

# **A Monument to the Player: Preserving a Landscape of Socio-Cultural Capital in the Transitional MMORPG**

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# **A Monument to the Player: Preserving a Landscape of Socio-Cultural Capital in the Transitional MMORPG**

Massively Multiplayer Online Role-Playing Games (MMORPGs) produce dynamic socio-ludic worlds that nurture both culture and gameplay to shape experiences. Despite the persistent nature of these games, however, the virtual spaces that anchor these worlds may not always be able to exist in perpetuity. Encouraging a community to migrate from one space to another is a challenge now facing some game developers. This paper examines the case of Guild Wars™ and its ‘Hall of Monuments’, a feature that bridges the accomplishments of players from the current game to the forthcoming sequel. Two factor analyses describe the perspectives of 105 and 187 self-selected participants. The results reveal four factors affecting attitudes towards the feature, but they do not strongly correlate with existing motivational frameworks and significant differences were found between different cultures within the game. This informs a discussion about the implications and facilitation of such transitions, investigating themes of capital, value perception and assumptive worlds. It is concluded that the way subcultures produce meaning needs to be considered when attempting to preserve the socio-cultural landscape.

**Keywords:** massively multiplayer online role-playing games, mmorpg, virtual world, socio-ludic world, synthetic world, migration, transition, Guild Wars

## **1 Introduction**

Change is an important element in any culture. It is often channelled by the emergence of different attitudes that seek to control and temper it. The role of change in cultures of play, however, is firmly grounded in the games they are centred upon. In massively multiplayer online role-playing games (MMORPGs), such change is often characterised through *transitions* of the mechanics situated within the virtual space. That is, the modification of individual in-game rules, changing the manner in which the game is played and leaving players to reposition themselves in a new order.

Typically, minor updates, bug fixes and the aggregation of new content merely prompt new interest. However, underestimating how transitions affect culture within an online community can lead to undesirable consequences, particularly when the change is fundamental or significant. In 2005, Star Wars Galaxies™ (SWG) (2003) implemented a large transition in the form of two patches. These updates, known as ‘The Combat Upgrade’ (Publish 15) and the ‘New Game Experience’ (Publish 25), replaced many of the core game mechanics<sup>[1]</sup>. This resulted in a backlash, shattering the community to a point where it “never truly recovered” (Bishop, 2010, p.1).

For this reason, game developers avoid sudden and unexpected transitions. Instead, they often update the game in small increments or prime their community by building up to a regular cycle. This allows the player experience to evolve gradually. Nevertheless, developers might not be able to maintain this practice indefinitely. They may create a sequel and encourage their existing customers to migrate to it. Guild Wars™ (GW) (2005) is currently attempting such a transition. A renewed virtual space is being offered, but the environment will be set several hundred years beyond the current state of the story and the developers claim to have created innovative new mechanics in their attempt to "question everything, making a game that defies existing conventions"<sup>[2]</sup>. Thus, each player will be required to create a new character to inhabit this new world. In order to help bridge this transition, a ‘Hall of Monuments’ was introduced with the most recent expansion pack. This mechanism attempts to preserve player accomplishments, such that dedicated players will be rewarded in the sequel if they choose to play the new game.

This raises several questions about the role of transitional objects for aiding virtual world migration. Notably, in this case, does the ‘Hall of Monuments’ effectively facilitate the migration to Guild Wars 2™ (GW2) (2012)? However, in order to fully

realise an answer to this question, it is first necessary to determine how the cultural facets within the virtual world operate so a suitable conceptual framework can be established. A framework is needed to guide such evaluation because, although the choice to migrate to a new virtual space is determined by individual players, the communal nature of online virtual worlds means that the decision can be influenced by the social groups to which they belong. This can be seen in the case of the multi-world collective identities of those involved in the *Uru Diaspora*, where many aspired to maintain their community as they migrated to other virtual worlds following the closure of Uru: Ages Beyond a Myst™ (2003) (Pearce, 2009). Given that there may be a distinct cultural element at work, examining player attitudes towards the feature can reveal factors that provide insight into how different in-game cultures will be affected by the transition. Highlighting challenges in this way provides a perspective on how the transitional object attempts to addresses the difficulties of the transition. Thus, this article focuses on three questions. Firstly, do players feel that the ‘Hall of Monuments’ has a meaningful role in the transition to Guild Wars 2™? Secondly, what are the factors that affect players’ perception of the ‘Hall of Monuments’ within the context of the virtual world migration? Thirdly, are there any significant differences between the dominant in-game cultures within the virtual world?

In answering these questions, this paper first investigates the nature of a transition within a virtual world. Using the Mechanics-Dynamics-Aesthetics (MDA) Framework (Hunicke, LeBlanc & Zubeck, 2004) alongside the concepts of capital (Bourdieu, 1986) and assumptive worlds (Kauffman, 2002), the cultures in Guild Wars™ are framed as a socio-ludic construct that seeks to preserve the “shared set of symbolic meanings” (Castranova, 2005, p.101) that already exists in the present context of the game. Applying this notion, a description of the ‘Hall of Monuments’ is presented

to examine how the feature attempts to address the challenges of the transition and how this may relate to different player preferences. This then leads into a discourse analysis, exploratory factor analysis, and subsequent confirmatory factor analysis of attitudes within the community, based on data collected from a focus group and an online survey. The results reveal several factors, which are analysed in terms of player motivations and cultural differences, prior to further discussion.

## 2 Transitions in the Socio-Ludic World

In order to appreciate the severe reaction of the SWG community as it transitioned to the new game experience, MMORPGs need to be considered as being more than “just a game” and more than just “virtual places” (Bartle, 2003, p.477-479). They are entities that nurture “both games and communities” (Ducheneaut *et al*, 2006, p.413). These two facets are tightly coupled and act together to describe a socio-ludic world, the aspect of a game's culture that shapes how players interact with the game, and ultimately how playing that game feels.

It is well understood that game mechanics will affect the player experience (Hunicke, LeBlanc & Zubeck, 2004) while communal interaction with a game's “structure (and by extension, designers) play[s] an incredible role in shaping culture” (Taylor, 2006, p.154). However, these dimensions alone do not fully appreciate the intricacies of the socio-ludic world. It is also the case that participation in a culture of play feeds back into the experience. In any form of shared fantasy, the friendships that players find, the adventures they experience together, the sense of status they accomplish and the demeanour they share each contribute to the way individuals affect each other's experience, in a similar manner to traditional tabletop role-playing games (Fine, 1982).

Consider the MDA Framework (Hunicke, LeBlanc & Zubeck, 2004) shown below in Figure 1. The game's *mechanics* are the individual specific rules of the game, as created by the designers. Many of these mechanics interact, collectively forming a large domain of possible interactions, and sequences of interactions, within the game. Players then produce their personal play experiences based on triggering specific subsets of these interactions through their own in-game actions. Each instance of this is referred to as a particular gameplay *dynamic*. Subsequently, the experience of any one dynamic will evoke its own specific set of sensations, that collectively become recognised as the *aesthetic*.

[Insert Figure1 Here]

Figure 1. An adaptation of the MDA Framework (Hunicke, LeBlanc & Zubeck, 2004)

However, the original model does not emphasise the player's role in determining which dynamics they choose to experience. Thus, the socio-ludic influence is illustrated above as a *culture* of play mediating the gameplay dynamic. Essentially, participation in a particular culture within the game will affect how members of that culture interact with the game's mechanics, thus accessing different dynamics. This is, of course, a simplified interpretation because there may be other factors that determine how players engage with the game mechanics. The reasons people play is diverse (Yee, 2006a) and often context specific (Begy & Consalvo, 2011). Nonetheless, as the complexity of online games increases along with the number of people that play them, the observable effect of this relationship becomes more profound.

In a large MMORPG, this arbitration of gameplay dynamics by cultures of play presents a challenge for a successful transitions because of the way it can disrupt the play experience. The ensuing discord occurs both directly through changes to the game

mechanics as well as through consequential shifts in culture. Then, as the community adapts to these changes and establishes a new order, the resulting cultural change can further influence the gameplay dynamic. Once this negative feedback system reaches a point of equilibrium, the resulting dynamic may produce an aesthetic that is distinctly different to that prior of the transition. In effect, "players then move into different play ecosystems where they transport and adapt their culture and play styles to the new context, [...] the new context also adapts to them, *a process which can at times be painful*" (Pearce, 2009, p.180, emphasis added).

This new aesthetic, in itself, is not the only implication of a transition in the socio-ludic world. A new dynamic can also influence how players produce and perceive cultural meaning. MMORPGs are traditionally games of progression so the cultures of play could, broadly speaking, be conceptualised in terms of *accumulated capital* (Bourdieu, 1986) where "the labor [*sic*] of productive players within distinctly social contexts" generates value within the community (Taylor, 2006, p.155). Unlike other types of computer game that will attribute a "quantifiable outcome" to each player (Salen & Zimmerman, 2004, p.80), they instead afford a *codified state*. Each play session, activity, or event in the game has an outcome that contributes to this state. For example, the acquisition of new equipment, increasing a character's level or forging new relationships with other players. A set of these codes may then be expressed by players and interpreted by their peers as symbolic forms of various types of capital, such as a distinct visual enhancement to an avatar when a rare item is equipped. When these symbols are combined with a social setting, providing "an audience, a sense of social presence and spectacle" (Ducheneaut *et al*, 2006, p.413), an economic performance is produced whereby members of the community augment their state according to their situated cultural context. In turn, several "audience-player interactions" (Ducheneaut *et*

*al*, 2006, p.413) reaffirm and encourage surrounding members of the community to participate in certain activities or practices, creating a flow of value and efficacy.

These performances, however, present a further challenge for a successful transition because the “structure of the distribution of the different types of capital at a given moment in time represents the immanent structure of the social world” (Bourdieu, 1986, p.242). With social structure being influenced by game structure, significant changes to the latter can radically challenge existing social paradigms. If the resulting discord affects the meaning of symbols within the codified state in an unexpected or unfavourable manner, then the player’s *assumptive world* (Kauffman, 2002) becomes fragmented. That is, the player’s own “cognitive representation of, on one hand, valuations that organize the self, and, on the other, the value of a sense of connection and belonging” (p.206) is disrupted by the change. This could render a player’s perceived capital depreciated or unknown in the new socio-cultural landscape. Consequently, players may question their values, leaving those whom are unable to reconcile them to abandon their present culture, or perhaps even quit playing the game itself.

### **3 Exploring the Hall of Monuments**

In the most recent expansion of Guild Wars™, the developers introduced a ‘Hall of Monuments’, shown below in Figure 2, in which players can visualise their accomplishments in the game. Furthermore, the feature is a shared space that will bridge certain elements of the game with the forthcoming sequel. This gives it the potential to preserve various forms of capital when the community migrate to the new virtual environment, protecting aspects of the codified state and in doing so avoiding any perceived loss of meaning of the accomplishments in the existing game.

[Insert Figure2 Here]

Figure 2. The ‘Hall of Monuments’ as it appears in-game (© ArenaNet™, used with permission)

The Hall operates much like an ‘achievement treadmill’ (Jakobson, 2011). As players fulfill some predefined criteria, they unlock statues that can be put on display. The conditions are spread across five categories: ‘devotion’, obtaining in-game pets which are offered as rewards for challenging quests or as gifts to players that have played the game for a long time; ‘fellowship’, recruiting non-player allies and upgrading them; ‘resilience’, collecting special prestige armour sets; ‘valour’, forging rare powerful weapons; in addition to ‘honour’, a collection of titles that have been earned. In general, many of the criteria can be fulfilled through completing specific quests and through trade, but the honour track is of particular interest because of its co-dependence on the existing titles system and the diversity of activities that it offers.

As players engage with particular activities within the game, they accumulate points towards a title for that activity. This includes gameplay elements such as completing optional bonus objectives in missions, vanquishing every opponent in particularly challenging areas, and even spending time in a state of virtual intoxication with sugar or alcohol. Once enough points are obtained, this unlocks the relevant title, allowing it be displayed beneath their name. Often, collecting even more points allows players to upgrade their title to a more advanced version, many of which contribute to the ‘Hall of Monuments’.

The reason this is particularly noteworthy is the manner in which these titles, which represent nearly half of the monuments available to unlock, interact with the of the Hall. These achievements are collapsed into a single track of progression that offers

virtual incentives, such as veteran titles and bonus items, in the sequel. Players may log into a browser-based version, shown below in Figure 3, to see what rewards they can expect to receive in the new game as they add monuments to their Hall.

[Insert Figure3 Here]

Figure 3. The web-based representation of the ‘Hall of Monuments’ (© ArenaNet™, used with permission)

This could demonstrate a potential conflict with the way several more overt forms of capital were previously compartmentalised and expressed. Exploring how this has affected the different attitudes towards the feature could reveal more about how capital operates in the socio-ludic world and suggest improvements to the design of transitory systems that may be of benefit to virtual world designers.

#### **4 Research Method: Focus Group and Online Survey**

In order to determine attitudes towards the ‘Hall of Monuments’, qualitative methods were utilised to inform the development of a quantitative social survey. A retrospective of 900 hours of personal gameplay experience combined with an in-depth discussion with a focus group of six volunteers helped to devise an initial pilot survey consisting of open-ended questions. Each member of the group possessed expertise in a variety of activities in the game and, based on the in-game ‘/age’ command, claimed 7791 hours between them ( $mean = 1299$ ,  $min = 421$ ,  $max = 2643$ ,  $SD = 601$ ) across a mean of 50 months ( $min = 16$ ,  $max = 72$ ,  $SD = 22$ ). After several iterations of design, pre-test and amendment, the pilot survey was deployed online through SurveyMonkey™. It was then promoted across multiple game-orientated websites<sup>[4]</sup> that were recommended by

the focus group.

A discourse analysis of the data provided by this pilot contributed to the understanding of perspectives in the community, illustrating a variety of attitudes and positions. The general themes found included: the dominance of titles and the ‘honour’ track; whether players find titles fun, like them, value them, take pride in them, pursue them for their own enjoyment, or have shaped their play based on them; use in-game titles and other virtual assets to show-off, get noticed by peers, as symbols of prestige, to demonstrate their ability, form part of their identity or use them to impress; whether players care about or want the special items and veteran titles in the forthcoming game; and whether players find value, meaning, pride and investment in the game.

Incorporating this new understanding, a second survey was deployed online using the same method. This survey included several nominal sections that captured participant demographics as well as in-game activity preferences. Two 5-level Likert scales were included to examine attitudes towards the ‘Hall of Monuments’, based on these general themes, (25 items) and measure play motivations based on Yee's (2006) taxonomy<sup>[3]</sup> (40 items). Sources of bias, such as acquiescence bias, were minimised using item order and positive-negative randomisation. Furthermore, redundancy was incorporated by randomly repeating items as well as including both positive and negative variations of some items to help identify inconsistent cases. The survey remained online throughout April 2011, during which time it was successfully completed by 105 respondents.

To ensure complete and valid data, several additional cases were excluded based on providing: obviously false data such as an impossible date of birth; duplicate entries as identified by IP address, email address or character name; inconsistent responses to repeated questions; or a submission that did not answer all of the required questions.

The factor structure of the data was then investigated using exploratory factor analysis in PASW 18.0.3 for Windows. Items were re-coded and combined according to their positively-keyed variant. Where minor discrepancies existed, the rounded mean value was used. No other data transformation or parcelling techniques were used.

Following this analysis, ten respondents that had opted-in to further research participation were selected at random and invited to an in-game interview. This provided an opportunity to clarify certain responses while examining the rationale for certain factors in more depth.

Of the participants that provided demographic data ( $N = 96$ ), 79% claimed they were male, 19% female and 2% other. The mean reported age was 29 years ( $min = 15$ ,  $max = 58$ ,  $SD = 8.9$ ). Furthermore, 58% claimed they had never stopped playing the game, while others claimed they were not playing (15%), only played intermittently (22%) or played specifically to collect the Guild Wars 2™ incentives (4%). The mean reported duration of play was 54 months ( $min = 1$ ,  $max = 72$ ,  $SD = 19.2$ ).

A limitation of this approach was the use of a self-selected sample, rather than a randomised sample, as it was not possible to collaborate with the virtual world's service provider, ArenaNet™, to distribute the survey. Using self-selected participants may only provide limited insight, but Yee (2005) notes that criticisms are often overstated. It is claimed that some relationships between variables can be validly teased out despite their representativeness. For example, potential interactions between gender and motivation despite a skewed sample (Yee, 2006). Yee (2005) also explains that the appeals of surveys and forum membership are unlikely to interact with the relevant factors. This does not mean, however, that this study is representative of the entire Guild Wars™ population, therefore the extent of the potential skews should be considered when interpreting these findings. Potential bias may have been introduced

through the use of an experienced focus group in addition to using specialist websites to promote the surveys. Hence, it is likely that this study best represents those dedicated to following the game. Even so, although this limits the perspective, loyal players within the existing community and culture are, in themselves, an interesting population to examine because they could be the most affected by a transition.

Another limitation to note is the size of the sample in the context of conducting a factor analysis. The overall number of participants and the participant-item ratio were acceptable by some rules of thumb (Hatcher, 1994) while being inadequate by others (Gorsuch, 1983). However, some of these recommendations were "proposed largely out of ignorance rather than theory or research" (Gorsuch, 1997, p.541) with later work suggesting the required sample size and ratio may not be consistent across studies, but vary according to several properties of the underlying data (Velicer & Fava, 1998; MacCullum *et al*, 1999). Thus, particular attention has been given to interpretability, based on prior qualitative enquiry and the strength of the data available. Nevertheless, there is a concern that such a small sample may not produce generalisable or replicable results (Costello & Osborne, 2005).

In order to alleviate any concerns, another sample was obtained in May and July 2012. The same data collection method was used, with the following exceptions: the study was also advertised on the official Guild Wars 2™ discussion forum; a more parsimonious measurement of Yee's (2012) taxonomy was deployed (12 items); and several of the items relating to the 'Hall of Monuments' were modified or replaced based on the previous analysis to eliminate cross-loading and provide adequate overdetermination of the proposed factors (20 items). This survey was successfully completed by 187 participants and the new data set was subject to a confirmatory factor analysis in AMOS 18.0.0 for Windows.

The second sample was of similar composition to the 2011 sample. From those providing demographic data ( $N = 164$ ), approximately 80% reported that they were male, 16% female and 3% other. The mean of the reported age was 28 years ( $min = 15$ ,  $max = 68$ ,  $SD = 10.3$ ). Furthermore, the mean reported time elapsed since players started playing the game was 56 months ( $min = 1$ ,  $max = 90$ ,  $SD = 26.4$ ). Independent sample t-tests suggested there were no significant differences to the previous sample on these variables. However, 43% claimed they had never stopped playing the game, while others claimed they were not playing (10%), only played intermittently (37%) or played specifically to collect the Guild Wars 2™ incentives (9%). This represents a greater proportion of players returning to the game intermittently, or specifically to collect incentives prior to the release of the forthcoming sequel.

## 5 Exploratory Factor Analysis

A principle axis factoring of the correlation matrix from the validated survey data ( $N = 105$ , 2011) provides some insight into the attitudes towards the ‘Hall of Monuments’ and its co-dependence on the ‘titles’ system. As it was anticipated that any potential factors could be correlated, an oblique direct oblimin rotation ( $\delta = 0$ ) was applied.

Of the 25 items that were captured, several were subsequently excluded from the analysis. The item "when I look at my titles I feel [good / bad] about how I spent my time" demonstrated questionable internal consistency ( $\alpha = .65$ ) when assessed for reliability with redundant items and positive-negative randomisations. Other items were removed because their communalities were low ( $< .4$ ). These were "[being a good player / titles] are more important than [titles / being a good player]" ( $c = .154$ ), due to overwhelming consensus in the community (87.5% agreed that being a good player was

more important, with only 1% in disagreement), and "grinding to get titles is an [acceptable / unacceptable] activity" ( $c = .387$ ), potentially due to the negative connotation of the term 'grinding' because it can be considered an undesirable activity. The remaining 22 items had a Kaiser-Meyer-Olkin measure of sampling adequacy of 0.842 and Bartlett's test of sphericity was significant ( $p < .000$ ).

The analysis revealed five possible factors based on Kaiser's criterion of having eigenvalues greater than one, while Cattell's scree plot criterion indicated that either two or four factors should be interpreted. After examining the possible solutions, it was decided that the four-factor solution, shown in Table 1, was the most interpretable, accounting for 65.2% of the overall variance.

[Insert Table1 Here]

Table 1. Select output from a principle axis factor analysis of the 22-item attitude Likert scale, using an oblimin rotation.

From this analysis, it can be seen that the four latent factors include: satisfaction, the level of satisfaction that players experience as they accumulate titles; peer recognition, the way in which players relate, contextualise and use titles to express their in-game achievements with respect to their peer group; incentive, the perceived attractiveness of the virtual incentives on offer; and value perception, the idea that titles in-themselves have worth or meaning.

These factors were selected based on the pattern matrix having a simple structure of item loadings showing one factor greater than 0.5 with no others above 0.32. However, several additional complex loadings were present. These cross-loadings included items pertaining to reward, pride, shaping play and reviewing titles. These constructs can be sensibly related to both personal satisfaction and peer recognition

because of their potential social contexts, such as reviewing titles with friends or being proud of obtaining a title few peers possess. Other items related to caring about and wanting the special titles available in the forthcoming game also cross-loaded with the incentive, satisfaction and peer recognition factors. This could be sensibly interpreted as players deriving satisfaction from a culture of expressing capital, and thus desiring a status of veterancy in the new virtual environment or just possessing a self-driven interest in collecting unique titles, which they intend to continue.

## **6 Confirmatory Factor Analysis**

The item pool was revised based on the previous analysis and post-survey feedback. All cross-loaded items were removed, so a simple measurement model could be specified. The items "I [am/am not] impressed by players with specific titles" and "my titles [are/are not] part of my identity" were removed due to their ambiguity as some participants reported they were unsure which "identity" or "specific titles" the items attempted to query. The item "I [value/do not value] the titles I accumulate" was removed as it demonstrated questionable face-validity in the presence of the 'value perception' factor. To help capture the meaning of the 'satisfaction' factor, the item "the variety of tasks required to get titles are [interesting/boring]" was added. Furthermore, to help capture the meaning of the 'peer recognition' factor, the item "my titles [confer a/do not confer any] sense of veterancy" was also added. Finally, to provide adequate over-determination for each proposed factor, a new item "in-game titles are [important/not important]" was added to 'value perception', while "the Hall has [been/not been] an incentive for me to play" and "I [want/do not want] virtual incentives provided by the Hall" were added to the 'incentive' factor.

The data from the survey ( $N = 187$ , 2012) were tested to verify assumptions of normality. Each item was univariate normal, based on the criteria proposed by Curran, West and Finch (1996). However, some multivariate non-normality was demonstrated, based on Mardia's normalised estimate of multivariate kurtosis (12.05). Removing 17 outliers, identified by having a Mahalanobis squared distance greater than 35 from the centroid, resulted in acceptable multivariate normality (3.74). However, because this represented 9% of the sample, analyses were performed both with and without the outliers.

The confirmatory factor analysis was applied to the covariance matrix using the maximum likelihood method. In the case with outliers, a 2000-sample bootstrap technique was also used to estimate bias-corrected  $p$  values (Bollen & Stein, 1993). Using Hu and Bentler's (1999) criteria, the fit indices provided in Table 2, indicated that the proposed four-factor model demonstrated adequate fit.

[Insert Table2 Here]

Table 2. Fit indices for a maximum-likelihood confirmatory factor analysis of the 4-factor attitude model.

The solution, shown in Table 3, was screened for common method bias, which was marginal. During the analysis, the model demonstrated questionable discriminant and convergent validity, on the 'peer recognition' factor, with an average variance explained of 0.49, falling short of the recommended value of 0.5 (Hair *et al*, 2010). Of seven error terms allowed to be correlated, based on the modification indices, four were within this factor. This suggests that there may be an additional factor, or further underlying structure, relating to 'peer recognition' with the proposed items. Removing the items "I [believe/do not believe] my titles reflect on my ability as a player" and "my titles

[confer a/do not confer any] sense of veterancy" improved the average variance explained to an acceptable value, while also improving fit. Thus, these items have been discarded from the model in order to produce adequate discriminant and convergent validity.

[Insert Table3 Here]

Table 3. Select output from a confirmatory factor analysis using the maximum-likelihood method on the proposed 4-factor attitude model.

## 7 Cultural and Motivational Differences

The in-game cultures in Guild Wars can, broadly speaking, be conceptualised in terms of participation in one of the two game types: PvP (Player versus player) or PvE (player versus environment). In the words of one participant:

There is just a world of difference between the two types of gameplay and the motivation behind. [M, 20]

However, while this polarisation is reasonably clear from a perspective within the game, the survey results do not reflect this. Although 42% of the 2012 sample claimed to participate in PvE without any participation in PvP, only 4% claimed the opposite. Most players engaged with PvE, even if only at a "casual" level. This presented a challenge in making a clear distinction between members of each culture. Consequently, a latent class analysis was conducted using LatentGold 4.5.0 for Windows. This identified any potential clusters in the play activity responses.

A 3-cluster solution was identified based on minimising the Akaike Information Criterion (AIC), Catell's scree plot criterion using the L<sup>2</sup> statistic, and a non-significant model  $\chi^2$  difference ( $\chi^2 = 40.22$ , df = 30,  $p = 0.1$ ). These clusters included: no-pvp,

casual-pve; balanced interest; and casual-pvp, hardcore-pve. Each participant in the sample was classified to one cluster based on the highest posterior membership probability.

Before proceeding to generating composite scores, Yee's (2012) parsimonious inventory was validated through a confirmatory factor analysis. Common method bias was negligible and the data demonstrated acceptable multivariate normality based on Mardia's estimate (2.35). The analysis was applied to the covariance matrix using the maximum likelihood method. However, the model did not demonstrate adequate fit to the data.

The item "grouping with other players" had a low squared multiple correlation (.331). This may be because 70% of participants preferred to play in a team with artificial intelligence, rather than play with other people (26%). This conflicts with high levels of guild membership (85%), which would suggest a social-orientation. This could indicate that many players enjoy playing independently, but still seek support and discussed regularly with their companions. The item "creating a background story and history for your character" was also very low (.182). This may be because, unlike other titles in the genre, the PvE element of the game has a significant emphasis on a linear narrative that pre-defines characters' background and story. This suggest that when using Yee's (2006) motivation model, items should be selected with care when applied to different games. As such, these items were excluded from the analysis.

The adapted model demonstrated adequate fit according to Hu and Bentler's (1999) criteria, as shown in Table 4 and demonstrated adequate convergent as well as discriminant validity, as shown in Table 5.

[Insert Table4 Here]

Table 4. Fit indices for a maximum-likelihood confirmatory factor analysis of Yee's (2012) parsimonious motivation scale alongside adaptation.

[Insert Table5 Here]

Table 5. Select output from a confirmatory factor analysis using the maximum-likelihood method on the adapted motivation inventory.

Both the proposed 4-factor attitude model and the modified motivation model were subsequently tested for configurable, metric and scalar invariance. The criteria for invariance was a non-significant result on a chi-squared difference test as constraints were applied to each model (Hair *et al*, 2006). To achieve invariance across the cultures, the item "competing with other players" was removed. The metric variance may have been caused by players' differing interpretation of "competing" because the different game modes offered direct and indirect forms of competition. Having removed this item, both models demonstrated adequate model fit and invariance across cultures.

Having met the assumption of scalar invariance, this allowed composite scores to be generated and the different groups to be compared using a series of t-tests. Scores were imputed using a weighted sum procedure of each item on the Likert scale using the estimated factor score as the weight. The casual audience that avoided PvP was compared to the balanced culture that enjoyed PvP. This demonstrated several significant differences in terms of satisfaction, value perception and incentive as summarised in Table 6.

[Insert Table6 Here]

Table 6. Results from independent sample t-tests comparing differences on each factor between the cultures identified by the play preference clustering.

These results show that players immersed in the PvP element of the game were less

interested in the rewards offered by the ‘Hall of Monuments’. However, peer recognition scores exhibited only a modest non-significant difference. It can also be noted that there were no significant differences in terms of play motivation between the two groups. This suggests that both the PvP element of the game and the PvE element of the game equally appeal to different play motivations, yet their attitudes were different.

The small impact of motivation on these attitudes can be seen from a Pearson's correlation test. As shown in Table 7, the only significant correlation found between motivation and attitude were between achievement, satisfaction and peer recognition. This suggests that achievement-orientated players are more receptive to the activities involved in the Hall, while other motivations have little impact.

[Insert Table7 Here]

Table 7. Results from a Pearson's correlation test on composite scores for each factor.

## 8 Discussion: The Attitudes of Monumental Players

It has been shown that the ‘Hall of Monuments’ has various meanings for the Guild Wars™ community. Responses were broad, and included the feature being: a campaign that promotes vanity; a glorified menu system; a mausoleum for the players’ characters; and a parting gift from the game’s creators. However, many responses<sup>[5]</sup> can be summarised with the sentiment described below:

As GW2 is a continuation of GW, however far set in the future, the new feature is a nice conduit for preserving the deeds the ancestors of the GW2 heroes (aka, your present characters). It will make a believable part of the lore while also giving bonuses to the current fans. [F, 37]

While many players appreciate the intent of the feature, the diversity of the the

responses demonstrates a vast range of cultural and personal meanings that have been attributed to the feature, beyond its function as a system that attempts to preserve player capital. For many, it has had an significant role in their experience, acting as a catalyst for them to engage in new activities, while for others it was not an important part of the game, with some already meeting all of the criteria as soon as the feature was released or simply choosing not to engage with it.

The system did appear to appeal to a range of different player motivations. Drawing on Yee's (2006) three-factor model, due to its empirical foundation and wide applicability, the achievement-orientated players enjoy collecting all of the different items and titles that the feature requested. Immersion-orientated players appreciated how the Hall entwined with the lore of the world, connecting the history of their present characters with their future descendants. While, to some extent, socially-orientated players reported that it was a new space that presented an opportunity to reminisce with friends. Those high in both social and achievement orientations reported it was an opportunity to show off their accomplishments.

While the feature had properties that appealed to different player motivations, prominent elements of the feature did seem to overshadow this. The most notable topics of dispute included: the diversity of the activities in the game; how accomplishments are measured; and the value of particular achievements. Many members of the community seem to acknowledge the feature as being synonymous with an 'achievement treadmill' produced by the title system, a distracting meta-game similar to that described by Jakobson (2011), and this form of gameplay does not appeal to everyone.

These borders can be succinctly summarised through four factors: satisfaction; peer recognition; value perception; and incentive. Some players did not think that the range, and perceived weight, of some of the activities endorsed by the Hall were

enjoyable. Others did not feel that their peers would recognise the achievements. These two facets were slightly correlated with the resulting value which players placed on ‘titles’, one of the core artefacts that counted towards progression. While a minority of those participating did not feel drawn to the incentives that were being offered in the new virtual space.

A potential influence on a player's position within these factors is that of culture. There are distinct modes of play in Guild Wars™, based on ‘player versus player’ (PvP) and ‘player versus environment’ (PvE), that generate quite different over-arching cultural attitudes. Some PvP-orientated players felt they may miss out on a sense of being a veteran of the series because, from their perspective, the feature fails to capture the essence of what should be preserved:

It is geared towards PvE [Player versus Environment], rather than PvP [Player versus Player] so it is a bit pointless for me. [M, 23]

Thus, in its present form, the feature privileges certain subcultures over others. This is because it only rewards prescribed forms of capital, and collapses many of them into a single line of progression. Thus, only players who enjoy collecting items and achievements in most of the PvE domains of the game can utilise the feature to its full potential.

It could be argued that this socially-driven collector-orientated form of play is a dominant culture that encourages people to participate:

After all, GW is all about vanity. Titles, armour, weapons. Whereas other games rely on stats, GW relies on the ‘look’. This is what is important to the GW player. [M, 40]

A significant correlation was found between the achievement and social motivations, which is not consistent with previous work (Yee, 2006; Yee, 2012), alluding to the

types of player this particular title may attract. However, the survey found that very few players reported they identified with PvP culture exclusively, while there was only a small non-significant difference in peer recognition across the groups. This suggests that peer recognition operates in a similar fashion, but the ‘titles’ system, for the most part, does not recognise the accomplishments of those engaged in PvP to the same extent as the PvE counterparts.

It is important to understand that “people choose to play games for very different reasons, and thus, the same video game may have very different meanings or consequences for different players” (Yee, 2006, p.774). Additionally, it is also important to recognise that different cultural attitudes can emerge within virtual worlds. Kunjapää, Manninen & Vallius (2007) argue that value perception is a function of motivation, but they do not account for these cultural elements that contribute their own systems of values. No significant differences in play motivation were found between members of the cultural groups explored in this study, yet significant differences in attitude were. Furthermore, only mild correlations between achievement and attitudes towards the Hall of Monuments were discovered, with others being non-significant. So, while their framework offers a broad overview, the extent of this relationship may not be absolute. Cultures do not appear to be defined solely by the motivations of individual players, but by the game dynamics and community an individual chooses to engage with. This has implications for the design of transitional objects because it indicates that systems of value, particularly accomplishment, can be influenced by social groups as much as by individual motive.

With values being as much a product of culture as motivation, it is arguable whether players will remain in a similar subculture after they have migrated. The transition may create an opportunity to participate in another aspect of the game and

several participants stated that they were looking for a ‘new experience’. This may result in making a preservation of the codified state ineffective. Nevertheless, from a business perspective, players that genuinely want a ‘new experience’ may potentially move on to a different product. This would appear to hinge on what is meant by a ‘new experience’. It could mean an ‘evolved experience’. Something that is novel, but still familiar enough to be consistent with the existing world and the experiences it offers. Nonetheless, many of these players described themselves as ‘invested’ in the world so they may wish to preserve their achievements for nostalgic purposes. They themselves will understand the extent of their own achievements and take pleasure in the potential of public display:

The HoM is a museum of my achievements over the past 5½ years. [F, 29]

Even if players discover new activities to enjoy, it is unlikely that players would choose to sacrifice a good status for a fresh start. Some players have gone as far as legal action when their game accounts have corrupted (Kunjapää, Manninen & Vallius, 2007).

Preserving capital for any returning player, however, is challenging because regardless of the activities they choose to pursue, they “will very often judge their current game by the first one they got into” (Bartle, 2004, p.2). Since they are invested in the previous game, they expect the next game to provide a more profound experience in comparison. This type of expectation is reinforced by the model of the assumptive world. Assumptions within a worldview are challenged, potentially resulting in lost senses of safety and comfort (Kaufmann, 2002). This experience is not as traumatic as Kaufmann (2002) implies because of the context of its use, but in virtual worlds, players are capable of leaving an experience they do not enjoy. Nevertheless, Bartle (2004) explains that this is a challenge that faces developers because players will not stop

thinking about how the world could be changed to be more like their previous experience:

[E]ven if their current world is, by any objective standard, manifestly better in all areas than their first one [...] they will ask for elements of their first world to be added even if those were partly responsible for its demise (Bartle, 2004, p.2).

This may suggest that some players seem to protect themselves within the “safety provided by assumptive world beliefs” (Kauffman, 2002, p.211) by engaging in a form of playful conservatism. They want to preserve their enjoyment of the game, despite that a certain amount of change is expected to help maintain it. This is a difficult balance that designers need to maintain. While such comparisons occur, this does not mean that change and innovation are going to cause widespread problems. If an engaging experience is maintained, then players will return for the community. The performances within the socio-ludic world only contribute part of the excitement of playing in a virtual world.

Ultimately, Guild Wars 2™ will create new experiences for players. This will affect the structure of the socio-ludic world and consequently the language of the codified state. While the ‘Hall of Monuments’ does not seem to cater to the whole community, it translates many experiences and provides a large number of players with the sense of ‘veterancy’ they desire. Overall, the survey indicates that the feature has had a reasonably positive reception, and conducting any activity that helps to “win over [the] community so that they are forgiving of [developers]” (Vogel, 2005 in Duffy, 2005, p.1) will benefit the integrity of cultures within any virtual world.

## **9 Summary & Future Work**

Etheredge (2009) asserts that Guild Wars™ is a ‘simulacrum’ (Baudrillard, 1994), a simulation that blends the real and the virtual to the extent that “interactions can become

so real that players disconnect from reality” (p.120). While it is true that it is an immersive artificial space, the socio-ludic world is not as disconnected from reality as this implies. The forces that make and shape the game, forging our experiences, friendships, and accomplishments within it, are real, regardless of their economic value in our contemporary world. Furthermore, many players feel that these forces are important and hold meaning. Thus, in this cultural context, a dichotomy between the virtual and the real does not exist (Lehdonvirta, 2010).

In this respect, it could be said that the imaginary has real effects. A transition risks a profound impact on the socio-ludic world, having real consequence for the players within it. Applying Bourdieu's (1986) concept of capital and Kaufmann's (2002) model of the assumptive world, the extent of such an effect can be broadly understood in terms of an assumed language that describes meaning via symbolic capital. As players participate in the game, they accumulate relationships and artefacts that form a codified state, a representation of their experiences within the game that they may then wish to express. This leads to some players enacting a social dance, immersing themselves in a socio-economic performance in which they continually augment their state (Ducheneaut *et al*, 2006). Consequently, forming a language of meaning that is reinforced by others. Unfortunately, a transition can challenge this language, potentially altering the self-perception and sense of belonging of those occupying the socio-ludic world. This loss of safety to form assumptions about the world creates a barrier that may discourage some players from accepting change.

In order to mitigate this issue during the transition to a forthcoming sequel, Guild Wars™ introduced a ‘Hall of Monuments’, a transitory system that facilitates the migration to a new virtual space. This shared space preserves several forms of capital by creating a display that blends part of the codified state across the two spaces. The

feature has received a somewhat positive reception, but a number of players have adopted critical attitudes towards it. Factor analyses of data from two surveys revealed that there are at least four factors that influence these attitudes, including: the level of satisfaction experienced when engaging with activities that contribute monuments; a sense of peer recognition; the appeal of the incentives that will be available within the new virtual space; as well as the manner in which meaning is produced and interpreted within a personal or cultural context.

This shows that the different values that players possess can be a challenge in attempting to preserve capital. However, understanding culture within a socio-ludic world can help identify those values. The Mechanics-Dynamics-Aesthetics Framework posits that players experience different play dynamics that emerge from the range of mechanics available (Hunicke, LeBlanc & Zubeck, 2004). As systems become more varied and complex, cultures of play also emerge from these mechanics (Taylor, 2006) and, due to social interaction within a game, can become a mediator of which dynamics a player may choose to experience. This has an influence on the values and attitudes that a player may possess and thus, to varying degrees, the language of the codified state can be different for each subculture.

In this case, two cultures were investigated: the PvP-orientated players and the PvE-orientated players. Only a mild correlation between achievement-orientated motivation and 'satisfaction' as well as 'peer recognition' were found. Despite this, and there being no significant differences between the cultures in terms of Yee's (2006) motivational taxonomy, there were significant differences in attitude. This suggests that attitudes are not solely shaped by individual motivation. Furthermore, the 'Hall of Monuments' privileges certain forms of meaning production over others, by encouraging players with a preference for collecting items and titles in the PvE elements

of the game. This penalises other players, whom might hold capital of a different form and consider themselves to be high-standing veterans. By no means does this assure a disastrous impact on the community, but it does reveal that the design is not robust in preserving the codified states of at least one subculture.

In conclusion, this article questioned how the socio-ludic world is shaped by games and their communities. The findings show that the way players accumulate and express capital is not a unified system. Thus, players hold many different interpretations of the ‘Hall of Monuments’. The different cultures of play that emerge in virtual spaces each have their own ways of producing and interpret meaning. So when players identify with a particular culture, it can influence the language of their codified state. Consequently, developers need to appreciate the differences that exist between members of their community. When deploying a transitional object, it may not be effective to define a single pathway to preserve a player's sense of participation and accomplishment. Many players desire a sense of ‘veterancy’, but can feel excluded if the available pathways do not conform to their expectations.

It could be argued that there are somewhat dominant cultures within a population. However, there was insufficient evidence to verify this claim. A variety of play motivations and attitudes were found, both within each culture and overall, despite the small scale of the surveys conducted. Furthermore, these were limited through the use of a self-selected samples and a small focus group. Hence, the surveys themselves should not be considered as representative of the entire population or containing an exhaustive ethnographic mapping. The method used to classify each participant was, although based on the author's own experience within the virtual world, a blunt approach because many different subcultures and hidden populations may exist within or beyond the two core aspects of the game studied. An ongoing longitudinal survey and

ethnography, once performed over a reasonable period, may reveal how and what motivations and subcultures emerge in this particular game.

It should also be noted that the attitude of players may not necessarily speak directly to the effectiveness of the transitional object. While culture has an important role in a transition and should be considered when performing an evaluation, the impact and effectiveness of the object itself can only be revealed after the release of Guild Wars 2™. A follow-up study can perform a retrospective analysis, which alongside the data presented here, may more clearly identify important issues and suggest further improvements to systems supporting virtual world migration.

## Acknowledgements

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[1] An archive of patch notes remains available at:

<http://starwarsgalaxies.station.sony.com/players/content.vm?id=64886&resource=publish>  
(Accessed 11 April 2011).

[2] The ArenaNet MMO Manifesto is available at: <http://www.arena.net/blog/guild-wars-2-design-manifesto> and <http://www.youtube.com/watch?v=FU1JUwPqzQY> (Accessed 06 August 2012).

[3] The items for Yee's (2006) taxonomy are available in the pre-print edition which can be downloaded from: [http://nickyyee.com/pubs/Yee%20-%20Motivations%20\(2007\).pdf](http://nickyyee.com/pubs/Yee%20-%20Motivations%20(2007).pdf)  
(Accessed 07 August 2012).

[4] The survey was advertised on several popular Guild Wars fansites including:  
GuildWarsGuru., GuildWarsInsider, CrossingTyria, PreSearing, GuildFans, GuildHall-2, NeoSeeker.com, INCGamers, MMORPG.com, MPOG.net, and when it became available, the official Guild Wars 2 forum.

[5] Responses have been edited for clarity and readability.

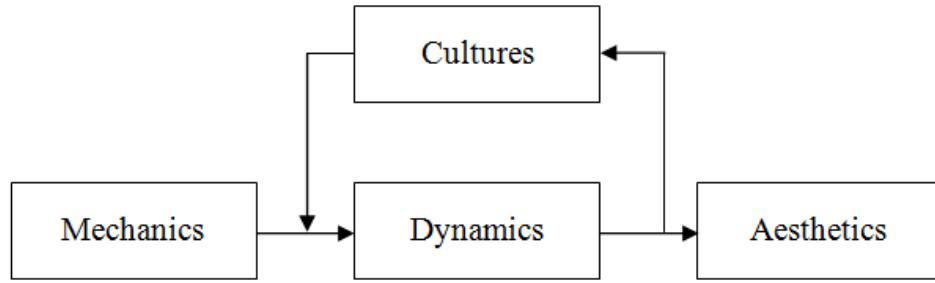
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**GUILDWARS2** Hall of Monuments Reward Calculator BETA

Ibuki Helios

SPREAD THE WORD

**19** /50

**Deldrimor Mace**  
An ancient dwarven mace

Print Save or Share

Reward Meter

Preview 'to do' items in point calculation

Devotion **1** /8 Fellowship **7** /8 Honor **8** /18 Resilience **1** /8 Valor **2** /8

[View Minipets](#) [View Heroes & Pets](#) [View Titles](#) [View Armor](#) [View Weapons](#)

Virtue	Progress
Devotion	1 / 8
Fellowship	7 / 8
Honor	8 / 18
Resilience	1 / 8
Valor	2 / 8

Observed Variables <sup>(a)</sup>				Unobserved Variables <sup>(b)</sup>					
Item	Communality	Pattern Matrix				Factor Label	$\alpha$	Eigenvalue	%VE
		F1	F2	F3	F4				
I [like/do not like] obtaining titles	.784	<b>.813</b>	-.040	-.022	-.108	Satisfaction	.901	8.89	40.42
Collecting titles is [fun/not fun]	.780	<b>.792</b>	-.100	.167	-.150				
I [collect/do not collect] titles for my own enjoyment	.442	<b>.681</b>	-.137	-.033	-.099				
I [value/do not value] the titles I accumulate	.651	<b>.568</b>	.148	.180	-.177				
Collecting titles is [rewarding/not rewarding]	.629	<b>.557</b>	.312	-.063	-.136				
I am [proud of/do not take pride in] accumulating titles	.587	.460	.300	.158	-.118				
A need to obtain titles [has/has not] shaped the way I play	.470	.457	.397	.005	.120				
Reviewing my titles [provides/does not provide] me with a sense of enjoyment	.473	.376	.300	.134	-.130				
[My titles allow me to show off]/[I keep my titles to myself]	.544	-.181	<b>.774</b>	.072	-.035				
I [feel/do not feel] that peers notice my titles	.596	-.123	<b>.718</b>	-.157	-.269				
My titles [are/are not] a symbol of prestige	.526	-.116	<b>.693</b>	.149	-.108	Peer Recognition	.863	2.31	10.52
I am [impressed/not impressed] by players with many titles	.569	.226	<b>.678</b>	-.108	.098				
I [believe/do not believe] my titles reflect on my ability as a player	.584	.311	<b>.600</b>	.071	.154				
I [am/am not] impressed by players with specific titles	.493	.150	<b>.557</b>	.050	-.123				
My titles [are/are not] part of my identity	.403	.116	<b>.557</b>	-.073	-.081				
I [care/do not care] about the special items when I start GW2	.613	-.051	-.058	<b>.794</b>	-.011	Incentive	.795	1.81	8.25
I [want/do not want] the special items when I start GW2	.599	-.026	-.117	<b>.783</b>	-.117				
I [care/do not care] about the special titles when I start GW2	.596	.156	.419	.564	.169				
I [want/do not want] the special titles when I start GW2	.659	.400	.184	.460	.031				
In game titles [are worthwhile/are worthless]	.760	-.117	.025	-.087	<b>.811</b>	Value Perception	.785	1.31	5.95
In-game titles [have meaning/are meaningless]	.545	-.206	-.126	-.078	<b>.555</b>				
There is [something/nothing] to be proud of when collecting titles	.513	-.142	-.228	.038	<b>.544</b>				

<sup>(a)</sup> Significant loadings have been highlighted, excluding items with complex loadings; <sup>(b)</sup> %VE = percentage of overall variance explained

<b>Fit Index</b>	<b>Outliers Removed</b>	<b>Outliers Included</b>	<b>Fit Criteria (Hu &amp; Bentler, 1999)</b>
$\chi^2$ (df)	164.8 (110)	162.5 (110)	N/A
$p$	.001	.001	> .05
$\chi^2/\text{df}$	1.499	1.477	N/A
CFI	.974	.974	> .95
TLI	.968	.967	> .95
RMR	.059	.065	< .08
RMSEA	.054	.051	< .06
Bollen-Stein $p$	N/A	.098	>.05

Observed Variables				Unobserved Variables <sup>(b)</sup>				
Item	Regression Weights		$R^2$	Factor	CR	AVE	MSV	ASV
	Non-Standard <sup>(a)</sup>	Standard						
I [like/do not like] obtaining titles	1.024 (.051)	.920	.847	Satisfaction	.946	.779	.491	.285
The different tasks required to get titles are [interesting/boring]	.943 (.058)	.848	.719					
Collecting titles is [rewarding/not rewarding]	.942 (.050)	.889	.790					
I [collect/do not collect] titles for my own enjoyment	.917 (.057)	.834	.696					
Collecting titles is [fun/not fun]	1.000 (--)	.918	.843					
[My titles allow me to show off]/[I keep my titles to myself]	.815 (.080)	.741	.549	Peer Recognition	.839	.571	.475	.548
I [feel/do not feel] that peers notice my titles	.727 (.082)	.719	.517					
I am [impressed/not impressed] by players with many titles	.687 (.083)	.617	.381					
My titles [are/are not] a symbol of prestige	1.000 (--)	.916	.838					
I [want/do not want] the special items when I start GW2	1.173 (.091)	.873	.762	Incentive	.881	.651	.064	.059
The 'Hall' has [been/not been] an incentive for me to play GW	1.009 (.107)	.679	.461					
I [care/do not care] about the special items when I start GW2	1.007 (.082)	.836	.699					
I [want/do not want] the virtual incentives provided by the 'Hall'	1.000 (--)	.826	.683					
In-game titles [are important/are not important]	1.173 (.091)	.894	.799	Value Perception	.909	.714	.491	.339
In game titles [are worthwhile/are worthless]	1.227 (.100)	.858	.736					
In-game titles [have meaning/are meaningless]	1.124 (.094)	.843	.710					
There is [something/nothing] to be proud of when collecting titles	1.000 (--)	.782	.611					

<sup>(a)</sup> Standard errors shown where available; <sup>(b)</sup> CR = composite reliability, AVE = average variance explained, MSV = maximum shared variance, ASV = average shared variance

<b>Fit Index</b>	<b>Original Model (Yee, 2012)</b>	<b>Modified Model</b>	<b>Fit Criteria (Hu &amp; Bentler, 1999)</b>
$\chi^2$ (df)	118.07 (45)	37.11 (22)	N/A
<i>p</i>	.000	.023	> .05
$\chi^2/\text{df}$	2.624	1.687	N/A
CFI	.903	.974	> .95
TLI	.857	.958	> .95
RMR	.092	.053	< .08
RMSEA	.093	.060	< .06

Observed Variables				Unobserved Variables <sup>(b)</sup>									
Item	Regression Weights		$R^2$	Factor	CR	AVE	MSV	ASV					
	Non-Standard <sup>(a)</sup>	Standard											
Becoming powerful	.975 (.128)	.761	.579	Achievement	.763	.518	.123	.062					
Acquiring rare items	.889 (.121)	.672	.452										
Optimising your character as much as possible	1.000 (--)	.723	.522										
Feeling immersed in the world	.349 (.100)	.256	.334	Immersion	.800	.584	.032	.016					
	.676 (.095)	.512											
Learning about stories and lore of the world	1.100 (.123)	.929	.863										
Exploring the world just for the sake of exploring it	1.000 (--)	.791	.626	Social	.805	.586	.123	.078					
Keeping in touch with your friends	.216 (.079)	.179	.394										
	.652 (.086)	.571											
Chatting with other players	.900 (.093)	.817	.668										
Being part of a guild	1.000 (--)	.874	.763										

<sup>(a)</sup> Standard errors shown where available; <sup>(b)</sup> CR = composite reliability, AVE = average variance explained, MSV = maximum shared variance, ASV = average shared variance

	Group Means		Mean Difference			
	PvP-N/PvE-C	Balanced	t	df	p	d
Social	3.34	3.34	.006	85	.995	.000
Immersion	3.29	3.37	-.448	85	.627	.067
Achievement	2.65	2.68	-.172	85	.864	.039
Satisfaction	3.34	2.85	3.145	123	.002	.595
Peer Recognition	3.12	2.97	.918	123	.360	.172
Value Perception	2.63	2.30	2.882	123	.005	.543
Incentive	3.15	2.91	1.955	123	.053	.343
	PvP-N/PvE-C	PvP-C/PvE-H	t	df	p	d
Social	3.34	3.15	.876	77	.384	.219
Immersion	3.29	3.36	-.329	77	.744	.078
Achievement	2.65	2.52	.691	77	.491	.165
Satisfaction	3.34	3.35	-.075	113	.940	.012
Peer Recognition	3.12	3.25	-.786	113	.433	.015
Value Perception	2.63	2.67	-.277	113	.728	.060
Incentive	3.15	3.25	-.810	113	.419	.166
	Balanced	PvP-C/PvE-H	t	df	p	d
Social	3.34	3.15	.815	54	.418	.022
Immersion	3.37	3.36	.015	54	.988	.011
Achievement	2.68	2.52	.715	54	.478	.195
Satisfaction	2.85	3.35	-2.565	82	.012	.562
Peer Recognition	2.97	3.25	-1.677	82	.098	.366
Value Perception	2.30	2.67	-2.863	82	.005	.622
Incentive	2.91	3.25	-2.248	82	.027	.496

	Achievement	Immersion	Social	Satisfaction	Peer Recognition	Value Perception	Incentive
Achievement	<i>r</i> <i>p</i> <i>N</i>	1 118					
Immersion	<i>r</i> <i>p</i> <i>N</i>	.123 .183 118	1 118				
Social	<i>r</i> <i>p</i> <i>N</i>	.513** .000 118	.308** .001 118	1 118			
Satisfaction	<i>r</i> <i>p</i> <i>N</i>	.212* .021 118	-.059 .523 118	-.021 .823 118	1 187		
Peer Recognition	<i>r</i> <i>p</i> <i>N</i>	.236** .010 118	-.120 .195 118	-.052 .576 118	.500** .000 187	1 187	
Value Perception	<i>r</i> <i>p</i> <i>N</i>	.048 .604 118	-.091 .325 118	-.055 .556 118	.609** .000 187	.581** .000 187	1 187
Incentive	<i>r</i> <i>p</i> <i>N</i>	.103 .266 118	-.104 .262 118	-.028 .765 118	.202** .006 187	.210** .004 187	.187** .010 187