

What MMO Communities Don't Do: A Longitudinal Study of Guilds and Character Leveling, Or Not

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Abstract

Guilds, a primary form of community in many online games, are thought to both aid gameplay and act as social entities. This work uses a three-year scrape of one game, World of Warcraft, to study the relationship between guild membership and advancement in the game as measured by character leveling, a defining and often studied metric. 509 guilds and 90,581 characters are included in the analysis from a three-year period with over 36 million observations, with linear regression to measure the effect of guild membership. Overall findings indicate that guild membership does not aid character leveling to any significant extent. The benefits of guilds may be replicated by players in smaller guilds or not in guilds through game affordances and human sociability.

Introduction

Communities are a fundamental part of humanity and human history (Dunbar 2005). Historians have detailed how people consistently use media for community purposes across historical period and cultures (Standage 2013). Online games are a continuation of this historical trend to use media for community creation and reinforcement (Pearce 2010). An important type of community in some online games, primarily massively multiplayer online games (MMOs) with millions of players, is the guild, a long term group affiliation (Ducheneaut et al. 2007). Guilds are theorized to have many benefits for players, including helping players level their characters. Not all guilds, and not all games, are the same. Some guilds may focus on the game and gameplay (Papargyris and Poulymenakou 2004), while others take more of a social focus (Ang and Zaphiris 2010). Socializing in guilds can be so attractive that some people log into the game just to chat with their guildmates but not play (Ito 2007), although research has shown that social ties between guildmates can range from weak

(Ducheneaut et al. 2006) to strong (Cole and Griffiths 2007).

One of the primary ideas behind guilds is to help players coordinate, and so it follows that guilds should generally be large groups of players, yet work shows that most guilds are small (Ducheneaut et al. 2006; Ducheneaut et al. 2007). Nonetheless, small guilds can band together to form alliances with other guilds in order to accomplish difficult in-game content (Guthrie 2013; Chen 2012). Guilds encounter a wide range of challenges to their membership over time (Chen 2012; Ducheneaut et al. 2007), including personal issues, in-game issues, and even issues outside of the game beyond the control of players (Poor and Skoric 2014).

Taken as a whole, work shows that guilds are an important form of community with pro-social encouragement (Kaye and Bryce 2012) built into the code of the games, building on human's gregarious and communicative nature (Dunbar 2005). The social aspect of guilds potentially works hand in hand with their other main dimension: advancing characters through the challenges of the game, or character leveling. Leveling is where players complete tasks in order to gain experience for their character, which increases a character's capabilities. It is a common mechanism found across many games.

World of Warcraft

One MMO with both guilds and leveling that has received a lot of research attention is Blizzard's World of Warcraft (WoW). With a global reach and hundreds of servers (to accommodate millions of players, see Ducheneaut et al. 2006), WoW has, to date, been a huge success ever since its launch in 2004. It also has, until recently, overshadowed much of game studies research (Pearce 2010) due to its popularity with players and the resulting popularity with researchers.

Characters (that is, players) can explore the world on their own, or they can form groups with other players (up to

five in WoW). MMOs generally include code to assist in and reify groups. Players are invited to a group, and the game recognizes that they are together in terms of their interaction with each other and the game world. Generally speaking, together in groups players can take on monsters that are too powerful to take on alone. The extension of groups is the raid, that is, several groups working together. Both groups and raids are temporary associations.

Guilds, on the other hand, are typically longer-term associations with other characters (and thus players). Guilds can give players easy and trusted connections to other players. It is the potential for long-term association through guilds that is theorized to build trust between players. Guilds have names and can be part of a character's, and player's, identity. Many guilds are actually quite small—too small to form a group (Ducheneaut et al. 2007; Poor 2014), let alone a larger raid force, leading to alliances between players and guilds (Poor 2014). Guilds face certain social stresses (Chen 2012), and collaboration between guild members is important for gameplay and socialization (Chen 2009).

Work has shown, surprisingly, how characters that spend more time in groups actually advance in level more slowly than those who spend less time grouped (Ducheneaut et al. 2006). This is initially counter-intuitive, as groups allow players to conquer tougher challenges that give more experience. Yet this could be because those who play solo never have to wait for their other group members, either in terms of finding players to group with or during gameplay if a player needs to respond to something in the real world such as the phone, needs of a child, food, or a bathroom break.

With this work in mind, and with the available data, we can ask if belonging to a guild benefits players in terms of gameplay and leveling their characters. That is, do characters that belong to guilds level faster than those which do not?

Data and Method

The World of Warcraft Avatar History dataset (Lee et al. 2011) was collected by researchers, who have kindly made it available, for a three-year period between January 2006 and January 2009. Using WoW's "/who" command, which shows who else is on the server, researchers scraped basic information for all the characters on one server for one of the two factions in the game (the Horde). The scrape was essentially continuous, except for server downtime and a few errors, over the three years. This is similar to the method used by (Ducheneaut et al. 2007) for their large-scale study of guilds.

For the period between January 2006 and December 2008, there were 90,581 characters that belonged to 509 different guilds, with over 36 million measures taken. Data is available online in basic text format, and was worked on

using available tools in Python 2.7. Data for characters were condensed into weekly observations. Variables included character ID (anonymized), guild ID (anonymized), which week it was, and the character's class and level. From the over 36 million observations during the three years, the last two months of the data collection were dropped (in part due to a large number of seen-once characters), and over 610,000 character-week entries were constructed in the 148 resulting weeks. Of the over 610,000 observations, almost 275,000 were of characters that were not in a guild during a week. Approximately 15,000 characters changed guilds during the data collection period.

A variety of theoretically interesting variables were constructed from other variables in the data, as discussed in the results below. Characters at maximum level were an issue, as the maximum level increased twice during the data collection period, and the date differs slightly between the US and Taiwan. This was accounted for.

In order to measure the effect size of guild membership on leveling, linear regression was used. Because regression analysis calls for independent observations, each week was analyzed on its own in order to avoid having the entire time range of three years with many cases of the same character. Variables were normalized with the scikit-learn package's StandardScaler function from Python. Weekly results were then aggregated and summarized to observe patterns and outcome ranges.

Results

Results for an average week (week 20), average in terms of the adjusted R^2 and the beta for the guild membership factor, is shown in Table 1. There are 2,082 characters seen in this week, and the adjusted R^2 for the model for this week is 0.467.

Variable	<i>B</i>	<i>SE B</i>
Char Level	-0.0366	0.028
Guild Member	0.1203***	0.034
Guild Change	0.0522**	0.019
Age Char	0.2909***	0.020
Age Guild	-0.0545**	0.019
Guild Size	-0.2657***	0.065
Guild Max Levels	0.1877***	0.051
Guild Chars +/-10 Levels	-0.0762**	0.026
Times Seen	0.4251***	0.025

Table 1: Results for an average weekly analysis. Dependent variable: number of levels gained. Variables standardized prior to regression. Time of play and character class were included but are not shown.

* $p < .05$, ** $p < .01$, *** $p < .001$

The guild membership variable was significant at the $p < 0.000$ level 82 out of the 148 weeks (just over half the time), and was significant at the $p < 0.05$ level 127 weeks.

At the $p < 0.05$ level, the mean of the coefficient was 0.1165, with a minimum of 0.0679 and a maximum of 0.2464. (Recall that the variables were standardized.)

Measure	Mean	Max	Min
Adj. R^2	0.472	0.610	0.241
Guild Member B	0.1041	0.2464	-0.0218
Guild Member p	0.062	0.996	0.000

Table 2: Summary measures for the large model (Table 1).

Higher level characters actually leveled slightly more slowly than lower level characters, as found by Ducheneaut et al. (2006), although not in a statistically significant manner. Characters leveled faster in smaller guilds, similar to the finding by Ducheneaut et al. (2007).

Changing a guild had a small but positive effect, although it is too small to be meaningful. Characters that were older in the dataset leveled faster. The feature with the largest relative effect was how many times a character was seen during the week. The more you play, the more you level.

Models with fewer independent variables were also run, but did not improve the R^2 or the other measures and are not reported here.

The effect size of guild membership, given the variables were standardized, the other variables in the equation, and that guild membership is a Boolean value (and levels gained is an integer), is very small, effectively zero.

Comparative Measures

Baseline descriptives were taken to compare against the data from Ducheneaut et al. (2007). Their mean guild size was 16.8, the median size was 9, and the 90th percentile was 35. Here, in contrast, when summarizing monthly across each of the 36 months in the data used here, the mean of guild size means was 31.0 (compared to 16.8), the mean of guild size medians was 6.5 (compared to 9), and the mean of the 90th percentile was 85.7 (compared to 35). Additionally the mean of the percentage of one-person guilds was 20.8%, just over one-fifth. This data thus had much higher means and 90th percentile measures, that is, larger guilds, while the average of the median was lower, that is, more smaller guilds.

Discussion

Overall, belonging to a guild does not significantly help characters level. Although three years of data makes this a solid conclusion, there are still some caveats that need consideration.

One is that this could just be a statistical fluke for this server. There are hundreds of servers in World of Warcraft, we should expect there to be outliers. Despite known differences between some cultures (Inglehart and Baker 2000), and the issues around using WEIRD samples

(Henrich et al. 2010) (that is, Western, educated, industrialized, rich, democracies), there is no theory that would explain this specific outcome solely based on this data coming from one of the Asian servers. The WoW code is the same across all servers: all players have the same in-game challenges and affordances.

Also, although the game is “massive” in terms of player base, it is easy to play many MMOs alone like a solo game (Ducheneaut et al. 2006). Some players play the game solo all the way to the maximum level, never grouping with anyone or joining a guild, while still making use of in-game knowledge via asking in the in-game chat channels, and reading the wiki and forums.

Guilds could be for just serious players who want to play with other serious players. If so, then guilds would help characters level faster, but we do not see that in this data. And, the diversity of guild types and the large number of solo guilds calls this framing into question.

Individual Features

The question of player experience is convoluted. In Table 1 character level has a negative factor loading although it is not statistically significant. Although this agrees with Ducheneaut et al. (2007), in that higher levels take longer to achieve on a per-level basis, this doesn’t necessarily make sense. Character level is a proxy, but perhaps a weak one, for player experience. (Note that the difference between player, account, and character must be highly stressed, which some researchers fail to do.)

When a character was first seen, instead of character level, was significant. It is not a perfect measure, as the “oldest” a character could be in this view is the beginning of the data collection, that is January 1st 2006. The real “age” of a character, especially for those seen early in the scrape period, is probably older than this “when first seen” measure. This is another proxy measure for player experience.

When a guild was first seen—like when a character was first seen, it has limitations—has a small and negative loading in the model. One possibility is that, since many guilds fade over time, older guilds were in decline and not as helpful to the players in them.

Model Considerations

The average adjusted R^2 , 0.472, is a good result for social science modeling, although it suggests that there are other variables that are more relevant to character leveling. Player experience is a strong candidate, as it should help players navigate the game world better. There are a few proxies for player experience in the data. One, character level, had a negative factor loading, which is counter-intuitive except that other work (Ducheneaut et al. 2007) shows that leveling at higher levels is slower. The age of a character, another proxy for player experience, had a positive factor loading.

One issue could be that the guild membership measure does not distinguish between types of guilds. As all players know, there are different types of guilds, some are personal guilds, some are social guilds, some are casual raiding guilds, and some are hard core raiding guilds. Some guilds are for a player's secondary characters (alts). Many guilds have only one character (in this data, 20.8% of guilds had only one character). Another factor could be intensity of play, but that cannot be measured with the data here.

Conclusions

Guild membership does not materially assist in character leveling. Given that most guilds are small, as found here and in other work (Poor 2014), players with characters in small guilds would not derive some of the theorized social and informational benefits of guild membership, but still could from grouping, general chat, and web forums, bypassing the need for a guild. Guild alliances, where several guilds act together over time, are also known to both players and developers (Guthrie 2013), and it may be that groups of small guilds where the players work together across guilds act like very large guilds with social subgroupings (Poor 2014).

Playing time, unsurprisingly, was the most important factor in character leveling. But leveling is not the only in-game focus players may have: there is socializing, exploring, crafting items, harvesting, and auctioning items.

It is possible that guild *type* is an important consideration, but there are many types of guilds, an issue that has been simplified by some researchers. Guild size was not an appreciable factor, and although dropping small guilds from the analysis may help boost factor loadings, small guilds are not supposed to be detrimental to players.

Overall, the three years of data is a convincing story due to its extensiveness. Belonging to a guild, in general, does not help players level. Although it is clear that guilds are beneficial to players for many reasons, and should continue to be available to players in games, leveling is not one of the main areas of benefit when all guilds are considered. MMOs contain so much solo content, and indeed most are soloable all the way to the highest level, that leveling is not dependent on guild membership.

The reason may be people themselves. We are social beings. Although belonging to a guild should help, people will overcome any liabilities in small guilds or not having guild membership by being social with others, both in-game through chat and pick-up groups, and out-game in forums. It is likely that guilds do help players in many ways, but that those ways can be replicated by those not in guilds. That guilds probably do help is good design, but not being in one or being in a small one doesn't hurt, which is

also a testament to good game design and our pro-social tendencies.

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