

The Daedalus Project

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[\(\[HTTP://WWW.NICKYEE.COM/DAEDALUS\]\(http://www.nickyee.com/daedalus\)\)](http://www.nickyee.com/daedalus)

A Brief Primer on Methods and Critiques

Over the years since I first put out the Norrathian Scrolls, I've read many reactions from the player base to the findings presented. On forums and message boards, some players draw out critiques that they argue invalidates the entire study. While some of these critiques are valid, their severity is often overestimated. More importantly, it may be hard for non-statisticians to understand why a valid critique may in fact not matter for many of the findings presented here at The Daedalus Project. In retrospect, I should have provided a primer to these potential weaknesses long ago, but it's better late than never. I'm going to start with the more simple critiques and move onto critiques that appear harder to resolve.

Small sample size. Some players argue that a survey of 2000 gamers from a player base that numbers in the millions won't show anything, but sampling is inherent to almost all surveys. Both the US Census and Gallup Poll survey less than 1% of the total US population. A small sample size in and of itself doesn't say anything about the representativeness of the findings. Oftentimes, people on forums will say that a sample of 2k is unreliable and then they will go on to expound their own opinion. Please call them out on their sample size of 1.

Players can't possibly be that old. Some balk at the finding that the average age of MMORPG players could possibly be as high as 26 and thus all other results must be wrong. Oftentimes, they claim that the average age must be closer to 18-22 because they always feel like they're interacting with adolescents in the game. But industry reports have shown that the average age of video game players in general is 30, so the MMO average from the surveys is actually lower than the overall average.

http://www.theesa.com/facts/gamer_data.php

Biased sampling. But the underlying argument of the "age mismatch" critique is a valid one. For example, some argue that only hard-core players would care to fill out a survey. Or that younger players are too lazy to fill out surveys. Or that the informed consent for minors discourages participation. These critics then conclude that all findings derived from this biased sampling must therefore be flawed.

This is actually not the case. Let me show this with an example. We know that the real-life gender ratio is close to 50-50. On the other hand, we know that the gender ratio in MMOs is much closer to 85-15. Imagine that I ask MMO players to tell me their height in RL and I find that women are on average shorter

than men. Is it the case that I cannot extend my finding to the real world because my gender ratio is significantly deviant from the actual ratio? Or is it the case that the validity of this particular finding isn't tied to overall sampling representativeness?

We need to make something clear. While it is true that my MMO dataset would show that the gender ratio is 85-15 (incorrect, since the RL ratio is 50-50), what I am trying to show is that this is independent from the secondary finding (that there is a height difference between the two genders). In other words, it is very possible to find gender differences, age differences, differences between Alliance vs. Horde, and so on even though the overall sampling may be a bit skewed.

And these secondary differences are what The Daedalus Project is more focused on. To me, knowing the precise gender ratio in MMOs is not very interesting. What is more interesting are gender differences (or age, or personality differences) in game play behavior. Thus, the critique of an overall biased sampling, even if it did exist, may have a negligible effect on the bulk of findings at The Daedalus Project. In other words, even if the real gender ratio was 75-25, it would probably still be the case that male players gender-bend more often than female players.

But here in this short article, I have been on the defensive and I would like to take some time to emphasize how well the survey data here has actually matched up with other data points. After all, empirical research is not about instant gratification, but instead it is often about slow accumulation of data and sifting of incongruous findings over time.

Match with data from other academic studies. Most of the key demographics variables match up well with other online survey studies of MMO players.

- Griffiths, M.D., Davies, M.N.O. and Chappell, D. (2004). Online computer gaming : A comparison of adolescent and adult gamers, *Journal of Adolescence*, 27: 87-96.
- Griffiths, M.D., Davies, M.N.O. and Chappell, D. (2003). Breaking the stereotype: The case of online gaming, *CyberPsychology and Behavior*, 6: 81-91.
- <http://www.projectmassive.com/>

Match with company marketing data. Most of the key demographic variables match up with data provided in a marketing report on MMOs. A specific section on Sony's EverQuest draws on data provided by SoE.

Marketing Report of EQ	EQ Sample (Norrathian Scrolls)	Overall Sample (Daedalus Project)
16% Female	18% Female	15% Female
61% between 20 and 34 of age	56% between 20 and 34 of age	58% between 20 and 34 of age
50% play over 20 hours a week	20 hours is median	20 hours is median

DFC Report: http://www.dfcint.com/game_report/Online_Game_toc.html

Match with aggregate WoW census data. Perhaps the most compelling support comes from a data source that isn't based on the survey methodology. The PARC PlayOn data is based on census snapshots from within World of Warcraft. Every 10-15 minutes, an automated script collects information from every single character online. In other words, this data source is almost as perfect as we can get in terms of actual behavioral data.

For example, from the survey data we were able to get the average achievement motivation of players who prefer different classes in WoW. From the PlayOn data, we were able to get the average time it takes different character classes to make each level. The classes who score low on the achievement motivation (survey data) are also the ones who level the slowest (census data).

<http://www.nickyee.com/daedalus/archives/001367.php?page=2>
http://blogs.parc.com/playon/archives/2005/07/leveling_time_b.html

Of course, not every data point from the survey can be supported by the census data. After all, the census data can't track RL age or gender information. Nonetheless, this congruency goes a long way to showing that the survey data is able to reflect actual behavioral data in a real game.

On the other hand, there are no perfect methodologies. Every methodology comes with its strengths and weaknesses. But the weaknesses of a methodology must be understood in their proper context and scope. Thus, while some argue that the sampling bias invalidates the study, it in fact has very little to do with the bulk of the findings presented at The Daedalus Project. Furthermore, their critiques often miss the important point that there are seldom optimal solutions to many problems. It would be nice if we could survey all MMO players. It would be nice if everyone were willing to fill out surveys. But social science researchers are not omnipotent and the world is not perfect. Thus, sometimes the most practical and sensible way to answer a question isn't perfect. But it would be unfair to judge The Daedalus Project against a perfect world of omnipotent researchers. Finally, there really isn't that much empirical information about MMO players – who they are, their preferences, and what they do in the game. And here's what I've always believed and what led to the genesis of the Daedalus Project. Knowing something is better than not knowing anything at all.

Play Spaces / Military Spaces

After the interview with Talon where the tension between casual and military-style guilds emerged, I was curious as to how many MMO players actually do have military experience. I asked respondents in a recent survey to indicate whether they currently are or ever have been in the military.

The MMO sample showed that about 17% of the male players and 5% of the female players have had military experience (including both veterans and active duty). This actually closely matches the US census information where about 13% of the population are veterans and .07% of the population are on active duty.

http://www.census.gov/Press-Release/www/releases/archives/facts_for_features/001630.html

Military Experience by Gender

		Military Experience			Total	
		Never	Veteran	Active		
Gender	Female	Count	423	19	3	445
		% within Gender	95.1%	4.3%	.7%	100.0%
	Male	Count	1643	269	75	1987
		% within Gender	82.7%	13.5%	3.8%	100.0%
Total		Count	2066	288	78	2432
		% within Gender	85.0%	11.8%	3.2%	100.0%

So, about 1 in 6 players you meet in an MMO has had military experience. Even though the occupational distribution of veterans is the same as non-veterans (and thus presumably, 1 in 6 people we meet in real life at our jobs has also had military experience), the frequency with which MMO players are in groups with a player with military experience is still interesting to think about. After all, we seldom work in 20/40-person groups in real life. It leads one to wonder how much influence these players have over the player community where high-end encounters almost necessitate military-style management and leadership techniques.

Some players note the sheer tactical brilliance of players who have had combat experience and the benefit of having them to lead raid encounters.

No, I am not, nor have I ever been, in the military. Many of my real-life friends and online friends are currently serving or have once been military members. I have discovered that game playstyles (especially any PvP aspect a game may have) is extremely influenced by the military background of players. My army friends love to play Planetside, and bombing runs with them are educational to say the least. While watching my one marine guildmate run a PvP Star Wars Galaxies raid was a stunning display of precision and tactics. For them, it is an aspect of life they have already been trained and prepared for. I find them to be excellent teachers on the subject of flanking maneuvers, stealth tactics and frontal assaults. [WoW, F, 29]

I was in the Marine Corps for 3 years. I would say that at least 1/3 of my guild has been or currently in the military. I think that this probably gives us better organization when the guild leader/officers gives commands during a raid/pvp because people have been in the situation before and follow orders first and question them later. [WoW, M, 39]

Others point out how the current MMO gaming mechanics are uniquely suited to players who have certain management and leadership skills that are acquired from military settings.

I have never been in the military, but have played with many who are. They tend to see each gaming session as another military 'exercise'. They tend to very much want to learn leadership skills, and don't really hide the fact that that is their goal. Military types tend to be the best of group members.. they are very good and understanding the importance of working together (technially and personally). [WoW, M, 41]

I served for a year in the Swiss military and I currently play with a friend who was in the US Navy. I would have to say that those in game that best understand tactics and how a group dynamic works best when everyone does their job are those that have some military experience. Taking orders is not something that comes naturally to most people. [WoW, M, 26]

Yes, I'm currently in the Air Force. Actually, the military made me take the game slightly more seriously from the point of view of a team player. It has made being part of a group easier because I don't question the moves or commands of the leader until after the battle/encounter. [EQ2, M, 22]

And despite the resistance of many players to Talon's comments, it does take highly-organized and highly-managed structures to achieve the high-end encounters in many current MMOs - a degree of organization that many guilds lack. Yet even as many players resist that militaristic structure, it is clear that MMOs (like WoW) are structured such that these high-end raids are meant as the pinnacles of achievement. Those epic drops from Ragnaros or Onyxia are the carrots at the end of stick. It's what your supposed to be working towards, right? Has your guild cleared Molten Core yet?

So what does it mean when game spaces become military spaces? But, of course, this is exactly the reverse of what's really happened. Gaming technologies (computers, graphics, networking) are technologies that all emerged from military applications (the Cold War specifically). So it's not the case that our current play spaces are becoming military spaces, but rather, digital gaming has always been deeply-rooted in a military logic that traces back to the Cold War - command, control, and conquer - even in fantasy worlds of elves and dwarves. It is that underlying logic that necessitates military structures of command and organization. And thus, the irony is that even as we resist military structures in play spaces, the deep-rooted military logic of digital gaming necessitates their existence.

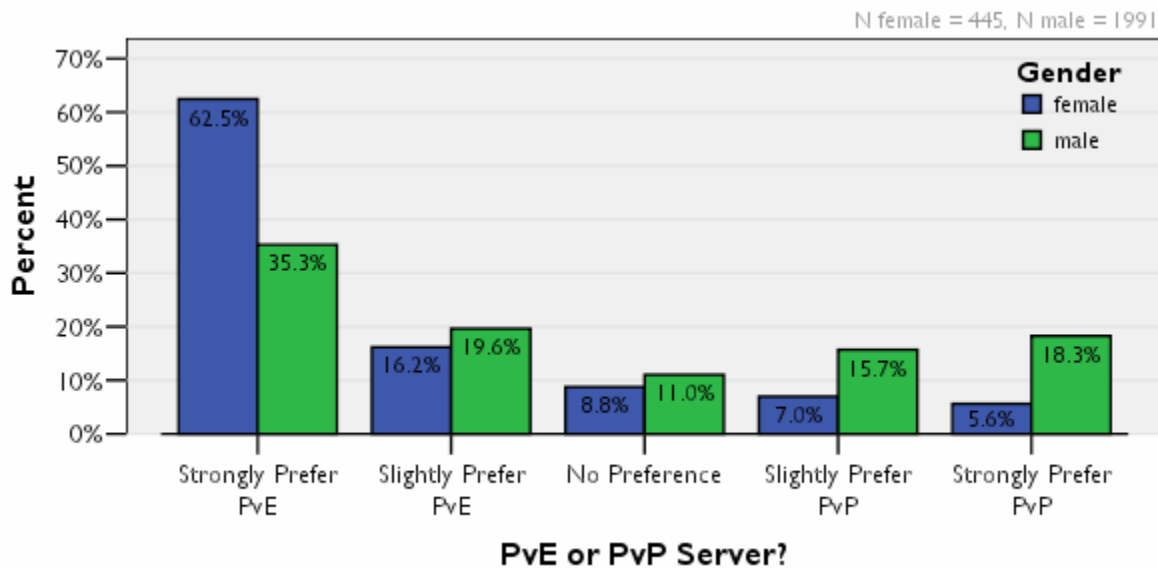
Server Type Preference

There are 3 main server types in current MMOs - PvE, PvP, and RP. The following are demographic and motivational differences among players with regard to server type preference. I was most interested in the differences between PvE and PvP servers.

Overall, female players are significantly more likely to prefer PvE servers while male players prefer PvP servers. There is also a substantial correlation with age - younger players prefer PvP servers ($r = .28$). A multiple regression showed that the Competition and Mechanics (min-maxing) motivations are the best predictors for PvP server preference ($r\text{-squared} = .32$), as would be expected. Together, this suggests that players on PvP servers tend to have a higher proportion of male players and also tend to consist of younger players.

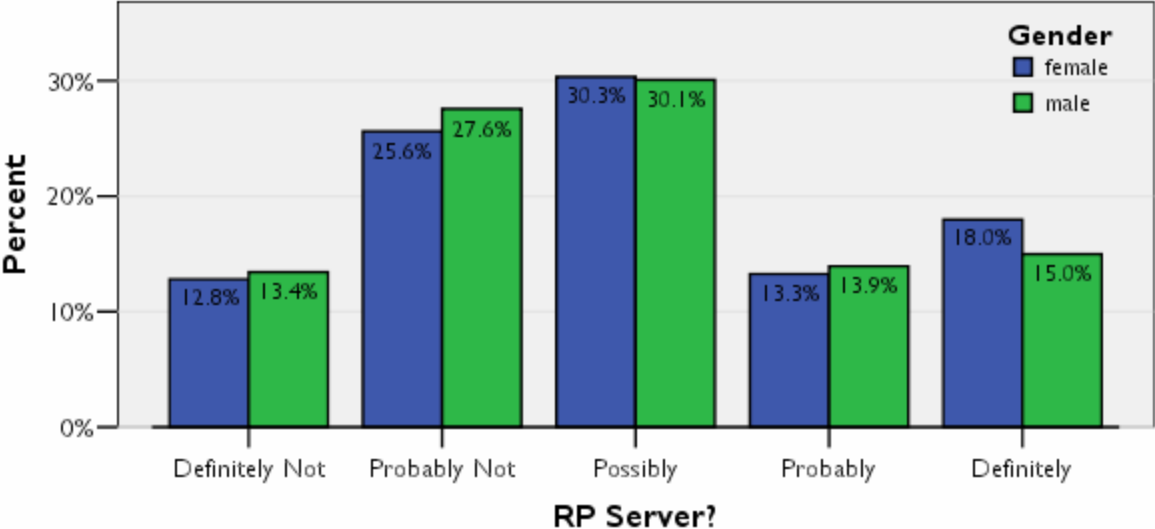
This has an interesting effect on gender-bending rates. The higher proportion of male players increases the chances that a female avatar is being played by a male players. On a normal WoW server where about 85% of players are male, there is a 50% chance that a female player is being played by a male player. If we assume that 90% of players are male on a PvP servers, there is an estimated 68% chance (about 2/3) that a female avatar is being played by a male player.

See: <http://www.nickyee.com/daedalus/archives/001369.php>



With regard to preference for RP servers, there are no overall gender differences. Men and women are equally likely to choose an RP server if it existed for their game. Age isn't correlated with RP server preference ($r = .02$). Unsurprisingly, a multiple regression showed that the Role-Playing motivation is the best predictor for RP server preference ($r\text{-squared} = .37$). So unlike PvP server preference, there are no demographic differences for RP server preference.

N female = 448, N male = 1992



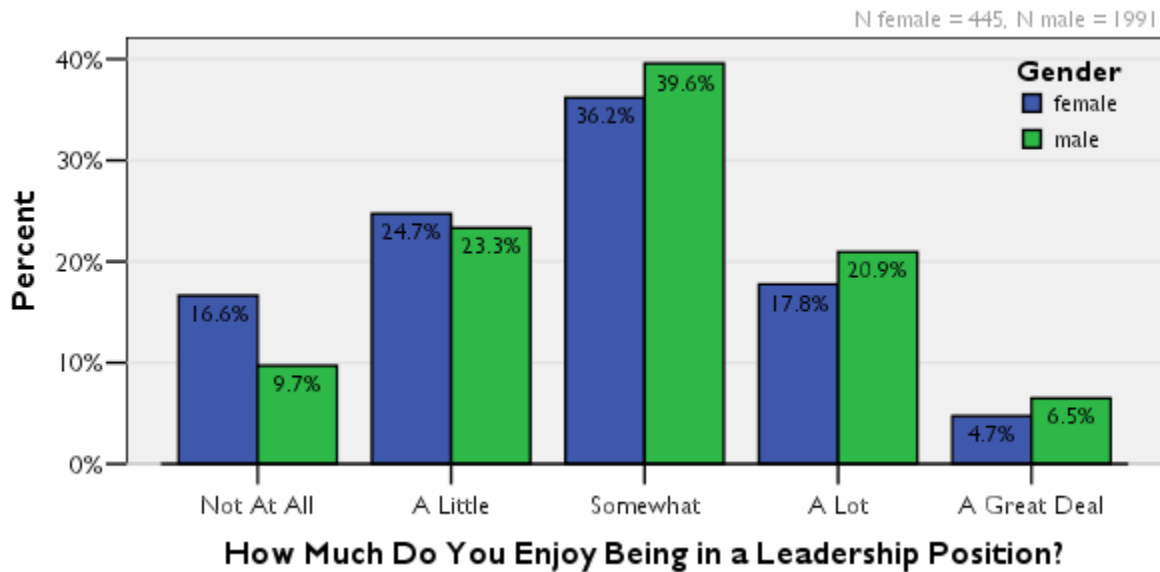
Summary of Server Type Preferences			
N = 2436			
	Gender	Age	Motivations
PvE	More Women	Older	Competition -- Mechanics -
PvP	More Men	Younger	Competition ++ Mechanics +
RP	No Difference	No Difference	Role-Playing ++

Being a Leader

Players were asked two questions:

- How much do you enjoy being in a leadership position?
- Are you a guild leader?

Overall, male players find leadership positions more enjoyable than female players and younger players are more likely to enjoy leadership positions than older players ($r = -.18$), but this does not translate into any differences in actual leadership likelihood. Proportionately, female players are just as likely as male players to be guild leaders (between 14-16%). Also, there is no age difference between players who are and are not guild leaders. And among players who are guild leaders, there is no difference between male and female players as to how much they enjoy being a leader ($p = .21$).



Guild Leadership by Gender

		Guild Leader			
		Yes	No	Total	
Gender	Female	Count	74	371	445
		% within Gender	16.6%	83.4%	100.0%
	Male	Count	281	1709	1990
		% within Gender	14.1%	85.9%	100.0%
Total		Count	355	2080	2435
		% within Gender	14.6%	85.4%	100.0%

A multiple regression showed that the Achievement and Socializing motivations are the best predictors for whether a player enjoyed being in a leadership role (r-squared = .17). On the other hand, the Relationship and Mechanics motivations are the best predictors for who was an actual guild leader (but this regression model was much weaker, r-squared = .05).

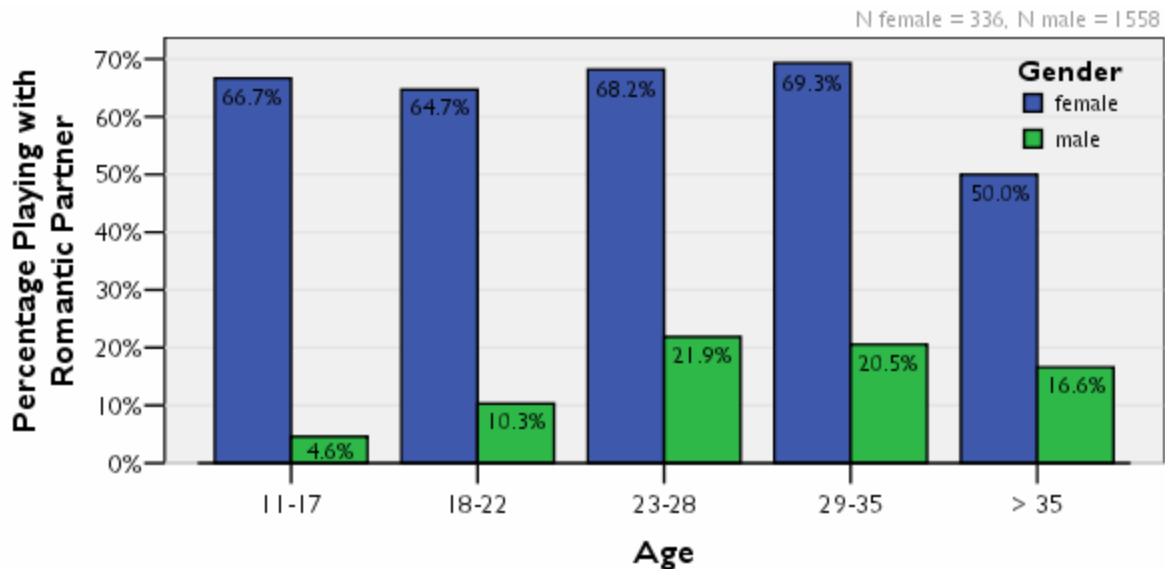
The disparities between desired and actual leadership are interesting. Even though younger, male players find leadership positions more enjoyable, this does not bear out among actual guild leaders. The shift in motivations is also intriguing. Perhaps we're seeing the difference between group leaders and guild leaders - the former more likely to be chat/social-oriented and the latter more relationship management oriented. The next step seems to be to explore whether guilds with male leaders are different from guilds with female players in terms of guild size and casual vs. hardcore.

Summary of Leadership - Desired and Actual			
N = 2436			
	Gender	Age	Motivations
Enjoy Leadership Positions	More Men	Younger	Achievement + Socializing +
Actual Guild Leaders	No Difference	No Difference	Relationship + Mechanics +

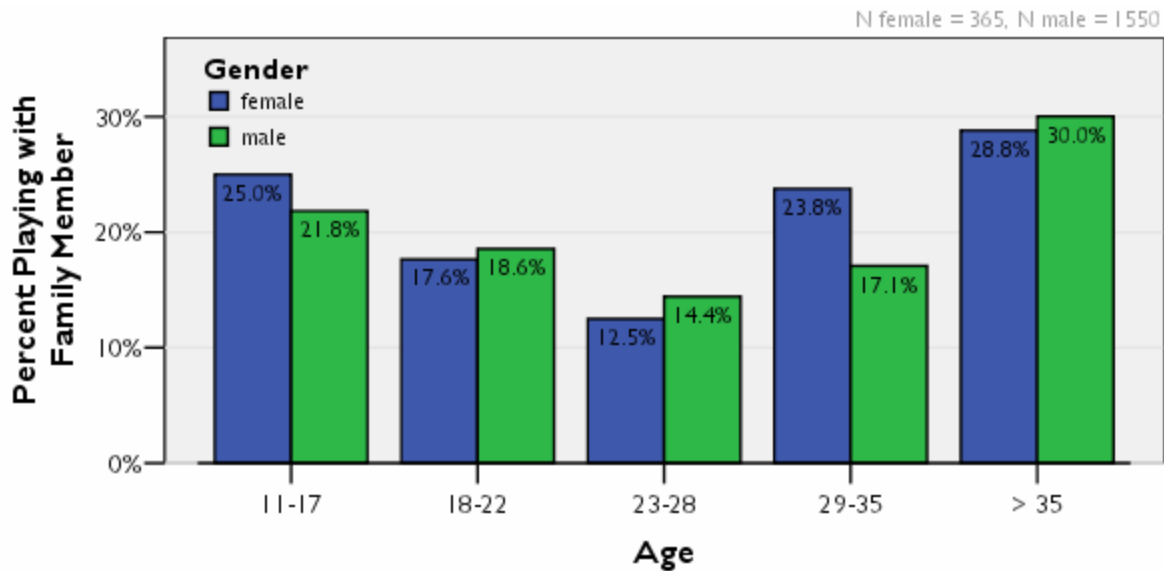
Playing With Someone

The media oftentimes portrays video gamers as being anti-social loners, but past data has shown that many MMOs players were playing with their family or with their romantic partner. Thus, it was clear that a non-trivial percentage of MMO gamers were playing with someone they knew in real life - that gaming wasn't always anti-social and wasn't always simply virtual. And it was also clear that friends, romantic partners, and family members were the 3 main categories of people that gamers were most likely to play with. But because I had never asked all 3 at once, it wasn't clear how much overlap there was. To that end, I finally got around to asking all 3 at once and that allowed me figure out the percentage of players who are and are not playing with someone they know in RL. All the following data relates to whether a player plays (on a regular basis) with someone they know in RL.

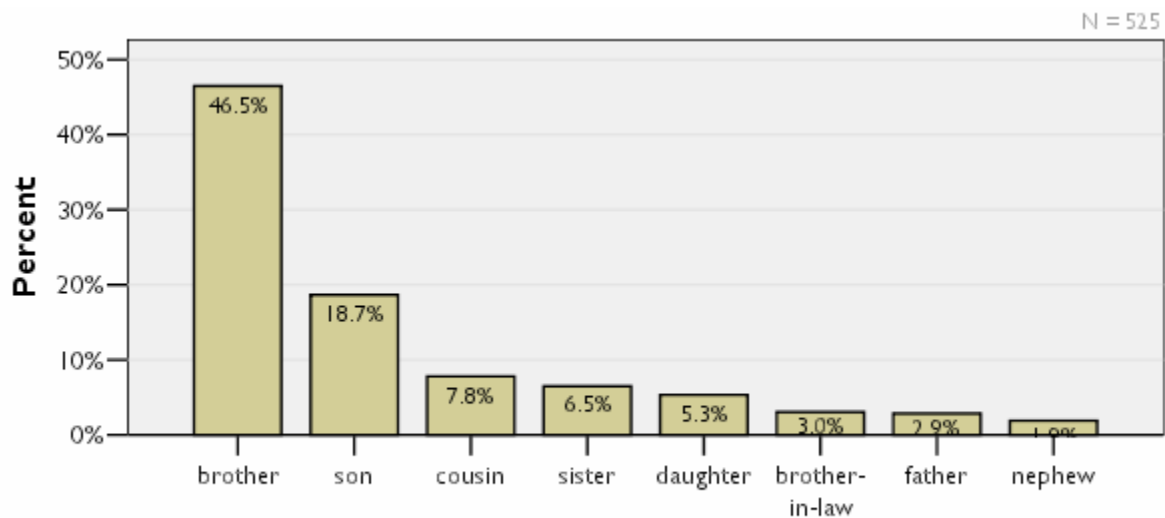
First, let's start with the MMO players who play with their romantic partners. Overall, 25% of players are playing with a romantic partner. As we've seen before, and particularly because of the gender ratio in MMOs, female players are much more likely to be playing with a romantic partner than male players.



I then asked about family members. For the purpose of this particular survey, respondents were instructed that husbands/wives counted as romantic partners and not family members. Overall, 19% of MMO players play with a family member (again, after excluding romantic partners). There were only marginal gender differences. As for age differences, it seemed that the 23-28 group (post-college, early career) were a little less likely to be playing with a family member.

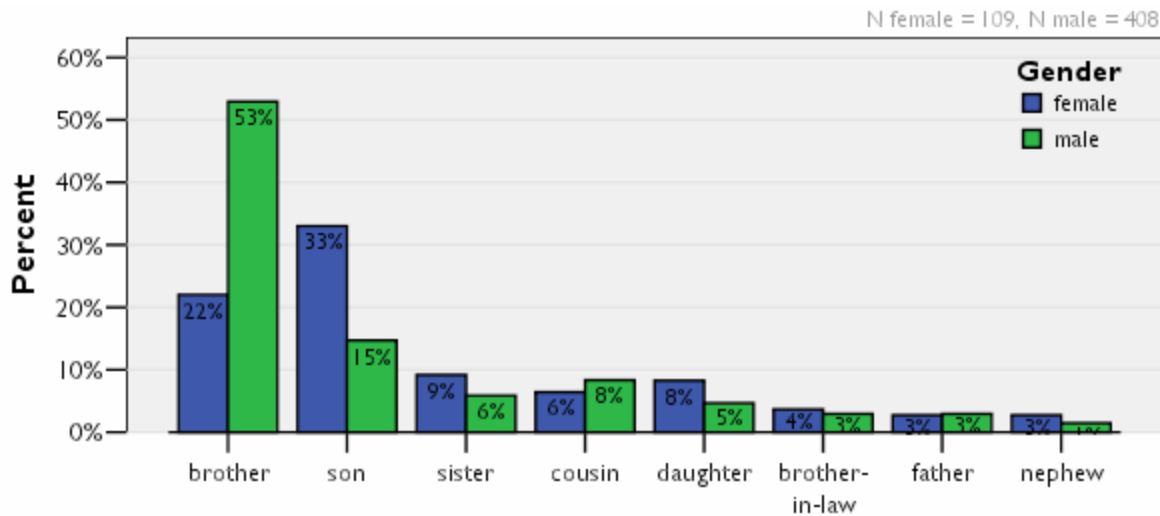


To get a better sense of who these family members actually were, respondents were asked to name the relationship of family members they play with. Overall, the most often listed family member were brothers, followed by sons.



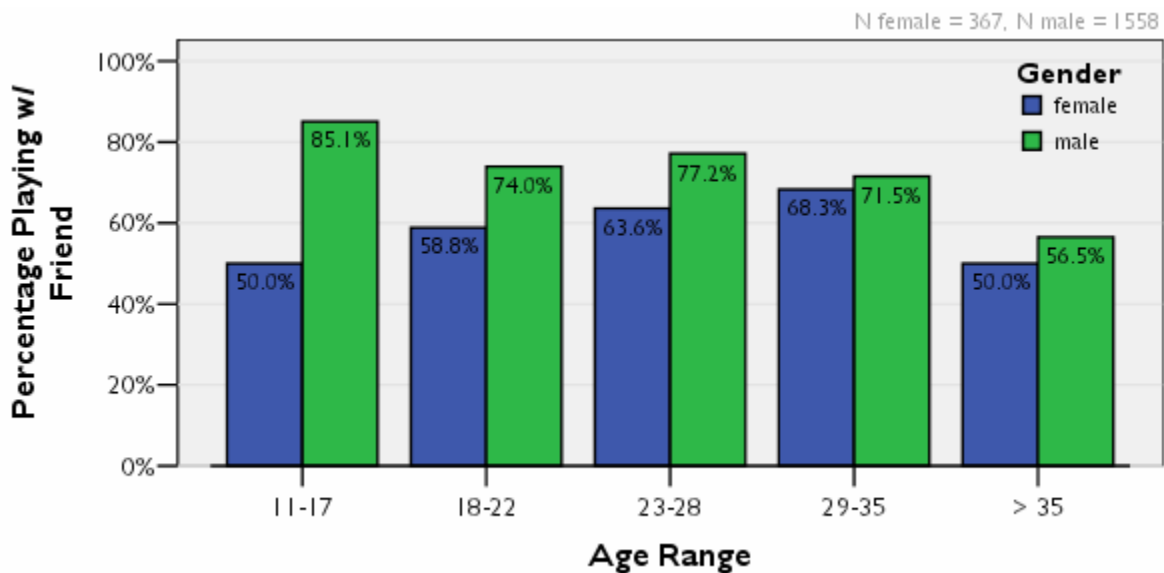
Top 8 Categories of Family Member

There was a clear gender split though. Male players were more likely to be playing with their brothers, while female players were more likely to be playing with their sons. Woven into this is also of course an age difference. It is the younger, male players who are more likely to be playing with brothers, and the older, female players who are more likely to be playing with their sons.



Top 8 Categories by Gender

And finally, respondents were asked whether they play with any friends that they know in RL. Overall, 70% of respondents replied yes. Gender differences seemed to diminish with age.

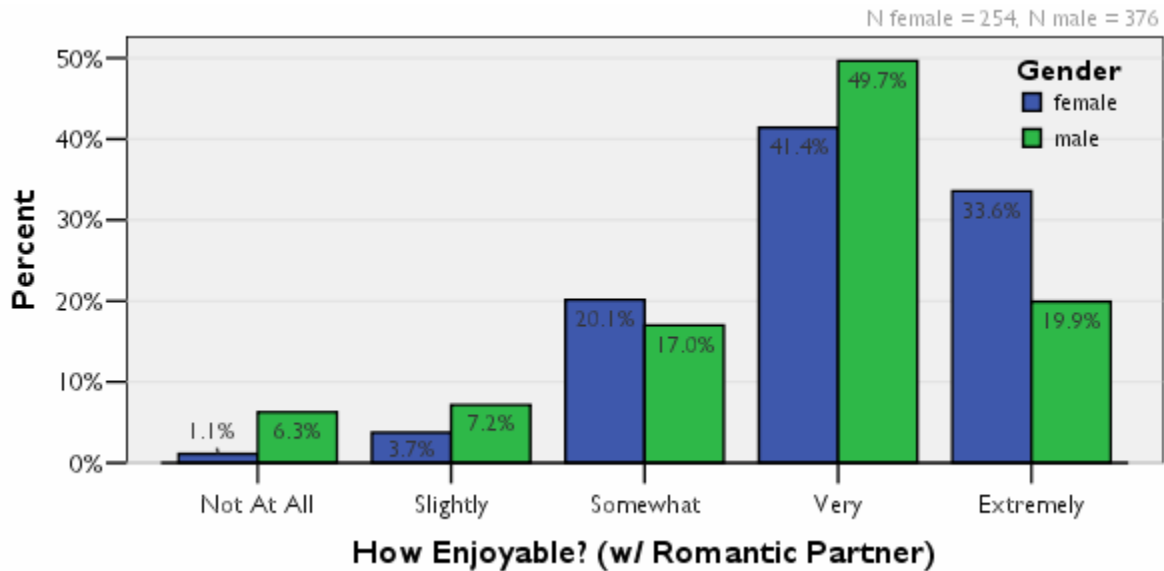


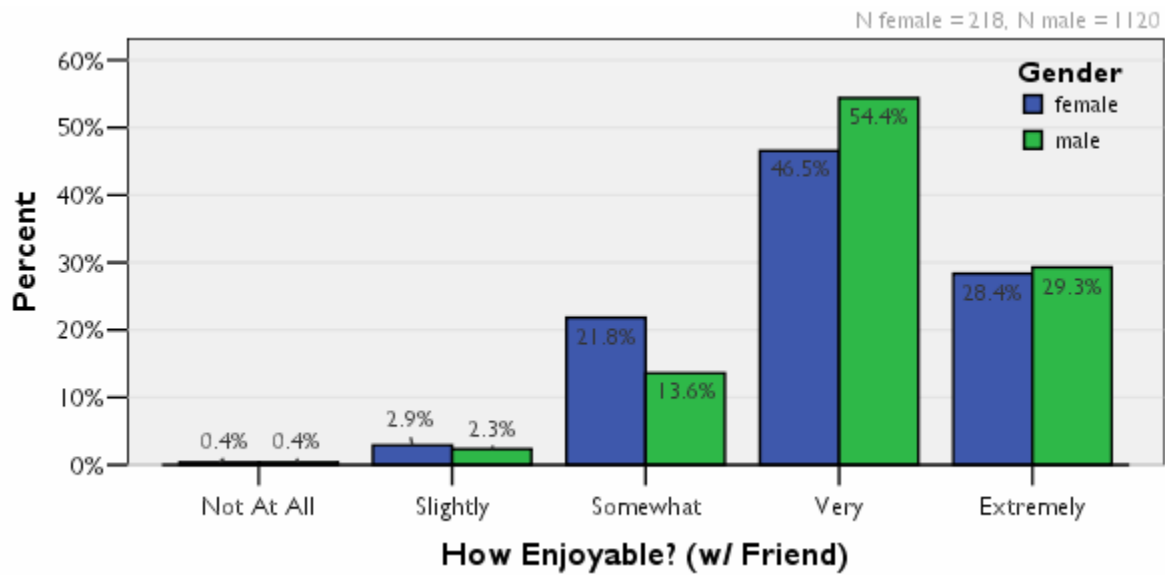
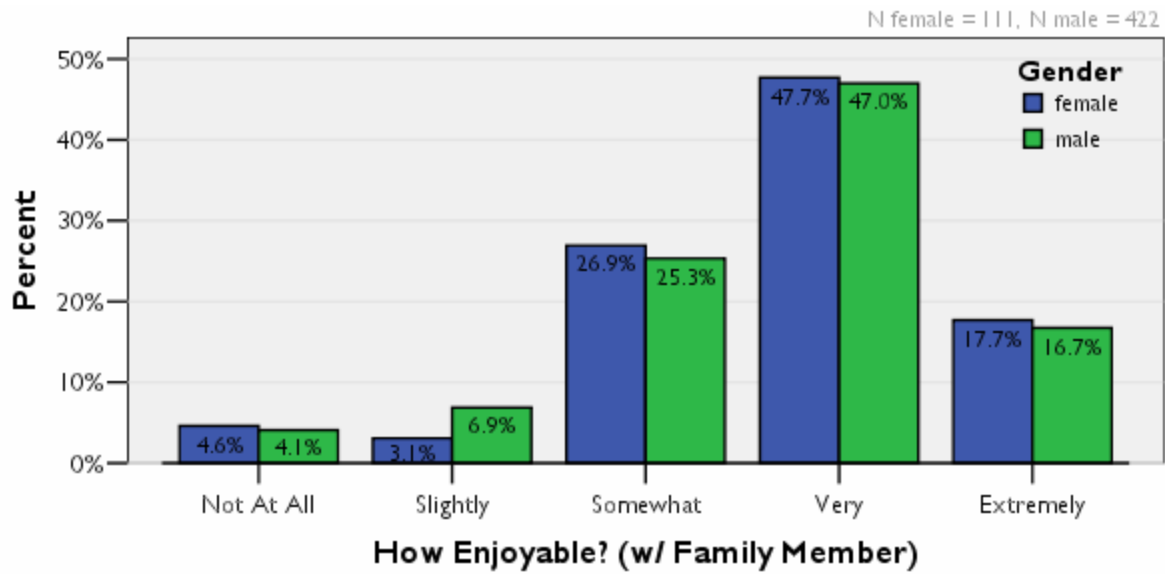
So now this data lets us get to the main question we had - overall, how many MMO players are playing with people they know in RL and how many are not. About 80% of players are playing with someone they know in RL on a regular basis. In other words, only about 20% of MMO players are playing a game and not playing with someone they know in real life on a regular basis. The following table shows the gender distribution. For example, the "Two" category means playing with people from 2 of the 3 categories (friend / family member / romantic partner).

Number of Categories by Gender

		Play With Someone Category				Total	
		None	One	Two	Three		
Gender	Female	Count	60	126	144	37	367
		% within Gender	16.3%	34.3%	39.2%	10.1%	100.0%
	Male	Count	333	818	360	47	1558
		% within Gender	21.4%	52.5%	23.1%	3.0%	100.0%
Total		Count	393	944	504	84	1925
		% within Gender	20.4%	49.0%	26.2%	4.4%	100.0%

Also, playing with people that are known from RL tends to be an enjoyable experiences for most of these gamers. The only gender difference appears to be among those who play with a romantic partner. Female players report more positive experiences with their romantic partners than male players report. Overall, these findings do show that the online game space can be seen as a place where existing RL ties are being strengthened.



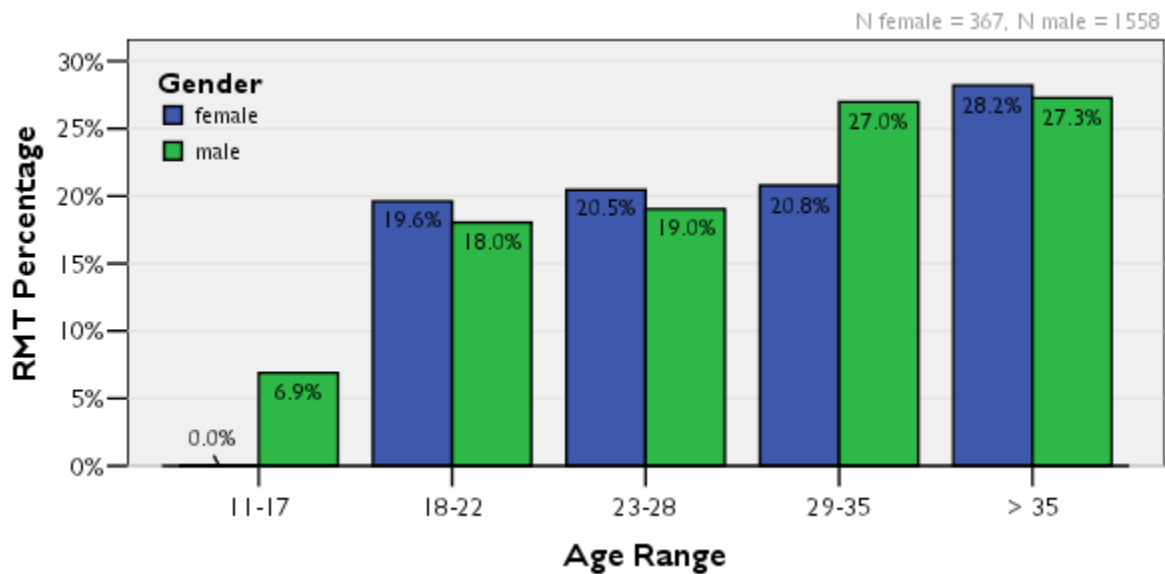


So even though some critics of online games focus on how ephemeral online relationships are, it seems that most players play with someone they know from RL on a regular basis. It also helps us see these online games as places where existing RL ties are being strengthened rather than simply places where only virtual relationships are forged.

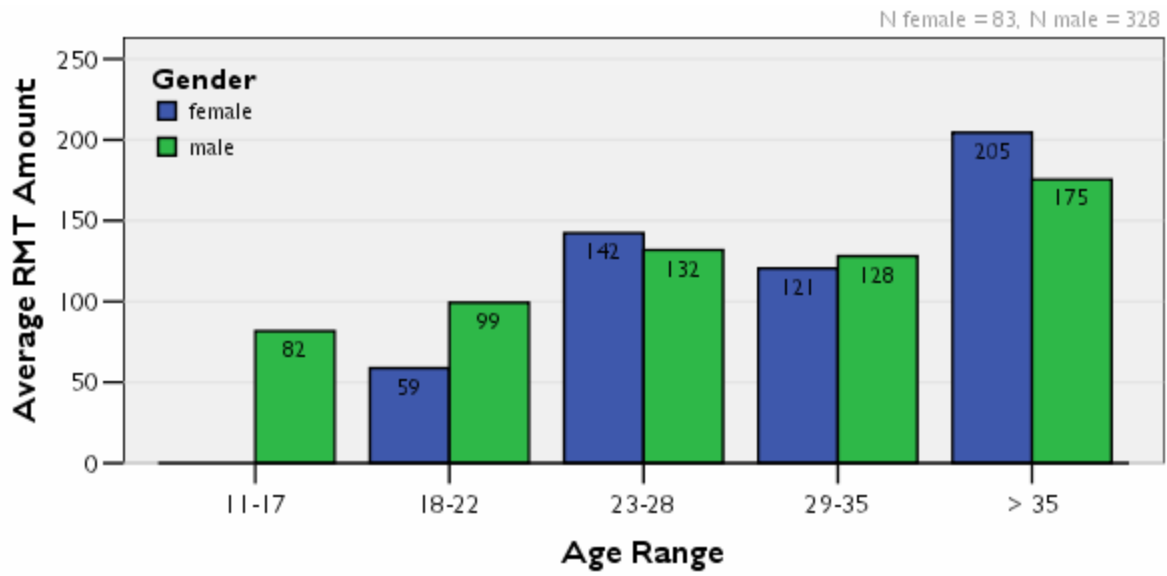
Buying Gold

How many MMO players purchase virtual currency? And how much real money do they usually spend on virtual currency?

In a recent survey (N = 1923), 22% of respondents said that they had purchased virtual currency (referred to here in shorthand as RMT - real money transfer). There was a mild correlation with age ($r = .11$) and no gender differences. In other words, male and female players were equally likely to purchase virtual currency. A multiple regression revealed that none of the motivations were substantial predictors of RMT likelihood ($r\text{-squared} = .04$) - although within the weak model, the Relationship motivation was the strongest predictor.



Overall, those players who have purchased virtual currency have spent on average 135 USD altogether. Again, there was a mild correlation with age ($r = .17$) but there wasn't a significant gender difference.



RMT Summary			
N = 1923			
	Gender	Age	Motivations
RMT Likelihood	No Difference	Older Players More Likely	None substantial
RMT Amount	No Difference	Older Players Spend More	None substantial

In Their Own Words

Graphs and tables can get the point across quickly, and averages make it easy to summarize thousands and thousands of people. But the tradeoff is losing that sense of individuality and the wonderful granularity of who MMO players really are. I've been asking respondents to give me short profiles of themselves and I just wanted to share a bunch of them as another way of showing who plays these games.

What these short profiles do get across is the diversity of people who we bump into in MMOs. Pick any 4 of these people at random and think about the last time you were in a 5-person group. There aren't many places in real life where such different people work together, but it happens all the time in MMOs.

Amelia is a 31-year-old self-proclaimed "computer nerd" from San Diego. She does graphic design as well as database architecture. She started playing WoW after her boyfriend introduced her to the game. Her main is a Dwarf Paladin. She's tried playing Horde, but she finds Horde players "a bit too aggressive".

Dawn is 29, a customer service rep for auto loans from Charlotte, NC. She's played EQ for 5 years and met her husband from EQ. She's recently stopped playing EQ but still "loves her druid".

Alex is a 17-year-old high school student from California. He's been playing MMOs since he was 11 when his father brought home a copy of EverQuest. At the age of 11, he was admitted to a high-end guild and took part in 8-hour raids.

Emre is 27, a grad student and lecturer in communication science in Berlin. In SWG, he's a female Imperial pilot. In WoW, he's a "holier-than-thou Human Paladin".

Al is a 60-year-old project manager for EDS working on a Continental Airlines project in Houston. He started gaming in the 80s with table-top D&D.

Jane is 46, a lawyer doing criminal defense work and juvenile defense from Akron, Ohio. She played D&D in college off papers mimeed from a guy named Gary Gygax. Before she graduated from college, their DM did manage to get an actual set of printed pamphlets. Nowadays, she plays EverQuest with 4 people in her family.

Bill is a 54-year-old firefighter for the US Forest Service from Oregon with 20+ years of firefighting experience. He plays EverQuest with his wife. He has a 51 ranger and a 47 rogue, but his wife says that "the rogue is more him".

Alex is 19, a college student majoring in political science at ASU. He enjoys playing female characters because "little boys generally think you're a girl and will be more lenient to you in bartering or just flat-out gives you things."

“Spark” is a 39-year-old computer scientist who specializes in security and works for a media and services company based in the Silicon Valley. She’s been gaming ever since Adventure on the mainframe around 1978, but only recently began playing an MMO - WoW.

Diane is 33, a professional mom from New Jersey. She got into Anarchy Online after a conversation with a fellow Lord of the Rings fan at a laundromat. She considers herself as more of a role-player than a gamer. Her ideal game “would be one where role-playing was mandatory, that didn’t revolve around phat loot or grinding out levels in hack ‘n slash type way.”

“Angel” is a 44-year-old documents editor for a policy research department and lives in Ewing, New Jersey. She started playing MMOs after her lover died - “It was something he and I had not done together, so I thought it would be the best way to focus on something other than the past. It’s helped tremendously with the healing process.”

Karen is a 50-year-old field service technician from southern California. She services high volume digital products and has been in the industry for 25 years. An ex-boyfriend introduced her to UO. She currently plays EQ2 with a romantic partner.

“Mander” is 35, a strategic marketing analyst from Los Angeles. She never took typing classes but now that she’s played MMOs, she’s really fast on the keyboard.

Lynn is a 45-year-old teacher from Arizona. She began gaming with table-top D&D. She was invited to participate in EQ’s beta and became a senior guide. That was also where she met her husband. Lynn has fun spotting the fake women in MMOs - “It’s actually pretty funny to watch...to see how men ‘think’ we are and portray it”.

Shawn is an army communications officer from North Carolina. He got hooked by UO after watching his fellow soldiers play during lunch and at night.

Tiffany is 37, a student in game design and development in Kentucky. She says that “a lot of people are amazed that I am a female gamer ... Another thing that seems to amaze people is my goal to finish college with a degree in gaming and get a job doing it. They all think I’m too old to do something like that and I am determined to prove them all wrong!”.

Peter is 54, a garage owner who manages a small car repair workshop in Devon, UK. He says his interest in EQ, his first MMO, was “a natural expansion from playing Dungeons & Dragons”. He usually feels awkward when he has to explain what these games are all about to non-gamer, but he says he doesn’t care anymore - “I enjoy it and that’s enough”.

“Mausie” is 26. She describes herself as a “severely underemployed part-time student”. She’s playing Final Fantasy XI currently, but recently got a copy of EQ: Scars of Velious. Her reaction - “I have no idea how such a difficult, unpleasant-looking, and poorly-designed-GUI-having game such as that became known as EverCrack”.

Tim is a 25-year-old MBA student from Boston. He's interested in going into the video game industry on the marketing side. He enjoys role-playing - "I always approach the game as a narrative, even if the story isn't explicit".

Claire is 35, a PC technician and digital photo restoration artist from Mountain Home, Idaho. She had lupus for 15 years and was unable to work. She says that "online games gave me a chance of socializing when I was unable to get out. It also gave me something to do to occupy my mind. I think I would've gone nuts without online gaming!".

Dan is 25, a broker living in Irvine, California. He says he plays because "growing up we were all tabletop D&D kids and this is just the newest incarnation of the same fantasy. I have done most things possible in this life but killing dragons isn't exactly something I can exactly do in real life".

David is a 41-year-old embedded systems programmer. He develops low-level software for embedded devices. He's a single father of two - one just hitting the teens. Both his kids play MMOs - "I spent a lot of time finding a good guild that we can all be comfortable with ... I worked to become an officer of the guild so that I can help keep the guild an appropriate place for my children".

Dustin is a 22-year-old server and cook for a Mexican restaurant in Yukon, Canada. His first memory of gaming is playing a 5-1/2 floppy on an IBM machine. In MMOs, he says - "I always go for the thieving, conniving, back-stabbing characters ... weird?".

"Jen" is a 30-year-old doctoral student in music. A significant portion of her research involves analyzing the music of video games. She began playing MMOs "to prove to my fiancé how stupid the games were". They're still playing together.

Nancy is 32, a researcher in a pharma/healthcare company. Her husband works in the IT department in the same company. They have always gamed together, but recently switched to WoW after it became a common topic of conversation in the lunch room at work. Every Tuesday night, 20 of them from work play together with their Tauren alts. They call it "Tauren Tuesday".