/week spent playing WoW by gender for each region. Mean age range is 22-32 years, with EU and US respondents somewhat older than those from HK and TW. Females also tend to be older than males across regions. This is consistent with previous survey [19] and ethnographic [10] results; the ethnographic interviews also suggest that many female gamers first enter WoW through spouses or romantic partners. Mean estimates of time spent in WoW range from 20.3 to 27 hours/week. This is substantial, but not more time than many people regularly devote to other hobbies or amusements. Moreover, when compared with actual use logs, such time estimates generally are found to be inflated (see [14]). And since our recruitment methods are more likely to have attracted regular players than those who play only occasionally, it is somewhat surprising that the estimates are not higher [10]. The estimates fall within a similar range across regions, but those from the HK and TW respondents were somewhat higher than those from the EU and US. In addition, mean estimates of time spent in WoW by males and females in each given region are remarkably close.

**Table 3. Mean percentages of respondents self-identifying as “casual”, “moderate”, and “hard core” players, by gender and region**

REGION	Player Type					
	Females			Males		
	Casual	Moderate	Hard Core	Casual	Moderate	Hard Core
EU	33%	59%	7%	32%	57%	11%
HK	54%	46%	0%	43%	53%	4%
TW	55%	44%	1%	40%	58%	2%
US	29%	63%	9%	21%	68%	11%

We begin to explore player type in Table 3, which presents mean percentages of respondents labeling their own play patterns as either “casual”, “moderate”, or “hard core”, by gender for each region. (The extremes are ill-defined but pervasive gamer terms). The gender patterns are remarkably similar within each region, although the male responses tend to skew slightly more towards “moderate” and “hard core” labels than do those of females overall. Still, it is apparent that the great preponderance of respondents overall do not consider themselves “hard core” players. This pattern of results again shows an East/West clustering. Higher percentages of the Eastern respondents self-identify as casual players, while more Westerners label themselves as moderate, despite the previously-presented finding that Easterners tend to claim to spend more hours in the game. Further research could help clarify whether this primarily reflects true differences in play patterns or perhaps cultural differences in self-identification and labeling.

In Table 4 we address the question of what players do with their time besides playing World of Warcraft. Occupational status is displayed by region (over both males and females). Note that

these categories are not mutually exclusive; for example, some respondents who are students may also work.

**Table 4. Occupational status distribution: Mean percentages of respondents in each job category by region**

REGION	Job Status					
	Full Time	Student	Part Time	Unemployed	Home maker	Retired
EU	45%	24%	17%	10%	4%	1%
HK	28%	51%	11%	9%	0%	0%
TW	35%	45%	8%	11%	1%	0%
US	53%	19%	16%	7%	4%	1%

About half of the respondents from the EU and US (45% and 53%, respectively) reported being full-time workers; this was the largest occupational category for the Western sample. On the other hand, about half the HK and TW respondents identified themselves as students (51% and 45%, respectively), which was the largest category for the Eastern sample. This pattern is consistent with the East/West age differences discussed earlier. Home-makers, and especially retirees, are quite rare overall, and the rate of unemployed players hovers around 10% across regions. The vast majority of the WoW players in our survey are gainfully employed or furthering their education.

### 3.1.2 Sociality

We now explore questions related to “real life” sociality in the virtual world. Do our respondents tend to play alone, or do they play with people they know in real life? Table 5 addresses this question, comparing mean percentages of respondents who play alone (only) and those who play with RL others.

**Table 5. Mean percentages of respondents who play alone or with other people they know in RL by region**

REGION	Play Alone Only or w/RL Others			
	Females		Males	
	Alone Only	w/ Others	Alone Only	w/ Others
EU	15%	85%	24%	76%
HK	35%	65%	30%	70%
TW	22%	78%	27%	73%
US	21%	79%	28%	72%

In each region, lone play is much less common than play with others, again defying the “lone gamer” stereotype. Perhaps not surprisingly, a lower percentage of females than males play alone in the EU, TW and US samples. Interestingly, HK females show the highest rate of lone play (35%), similar to but

somewhat higher than that of HK males (30%). Further research on this pattern is needed.

**Table 6. Mean percentages of respondents who play with family and other people known in RL, by gender and region**

REGION	Play w/ RL Others: Family, NonFamily or Both					
	Females			Males		
	Family Only	Non-Fmly Only	Both	Family Only	Non-Fmly Only	Both
EU	27%	55%	18%	25%	58%	17%
HK	33%	40%	27%	18%	68%	15%
TW	15%	64%	21%	16%	66%	18%
US	17%	55%	27%	17%	56%	28%

Tables 6 and 7 break down “RL Others” from Table 5 into more specific categories of social relationships. Table 6 depicts the pattern of playing WoW with family, other RL acquaintances or both, by gender for each region. Playing with non-family others only is most prevalent across both genders and regions. Still, a sizeable percentage of males and females in each region report playing with family members to at least some extent.

Table 7 presents play patterns with co-workers, spouse/romantic partners and friends. These categories are also not mutually exclusive; for example, one can play with one’s friends as well as one’s partner. Overall, relatively few respondents reported playing WoW with co-workers, although the percentage of males playing with co-workers is found to be somewhat higher than that for females in the EU, TW and US.

**Table 7. Mean percentages of respondents who play with RL co-workers, spouse/partner and friends, by gender and region.**

REGION	Play w/ RL Others: Co-worker, Spouse/Partners, Friend					
	Females			Males		
	Co-wrkr	Spouse Partnr	Friend	Co-wrkr	Spouse Partnr	Friend
EU	5%	50%	64%	11%	26%	83%
HK	7%	67%	67%	5%	8%	81%
TW	6%	62%	60%	9%	11%	83%
US	11%	72%	69%	16%	31%	72%

The percentages of male (16% ) and female (11% ) US gamers who play WoW with co-workers are fairly substantial, and

higher than those for the other regions. The rate of play with friends is very high across all regions, and higher for males than for females in each case. Interestingly, while the US rate of females playing with friends (69%) is somewhat higher than that for females in the other regions, the US rate for males (72%) is somewhat lower. Females show higher rates of play with a spouse or partner than with friends in each region. Perhaps the lower rate of females playing with friends reflects a tendency to play preferentially with a spouse or partner. We plan to explore this issue further in future analyses.

Finally, players were asked whether they ever met someone in-game who eventually became a RL friend. Overall, 41%-71% of respondents said they did so. In addition, the percentage of females who made RL friends in WoW is higher than that for males in each region (60% v 48% in the US).

**Table 8. Percentages of respondents who made RL friends while playing WoW by gender for each region**

REGION	Made RL Friend(s) in WoW?			
	Females		Males	
	Yes	No	Yes	No
EU	59%	41%	45%	55%
HK	58%	42%	51%	49%
TW	71%	29%	60%	40%
US	60%	40%	48%	52%

While anecdotal evidence for making RL friends in virtual worlds has been reported in previous research [e.g., 10, 13, 14, 16, 17], this study provides quantitative data on the issue. The magnitude of the percentages in this table are rather remarkable, since WoW is an online world and whomever one meets could reside in almost any RL location. Thus, great physical distances between players must be very common, especially in the larger geographies of Europe and the US. While further research is clearly needed, the strength and robustness of this finding intrigues us a great deal. That players make real-life friends within the virtual world is compelling evidence that World of Warcraft includes--and indeed, may promote--social ties that bridge real and virtual life.

#### 4. DISCUSSION

This paper presents survey findings on the real-life social landscape of World of Warcraft in four regions: Europe, Hong Kong, Taiwan, and the US. Overwhelmingly, both within and across regions, participants reported playing with people they know in real life (friends, coworkers, spouse/partners, family members). These and related results converge to strongly suggest that the “lonely gamer” stereotype is highly inaccurate, not only in the US, but across global regions. Moreover, contrary to the “bowling alone” hypothesis [12; see also 18] typical patterns of WoW play appear to *enhance* RL relationships, not replace them. The substantial percentages of

players across all regions who made new RL friends in the virtual world lends further support to our view of World of Warcraft as a successful social platform [10]. While this notion is not new to the gaming literature, this paper provides the first set of quantitative findings on in-game interactivity with specific RL social relationships, including new, benchmark data for two important but rarely studied regions of the world.

The patterns of findings on player characteristics were remarkably robust, both by gender and by East/West regional groupings. Moreover, as in previous reports [4, 10] relatively few respondents labeled themselves as “hard core” players. This is reassuring with regard to the representativeness of our benchmark results. Still, the East/West age difference, with concomitantly diverging patterns of marital/partnering, parental, and occupational status, raises further questions: Why might WoW attract younger players in HK and TW? Could the related findings reflect age rather than regional differences? Further analyses of the survey data will address these issues, but again, additional research is clearly needed.

We note that our US sample “leads” in social diversity in certain key indicators, with the highest percentages of female players, older players, parents, and respondents playing with a spouse or partner. The data suggest that in the US, World of Warcraft has reached a substantial female population and regularly engages friends and family, spouses and partners in joint leisure activity.

Several of these findings serve primarily as benchmarks, and cannot in themselves resolve the many intriguing questions 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 (even given age differences) 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 differences that are in fact found. Moreover, to 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 [4]). 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 may not be answered in this paper, but this data establish their importance, and suggest critical paths for future research.

## 5. CONCLUSION

This paper presents survey findings on the real-life social landscape of World of Warcraft players in four regions: Europe, Hong Kong, Taiwan and the US. Overwhelmingly, within and across regions, people were found to play with others they know in real life (friends, coworkers, spouse or partners, family members). The results converge to strongly suggest the inaccuracy of both the “lonely gamer” stereotype and the “bowling alone” hypothesis. Typical patterns of WoW play appear to enhance real life relationships, not replace them. And sizable percentages of players across all regions made new real-

life friends in the virtual world. These findings support our view of WoW as a successful social platform [10] in the US, and in other regions of the world as well.

## 6. ACKNOWLEDGMENTS

We would like to acknowledge our appreciation for the voluntary participation of the respondents to our survey, without whom this study would not have been possible.

## 7. REFERENCES

- [1] Bainbridge, W. (2007). The scientific research potential of virtual worlds. *Science*, 317, 472-476.
- [2] Beniger, J. (1987). Personalization of mass media and the growth of pseudo-community. *Communication Research*, 14(3), 352-371.
- [3] Blizzard Entertainment. (2011). *World of Warcraft Subscriber Base Reaches 12 Million Worldwide*, <http://us.blizzard.com/enus/company/press/pressreleases.html?101007> Last accessed February 2011.
- [4] Chee, F. and Smith, R. (2005). Is electronic community an addictive substance? In *Interactive Convergence: Critical Issues in Multimedia*, S. Schaffer & M. Price, eds. Oxford: Inter-Disciplinary Press, 137-155.
- [5] Ducheneaut N., Yee N., Nickell E., and Moore R. J. (2006). "Alone together?": Exploring the social dynamics of massively multiplayer online games. In *Proceedings of the SIGCHI conference on Human Factors in computing systems*, 407-416.
- [6] Flanagan, M. and Nissenbaum, H. (2007). A game design methodology to incorporate activist themes. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 155-163.
- [7] Humphries, M. (2008). *World of Warcraft Passes 10 Million Players, Asia Leading the Way*. <http://www.geek.com/articles/games/world-of-warcraft-passes-10-million-players-asia-leading-the-way-20080124/> Last accessed February 2011.
- [8] Frenkel, K. (2009). Therapists use virtual worlds to address real problems. *Scientific American*. <http://www.scientificamerican.com/article.cfm?id=therapists-use-virtual-worlds>. Last accessed February 2011.
- [9] Kolko, B. and Putnam, C. (2009). Computer games in the developing world: The value of non-instrumental engagement with ICTs, or, Taking play seriously. *Proceedings of the 3rd International Conference on Information and Communication Technologies and Development*, 46-55.
- [10] Nardi, B. (2010). *My Life as a Night Elf Priest: An Anthropological Account of World of Warcraft*. Ann Arbor: University of Michigan Press.
- [11] O’Brien, C. (2010). Silicon Valley-style romance blooms in World of Warcraft. *San Jose Mercury News*. [http://www.mercurynews.com/chris-obrien/ci\\_15689032](http://www.mercurynews.com/chris-obrien/ci_15689032). Last accessed February 2011.
- [12] Putnam, R. D. (2000). *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster.
- [13] Pace, T., Bardzell, S. & Bardzell, J. (2010). The rogue in the lovely black dress: Intimacy in World of Warcraft.

- In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 233-242.
- [14] Schiano, D.J. Lessons from LambdaMOO: A social, text-based virtual environment. *Presence*, (1999), 8 (2), 127-139.
- [15] Schiano, D.J. and White, S. The first noble truth of cyberspace: People are people (even when they MOO). *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 352-359.
- [16] Steinkuehler, C. and Williams, D. (2006). Where everybody knows your (screen) name: Online games as "third places". *Journal of Computer-Mediated Communication*, 11(4), 885-909.
- [17] Turkle, S. (1995). *Life on the Screen: Identity in the Age of the Internet*. New York: Simon & Schuster.
- [18] Turkle, S. (2011). *Alone Together: Why We Expect More from Technology and Less from Each Other*. New York: Basic Books.
- [19] Yee, N. 2005 *Introduction: The RL Demographics of World of Warcraft*. <http://www.nickyee.com/daedalus/archives/001365.php>  
Last accessed February 2011.
- [20] Yee, N. (2010). *Playon: Exploring the Social Dimensions of Virtual Worlds*. [http:// www.blogs.parc.com/playon/](http://www.blogs.parc.com/playon/)  
Last accessed February 2011.