Motivations for Play in Computer Role-Playing Games

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ABSTRACT
In this paper the motivations for play in the context of single- and multi-player digital Role-Playing Games (RPGs) are examined. Survey data were drawn from respondents online and participants in a related experimental study. The results indicate that motivations for play are not simple constructs, but rather composed of multiple motivational drivers that are heavily inter-related and act in concert. Character uniqueness and Discovery & Immersion were the highest ranked motivational categories. Different levels of detail in motivations for playing single-/multi-Player RPGs were located, with mechanistic/tactical play and character-based/social play being the two overall motivational factors.

Categories and Subject Descriptors
K.8 [**Personal computing**]: Games; J.4 [**Social and Behavioral Sciences**]: Psychology

General Terms
Measurement, Design, Experimentation, Human Factors, Theory.

1.0 INTRODUCTION
The opportunities to play digital games are constantly increasing. The traditional locations of home and arcade, together with more venues such as internet cafés and mobile phones, offer a multitude and in the future increasing number of possible entry points into the gaming universe. The offer, though, is simply that, an offer. Games do not enforce participation. People choose to play games, voluntarily including themselves in the category of "player". The number of people that make the choice is large, significant enough to support a global industry including multi-national corporations and to generate considerable academic interest.

The academic study of digital games is addressing an increasing number of areas, however, what these studies all rely on, is that there is an activity of game playing to be studied. Without people making the choice to play, there is no playing to be studied. In order to make the choice to play, people need to be motivated to do so, in the sense of the psychological feature that arouses people to act towards a desired goal, in this case the game playing activity [13,20]. Their motivation gives purpose and direction to this behavior, and once they have started playing it is motivation that drives players onward in e.g. selecting which games they play, and how they play them. Motivation is therefore a key factor in game design and -studies now and in the future, and it is not surprising that the question about which motivational drivers that make people play different types of games, is receiving increasing attention [e.g. 1,2,13,15,17,19,20].

The study of motivations for playing digital games has to some degree focused either on games in general [e.g. 20] or specifically on massively multi-player online RPGs (MMORPGs) and First-Person Shooter games (FPS), as well as some forms of learning/serious games [26], leaving other game forms such as single-/multi-player RPGs less explored (form or format here indicating a broadly recognized group of games with many shared characteristic, e.g. FPS', RPGs). RPGs are interesting because of the current interest in games-based storytelling and the potential for utilizing experiences from these games in the design of digital storytelling systems [5]. Like MMORPGs, single-/multi-player RPGs are character-focused games, featuring player-controlled fictional characters operating in a virtual environment, which develops over the course of play. Generally, these games also feature - more or less developed - narrative structures focused on said characters. As part of a larger project examining player attitudes to and behavior in multi-player gaming across digital and non-digital game formats [22] the motivations of the experiment participants for playing multi-player Role-Playing Games (RPGs) were surveyed, providing a small sample of the player population (n=32), which was however known in great detail due to the extensive empirical experiments these were involved in (e.g. featuring about 20 hours of gameplay per player, multiple surveys, interviews etc.). In conjunction with this study, an online survey was conducted in order to extend the validity of the approach (n=132), using the same motivations survey. This approach permits cross-referencing of results between the groups.

2. PREVIOUS RESEARCH
The psychological feature of "motivation" has been dealt with in psychological studies and media literature extensively [6,11,16,26]. In the following a brief review of some of the key works within the area is presented. While there have been studies directed at questions related to issues of motivation for play, finding the answers is not a trivial task, and the questions of human motivation within virtual worlds remain relatively

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unexplored [17]. The ambitions, personalities and desires of game players vary, and it could reasonably be expected that their motivations for play may be equally unique. As noted by Yee [24]: *"Asking MMORPG players why they play reveals a dazzling array of varied motivations"*. The majority of the research conducted on game player motivations has been aimed at either investigating motivations for play across all players and games [3], or limiting the study to a specific game or game form [13,24]. There are yet to be studies published which examine whether different motivational categories - such as *competition* [18,19,20] apply equally well to different types of games, and indeed if the reasons why people play games varies as a feature of different games. Within the games industry, the motivational drivers of game players form a key design factor [2], e.g. in relation to the relationship between reward-structures, challenge and the player state. Before the player actually sits down with a game and starts playing it, it is the motivation towards specific types of gameplay and game features that drive players to choose specific games. Similarly, how players can be kept motivated during a game, e.g. through reward systems, is equally important [12]. As noted by Ghozland [9]: *"[The players] motivation is the factor that will determine if a player will continue playing after a few minutes, as well as how long he will play and whether he will finish the game"*. In order to harness the power of motivation in game design (and explore this in sociological contexts, several attempts have been made to categorize game player motivations into categorical systems that are easy to account for in a game design process. Similarly, research in usability and playability testing of digital games considers not only raw design testing, but also how people approach the games in question and how to encourage specific player behaviors [e.g. 7].

In an early study of player motivations, Bartle [1] proposed four distinct types of players, each with their own sets of motivational drivers (later extended to eight in Bartle [2]). The classification was based on the author's experience with Multi-User Dungeons (MUDs); and included considerations as to how players could migrate between the different categories. The model has been utilized and modified in later studies; however it has also been criticized by e.g. Yee [24], who concluded that particular players of MMORPGs can exhibit aspects of any or all of these types. He surveyed approximately 3200 MMORPG players, using a questionnaire developed via previous communication with the players. Ten categories of motivation were identified: *Advancement, mechanics, competition, socializing, relationship, teamwork, discovery, role-playing, customization* and *escapism*. Yee [24] further concluded that motivations for play can be described under three overarching, non-exclusive motives: *Achievement* – seeking game mastery, competition and in-game power; *Social* – interacting with others and develop in-game relationships, and *Immersion* – escaping real-life problems, engage in role-playing and exploring the game worlds. The study is however limited to MMORPGs; and further restricted by its categorization of players based solely on their primary motivation.

Both Bartle [1] and Yee [20] create categories that focus on the structure of current games, rather than looking at fundamental motives and satisfactions that are generic for all games and players. This led Ryan et al. [17] to attempt to identify the underlying psychological needs that games presumably satisfy, focusing on factors associated with enjoyment and persistence, notably *autonomy*, *competence* and *relatedness*, using Self-Determination Theory, hypothesizing that these categories could in part account for the motivational pull of digital games irrespective of genre or player preferences. Ryan et al. [17] noted that different game genres presumably will have different relations to the motivational variables and fulfil different needs in players. Jansz & Tanis [13] examined the appeal of FPS', based on an online survey primarily among young male gamers which was based around gratifications theory and existing work on motivations in games, identifying seven motivational categories (*Competition, Interest, Enjoyment, Fantasy, Social interaction, Excitement, Challenge*). Notably, the importance of social interaction emphasized by Jansz & Martens [14], who investigated the motivational drivers of participating in LAN-events, was reaffirmed in the study. The latter study also described motivational factors such as *competition* and *interest*. Lucas & Sherry [16], Sherry [18] and Sherry et al. [19] used gratifications theory [see e.g. 11] in a similar capacity to Jansz & Tanis [13], identifying six principal reasons for video game play: *Competition, Challenge, social interaction, diversion* (comparable to the *escapism* category of Yee [24]), *fantasy* and *arousal* (to play because the game is exciting). Lucas & Sherry [16] later explored gender-based differences in video game play using the same approach, seeking to transfer knowledge of gender differences to game design principles. Sherry [16] merged uses & gratifications theory with flow theory [e.g. Csikszentmihalyi 1988] in a study of the use of media by people for enjoyment, which has emerged from media studies as an important motivational factor.

In a study related to motivation, Gribel [10] examined the use of the game *The Sims 2* as a projective test in clinical psychology. The focus was an examination of how personality characteristics of the player were translated into *The Sims 2*, a game where the players can affect the motivations and aspirations of virtual characters. 30 under-graduate students participated, completing 10 hours of gameplay over a six-week period. The participants filled out a survey and a self-administered personality test (the NEO-FFI). Data were correlated using the Pearson's correlation coefficient. The results indicated that some personality traits among the players correlated with specific gameplay behaviours. Furthermore, Van Meurs [23] investigated the motivations of MUD players, combining survey items based on Yee [24], including demographic information and MUD type, with the Big 5 personality test. The study included 1741 players, and the results were used to create a new model for the Bartle [1,2] types. Within the commercial sector, [3] published the results of an online survey of player demographics; combining survey items with the Myers-Briggs personality self-test (which classifies individuals into sixteen different personality types). The authors reported more than 400 respondents, resulting in a four-way classification similar to Bartle [1]: Wanderers, Participants, Conquerors and Managers, with casual and hard-core gamer subtypes for each category. The study focused what players wanted with the playing activity itself, and did not distinguish between specific game formats.

Recent studies have also involved personality self-evaluation methods in investigations of player motivations [22], an approach that was combined with in-depth interviews by [26], who investigated motivation in the context of learning games, and identified *mental/physical challenges* and *social experiences* as well as *escaping boredom*, as the primary motivations for game play among university students. Also within the context of

educational games, Kellar et al. [15] examined motivation towards complex game challenges in an educational context, based on a survey among business and computer science students, two groups with different game behaviors, examining the role of motivation in electronic games. The goal was to capitalize on the motivation among students to play games to develop educational activities. The survey included 55 items, based on four motivational factors: *Control*, *context*, *competency* and *engagement*. 170 survey participants were involved. Results were not analyzed statistically, instead being used to build a profile of the two groups. The study concluded that there were differences in the motivations in the two groups.

In summary, a diverse range of motivational factors (or motivational drivers), have been proposed across the mentioned studies, with however a substantial amount of similarities, e.g. the motivational pull of challenge and mastery-cycles, the importance of social contexts and the need for enjoyment and escaping the tedium of the real world. It would appear possible that there are motivational drivers acting across all forms of digital games, as in non-interactive media evidenced through the use of uses and gratifications-theory [18]. It remains an open question however, if specific types of games, e.g. RPGs or FPS, by virtue of their individual design features assert other motivational "pulls" on players, and it is also largely uninvestigated which types of motivations that specific types of games satisfy to a greater or lesser degree. For example, FPS's presumably satisfy the competition motivation to a more significant degree than a collaborative or semi-competitive RPG.

2. APPROACH AND METHOD

The participants were questioned about their motivations for playing multi-player RPGs by means of a self-test questionnaire, following e.g. Ryan et al. [17]. The questionnaire items were based in part on existing work, which permits comparison of results with data from e.g. MMORPGs, a genre of games with many similarities to single-/multi-player RPGs, notably the focus on character-based play [8,22]. The form and framework of single-/multi-player CRPGs were also considered.

2.1 Assumptions

As a qualitative, survey-based study with an online component, the current research relies on a set of assumptions [27], notably:

A) Respondents were truthful (at least statistically significantly so) in their replies. In this case the assumption of truthfulness is difficult to estimate. Few CRPGs include the potential for multiple players, including *Neverwinter Nights*, *Dungeon Siege*, *The Elder Scrolls*-series and *Vampire the Masquerade: Redemption*. The largest operating community is probably the *Neverwinter Nights*-communities, which are extensive thanks to the release of the AURORA and ELECTRON toolsets that empower players to create their own multi-player game modules. The online survey was advertised on the sites of CRPGs with multi-player capability as well as associated online forums. Every online response was investigated in order to locate possibly suspect responses, e.g. checking for duplicate responses or surveys with suspect response patterns, following comments in Wood et al. [27]. None of the responses were found to be suspect.

B) The questionnaire items cover the full breath of subject of study. This problem was addressed by basing the survey on existing work on computer games and RPGs, as well as considering the specific properties of the games under study. Note however that not all previously proposed motivational categories were included in the survey due to item-scale size constraints.

C) The sample being surveyed is representative of the population it is wished to draw inferences about. This requirement is generally addressed in online surveys by asking respondents to add some demographic information, e.g. age, gender and level of experience; and ensuring a large enough sample. With the total population size of RPG players unknown, representativeness can only be assumed (it is not possible to calculate the percentage of the population which responded on the survey).

2.2 Motivations Questionnaire design

The basis for the questionnaire was the survey of Yee [24], which was directed at MMORPGs, a game form that is very similar to single-/multi-player CRPGs, e.g. the focus on character-driven gameplay, albeit arguably with less emphasis on game story. Additionally, RPG theory [e.g. 8], as well as discussions with RPG players on online forums and members of local gaming clubs, were included in the decision of which survey to base the study on. The survey of Yee [24] contains many of the motivational categories recognized in other studies of gaming motivation, including *advancement/achievement, competition/challenge, social interaction, autonomy, escapism, autonomy, immersion* and *discovery.* Further included were features unique to either multi-/massively multi-player games or RPGs: *teamwork, role-playing, customisation* (of RPG characters) and *game mechanics.* The amount of survey items for each of these factors varied. The survey did not include items on *arousal/excitement, humour, leadership* and *fantasy* (in the sense of Sherry et al. (2006, vordererbog), meaning playing because it permits doing things one cannot do in real life or pretend to be someone else). As the survey of Yee [24] is already fairly broad in its range of captured motivational factors, the survey in the current study focused on expanding and bolstering the existing categories with additional questions, with the exception of adding two items on *leadership* (Table 1). Additionally, items were added that focus on unique features of games under study (which additionally enables more detailed comparisons with future surveys of other game types, e.g. FPS'): In single-/multi-player RPGs (the latter often being the result of player-developed game modules based on single-player engines or toolsets such as AURORA), one of the primary strengths is the character-driven storytelling which permits players to actually have an impact on the state of the game world, unlike in most MMORPGs where player-created changes are impermanent, e.g. in *World of Warcraft*. Two items were included under the heading *character impact*, and a few additional questions regarding individual play and character uniqueness, recognising the survey was aimed at both single- and multi-player RPGs. Importantly, the survey does not include items directly related to the motivational factors *arousal/excitement* and *fantasy*, this because of the need to keep the number of items to a manageable number and ensuring that a sufficient number of question items linked to the same *predicted* motivational factor. Irrespective, the modifications and updates of the Yee [24] questionnaire does serve to align it more closely with the work of e.g. Sherry et al. [20]. The questionnaire contains a total of 50 items (Table 2), with responses being distributed on bi-polar five point scales, with neutral reply options, e.g. 1 =

strongly disagree, 3 = neutral, 5 = strongly agree. The original item texts of Yee [62] were modified to suit the RPG format rather than the MMORPG format. A pilot experiment was run with five participants, to test the fitness of the motivational questionnaires and to evaluate whether the target audience comprehended the question items in the fashion intended. As a result, additional questions were added to cover areas such as socialisation, as the pilot experiment indicated that these were more nuanced aspects of player motivation than originally thought. Furthermore, multi-player RPGs are communications-based games that potentially feature a strong social environment, necessitating increased attention to these features. RPGs are character-based games, and therefore the survey emphasizes the character game element, both from the social/engagement perspective, and the rules-based/optimization perspective.

Table 1: Questions of the survey not included in Yee [24] (some questions feature clarification in the survey text).

Item	Question text	Theme
7	How much do you enjoy being the leader of a group?	Leadership
8	How often do you take charge of things when playing in a role-playing group?	Leadership
12	How important is it to you that your character has unique skills and abilities that the other characters in the group do not possess?	Character uniqueness
22	Socializing with the other players?	Socializing
26	Planning and executing tactical strategies and plans?	Tactical play
27	To create stories of individual character rather that of the entire group?	Individual play
28	Prioritize character interaction rather than combat?	Socializing
47	How often do you use dramatic additions to your verbal- or texted communication during role-playing games?	Role-Playing
10	How important is it to you that you play a character that is central to the game story?	Character impact
11	How important is it to you that you play a character that has a large impact on the fictional world of the game? (e.g. saves or dooms it)?	Character impact
14	How important is it to you that you can customize the appearance of your character clothing, armor and similar?	Character customi-zation

2.3 Data collection

The approach towards data collection was survey-based, in a capacity similar to the majority of previous work. However, data were collected from two different samples of players, permitting cross-referencing of results.

Group 1: Survey of experiment participants: The data used in this analysis was collected as part of a larger study on the player experience and communication in single-/multi-player RPGs. The players (n=32, average age approx. 26) were provided a paper copy of the questionnaire, before the onset of the to this study unrelated empirical experiments, in order to avoid contamination in the data by post-game enjoyment or other factors [22]. The experiments were otherwise unrelated to the survey.

Group 2: Online survey: The second group of players were surveyed using a website containing the questionnaires (n=132, average age approx. 29 years). Note the comparably greater age of these respondents with those of [13], who reported a mean age of 18.09 years among players of FPS.

Of the total sample (n=164), 11.4% of the respondents were female, the remainder male (88.6%). While comparable studies of e.g. MMORPG and FPS-players [13,24] have resulted in thousands of answers thanks to the abundance of game forums online, the communities of people who play single-player and/or multi-player RPGs are hard to locate in great numbers online, with one notable exception being the *Bioware* online forum for the *Neverwinter Nights*-games. Numerous game forums and associated websites were contacted for participants, and extensive recruiting took place within the environment of Australia and Denmark using snowballing techniques.

3. ANALYSIS AND RESULTS

In the majority of previous research on player motivations, factor analytic algorithms have been utilized as the primary means for grouping survey items into specific constructs. Factor analysis is a branch of multivariate statistical analysis, which generally describes a collection of procedures involving analysis of multiple variables at the same time. The aim is to reduce multidimensional data sets to a lower set of dimensions for analysis, thus summarizing patterns of inter-correlation among the variables. PCA was used here rather than regular factor analysis because the method analyses total variance (including errors), not only the shared variance. The use of PCA to analyse survey-based data is potentially problematic [21], because the algorithm places high demands on sample size. Opinions differ on the subject, however, as evidenced by the popularity of the algorithm and its application to datasets of many sizes. In this study PCA analysis is seconded by reliability measures (Chronbach's alpha [4], which provides a conservative estimate of reliability) and correlation analysis (Pearson's r) to confirm the validity of the factor structure.

3.1 Data reduction analysis

The dataset was subjected to data reduction analysis using Promax rotation (kappa = 4) with Kaiser Normalization (KMO = 0.759) (results were tested using several rotations including Varimax), which resulted in a 12 factor solution, explaining 70% of the variance in the dataset (Table 2). The 12 factor solution was seconded by the Scree plot. Attempts at factor solutions with forced factor numbers (e.g. 10) did not produce better variance resolutions. Because Promax is an oblique rotation technique, regression scores for the factor groups were saved for subsequent analysis. The internal coherence of factor groups were evaluated using Chronbach's alpha. The internal correlation of factor group items were checked using Pearson's correlation and by evaluating the effect of removing items on the Chronbach's alpha.

Factor loadings varied from .405 to .877, with only two being below .450. These would normally be excluded, however, as they loaded the strongest with their respective component and Pearson's correlations indicate they fit best with their respective components. Futhermore, as the items fit thematically within the components, they were retained as indicated by the PCA (Table

2). Two items, questions 5 and 31 (Table 2, bottom) did not load significantly with any factor group (below .4) and were excluded from the factor structure. These two items are thematically related (Table 2), however, Chronbach's alpha did not indicate any correlation between them consistent across the datasets from Group 1 and Group 2 (see above). Item 9 (playing a character that is renowned in the game world) loaded with almost equal significance to component 4 (.482) and 6 (.508). Correlational data and alpha indicates that the item could be included in both components, however it was here kept in component 6 as indicated by the PCA. Of special note is item 29 (being immersed in a fantasy world), which loaded heavily with multiple factors (groups 2,4,5,9,12) – as well as the associated individual items - suggesting that this is linked with several motivations. Alpha values generally ranged at .7-0.85, with one factor group at a somewhat low .595. Factor groups were checked by calculating alpha for the dataset from Group 1 (see above, n=32). These showed internal consistency for the factor groups, with the exception of 6, 8 and 10. This degree of internal consistency of the majority of the components despite the low sample size thus generally supports the factor structure of the total dataset.

3.2 Scoring of motivational groups

The average aggregate score of each motivational group was calculated for the dataset (Table 2), and the groups ranked according to their average value. The majority of the factor groups score around the scale average (3.0), with standard variations of 0.66 to 1.05, indicating a substantial variation in the dataset (responses by the survey participants). Importantly, factor groups 4 (*Character uniqueness*), 5 (*Discovery & Immersion*); 6 (*PvP/competition*, player vs. player) and 11 (*Real-life*) scored substantially above or below the scale average (depending on the weight the analyst applies to the high standard variations). These are collectively the highest and lowest ranked groups, with *Character uniqueness* and *Discovery & Immersion* being the highest ranked and *PvP* and *Real-life* being the lowest ranked, based on average factor group scores. This pattern is reflected in the average scores for the individual items (Table 2), which feature low scores for *PvP* and *Real-Life*-related items and high scores for *Discovery & Immersion* and *Character uniqueness*.

Table 5: Descriptive statistics of the 12 factors.

Factor	Score	Rank	STDEV
1) Socializing	3.25	4	0.66
2) Character depth	2.93	9	0.93
3) Character optimization	3.11	6	0.80
4) Character uniqueness	3.41	2	0.94
5) Discovery & immersion	3.93	1	0.78
6) PvP/competition	1.92	12	0.77
7) Mechanics	3.16	5	0.97
8) Character impact	2.75	10	0.93
9) Escapism	3.03	7	0.92
10) Leadership	3.27	3	0.81
11) Real-Life	2.20	11	1.05
12) Tactics	2.99	8	0.88

It is also worth investigating the scores of individual items: The *Socializing* factor group generally features high averages, however, two items (Having meaningful conversations with other players, playing multi-player rather than alone) score below average, lowering the average score for this category. It is important to keep in mind that the majority of the *Socializing* items are rated highly by the players. Of further notice is: *"Trying out new roles/personalities with characters"* (average 3.49) and: *"Time spent creating and customizing character during the character creation steps"* (3.62), both scoring well above average for the scale. This is also the case for the item: *"Having as optimized a character as possible"* (3.55) and playing to "relax from the day's work/school or similar" (3.64) as well as: *"Enjoy working with other players in a group"* (3.75) - this latter being a fairly self-evident conclusion considering the game format, however notice that e.g. *Neverwinter Nights* allow multiple players in the same game without them necessarily collaborating directly. This is also the case in e.g. *Diablo II*.

3.3 Further data reduction

Because the rotation used was not orthogonal (like the varimax or quartimax rotations), factor groups can be attempted further reduced (hierarchical factor analysis). Factor group regression values were rotated using Promax (kappa = 4) and the 12 factor groups further compressed to 5, accounting for 59.8% of the total variance (KMO=.62). Chronbach's alpha was calculated for the 5 higher-order groups to ensure internal coherency (Table 3). 11 of the original 12 factors are reduced to 4 new groups, with *Discovery & immersion* remaining independent. Factor loadings are generally high, indicating a relatively coherent factoring pattern.

Table 3: Results of further data reduction

Higher-order factor group	Factor groups included	Factor loading	alpha
Social & Role-Play	Socializing	.738	.855
	Character depth	.688	
	Character uniqueness	.634	
	Real-Life	.641	
Mechanical play	Character optimization	.825	.798
	Mechanics	.734	
Self-oriented play	PvP (competition)	.760	.762
	Escapism	.607	
	Character impact	.620	
Tactical play	Leadership	.809	.671
	Tactics	.737	
Discovery & Immersion	Discovery & Immersion	.851	(.765)

3.4 Correlations between motivations

Pearson's correlation matrices were calculated for the 12 factor groups. These indicate that the different motivational categories are far from orthogonal, with multiple links showing statistical probabilities below <0.001. Two groups of interrelated motivational groups are readily apparent (Figure 1). These broadly correlate to mechanistic, "hard" gameplay vs. more character-oriented, social and immersive "soft" gameplay. These two factor groups appear generally separate, although PvP and Escapism does correlate at p<0.01, this is the only correlation between the two groups (Figure 1).

Table 2: Distribution of questionnaire items in groups (constructs). The bottom two items did not load significantly (below .4) with any factor groups. Avg = average score. The full response range (1-5) was utilized by the respondents for all items.

Factor	Items	Factor loading	$\acute{\alpha}_{Group1}$	$\acute{\alpha}_{all}$	Avg
1) Socializing	Helping other players	.716	.705	.693	3.67
	Getting to know other players	.877			3.45
	Chatting with other players	.828			3.43
	Being part of a friendly, casual group or guild	.761			3.78
	Socializing with other players	.724			3.5
	Having meaningful conversations with other players	.629			2.79
	Playing multi-player rather than alone (.876)	.492			2.71
2) Character depth	Making up background stories, anecdotes etc. for characters	.793	.666	.843	2.74
	How often characters are role-played				
	Using dramatic additions to language when communicating with	.770			2.9
	other players	.800			2.64
	Trying out new roles/personalities with characters	.606			3.49
	Prioritize character interaction rather than combat	.541			2.84
	Creating distinctive objects with no game-functional value	.622			3.02
3) Character optimization	Leveling up character as fast as possible	.707	.748	.796	3.12
	Acquiring rare items	.773			3,34
	Making character powerful	.709			3.44
	That character accumulates resources, items or money	.790			3.12
	Using a character builder or template to plan character's advancement	.531			2.53
4) Character uniqueness	Time spent creating and customizing character during character creation steps	.430	.754	.781	3.62
	Character clothing, armor and similar matches in style/theme	.725			3,25
	Customizing the appearance of character clothing, armor and similar	.775			3.43
	Character looking different from the characters of other players	.749			3.34
5) Discovery & Immersion	Emphasis on exploring the game world just for the sake of exploring it	.780	.868	.765	3.90
	Enjoy starting new quests or adventures, meeting NPCs, exploring	.786			
	hidden areas of the game world				4.02
	Exploring contents of the game world	.810			4.06
	Being immersed in a fantasy world	.486			3.75
6) PvP/competition	Doing things that annoy other players	.701	.482	.765	1.41
	Purposefully try to provoke/irritate other players	.624			1.47
	Dominating/killing the characters of other players	.845			2.07
	Competing with the characters of other players	.757			2.59
	Playing a character that is renowned in the game world	.508			2.15
7) Mechanics	Interest in precise numbers and percentages underlying the game rules and mechanics	.795	.762	.759	2.95
	Having as optimized a character as possible	.733			3.55
	Knowing as much about the game mechanics as possible	.710			2.98
8) Character impact	Playing a character central to the game story	.838	.383	.649	2.81
	Playing a character with a large impact on the game world	.761			2.72
	Creating stories about individual characters rather than groups	.450			2.71
9) Escapism	Escaping from the real world	.787	.744	.673	2.98
	Play to avoid thinking about real-life problems or worries	.826			2.49
	Relaxing from the day's work/school or similar	.405			3.64
10) Leadership	Being the leader of a group (NPC's and/or players)	.669	.422	.678	3.10
	Taking charge of things when playing	.776			2.87
	Enjoy working with other players in a group	.613			3.75
11) Real-Life	Frequency of co-players offering support with real-life problems	.854	.822	.812	2.32
	Frequency of talking with co-players about personal issues	.832			2.1
12) Tactics	Character possessing unique skills and abilities that other character in a group does not possess	.477	.528	.595	3.27
	Planning and executing strategies and plans	.529			3.16
	Being part of a serious gaming group	.628			2.52
Not in factor group	Character able to operate alone	NA	.696	.258	3.38
	Having a self-sufficient character	NA			3.13

3.5 Mixed motivations in RPG play

In the study of Yee [24] it was reported that 57% of the MMORPG players participating in the survey, had a primary motivation for playing, where the primary motivation is defined as one of the categories. To quote Yee [24]: "*A respondent was assigned a primary motivation if there was no close secondary motivation (primary *.75 > secondary)*". The dataset presented in this article on multi-player RPGs show a different pattern: The average player had 5.6 motivations scoring over the scale average (3.0), and 3.76 motivations over scoring over 3.5. Furthermore, each player had 1.59 motivations scoring over 4.0 on a scale of 1-5. On average, players had 4.65 motivations with a score higher than .75 of their maximal score, using the metric devised by Yee [24] to define high motivations. Only 8.54% of the participating players had a primary, driving motivation (i.e. 1 motivation higher than .75 of the maximal motivational score).

4. CONCLUSIONS & DISCUSSION

While the study presented here does not pretend to be definitive, especially given the sample size and the restriction to a single game format, it does indicate the complex nature of the reasons for why people play games. Reasons for playing a particular game may vary widely between players, and the motivation of a particular player may be narrowly focused or broadly based. The results presented in the above indicate that the motivations for playing single-/multi-player RPGs are varied, with the data reduction analysis resulting in 12 different motivational factor groups (Table 2), which belong to one of two distinct factor group clusters (Figure 1). With further PCA, the 12 factors can be reduced to 5 higher-order groups (Table 3). A number of conclusions can be drawn from the results:

1) Motivations for play: While 12 different motivational factors were located; these are highly inter-related, forming two distinct clusters of motivations (Figure 1). The two clusters generally refer to two different types of gameplay, with one being focused towards tactics, optimization, competition, and even grief play, the other being focused on socializing, depth of character and role-playing, discovery and immersion. Connecting these two motivation clusters is *Escapism*, which using Pearson's correlation links the most strongly with the latter group, but in the second PCA groups with *PvP/competition* and *Character impact*, indicating a relationship with both groups. It is possible that these two groups are two fundamentally different motivational "drivers" for playing RPGs (and perhaps other games).

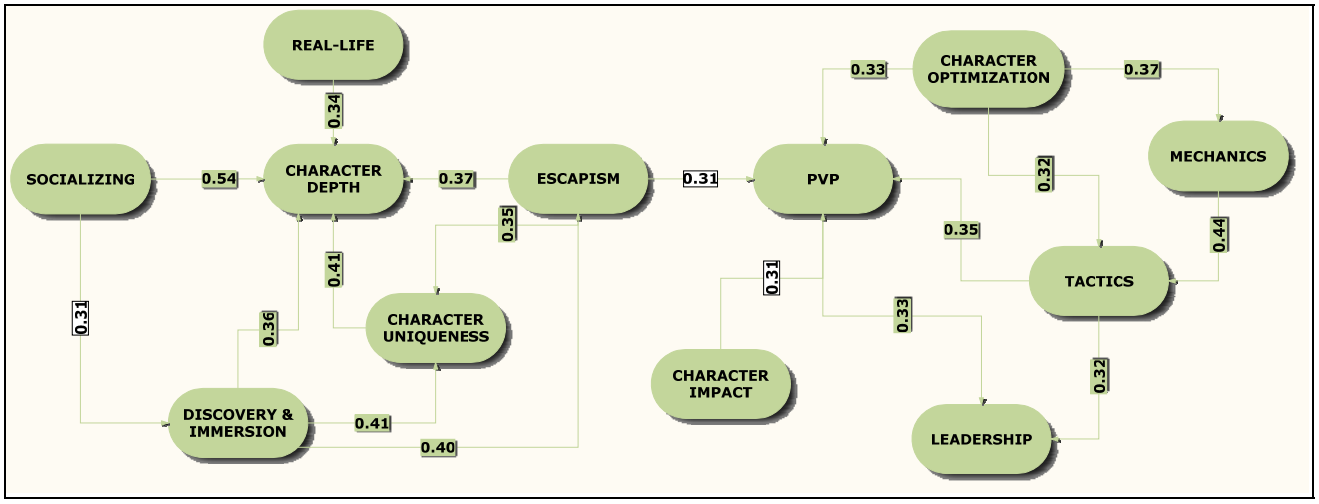

Figure 1: Pearson's correlations between the 12 factor groups. Pearson's r-values included on connector lines. Values in shaded boxes significant for p<0.001, values in clear boxes significant for p<0.01. Correlations above p<0.01 were not included.

2) Relative importance: The majority of the 12 factors score around the middle of the scale when averaged, with high standard deviations, indicating a substantial variety in the responses. Four factors, however, score either substantially above the scale average or below, indicating a consistent pattern: *Discovery & Immersion* and *Character Uniqueness* appear to be important motivational factors for the surveyed players, while *PvP* (competition, "grief play" and domination over other players) and *Real-Life* (discussing personal issues with co-players) rate very low. Given that single- and multi-player RPGs are not played in pervasive social and/or competitive environments like MMORPGs, this is perhaps to be expected. Even in multi-player mode, a game like *Neverwinter Nights* is generally played cooperatively, with perhaps some competitive elements such as acquisition of in-game items - this point to the importance of game format on player motivation. While research such as Ryan et al. [17] indicates that there are over-arching motivations for engaging with games that cross game formats, it appears to be important to consider whether players approach different types of games with different motivational mindsets, e.g. in relation to the strength of a given motivation such as competition.

3) Mixed motivations: In the current study only 8.54% of the participating players had a primary driving motivation, as opposed to 57% reported by Yee [24]. Rather, the participants scored a minimum of 3.5 - above the scale average of 3.0 - in on average 3.76 of the 12 factor groups, with 1.59 above 4.0 on a scale of 1-5. These results indicate that the participants are governed by multiple motivations when playing single- and multi-player RPGs. Furthermore, players have varying motivational interests, indicated by the flat nature of the response rank distribution curve (Figure 2) (responses varied on a scale of 1-5).

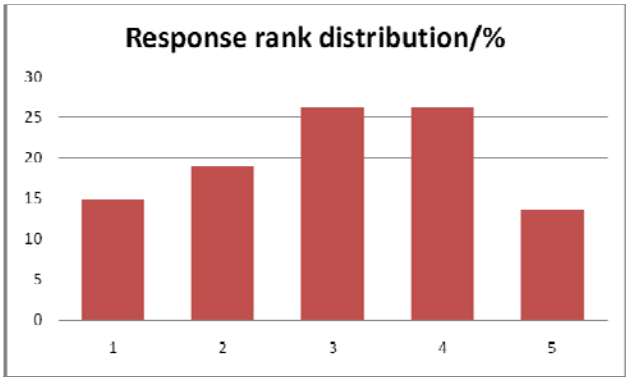

Figure 2: Response rank distributions in percent.

4) Comparison with related work: The results generally align with earlier work on motivations for play by e.g. Sherry et al. [20] in terms of the motivational categories that result from the data reduction analysis, for example in indicating social interaction being a fairly robust construct, as well as e.g. *Escapism*. However, the current study is focused directly on RPGs rather than gaming motivations in general, meaning that the most directly related study is that of Yee [24]. The 12 factor groups bear many similarities with the 10 reported by Yee [62] for MMORPGs, a related form of RPG. Yee [24] ultimately reduced his dataset to 3 higher-order factors (*Immersion*, *Social* and *Achievement*), and although the current study produced a 5-factor solution, two of these appear to be readily comparable with Yee's categories (*Social & Role-Play; Discovery & Immersion*), with the remaining 3 focused towards Yee's *Achievement* factor (*Mechanical play*, *Self-oriented play*, *Tactical play*). There are notable differences, importantly the grouping of *Escapism* with the *PvP (competition)* and *Character* impact categories. In the study of Yee [24], *Escapism* items grouped with *Customization*, *Role-Playing* and *Discovery*-type elements. Despite differences in the organization of individual question items, the overall division into social play, achievement/mechanics-oriented play and immersion construct, are evident from both the current study and that of Yee [24] confirming that a shared set of motivations exist across different RPG formats, even if it is possible that the relative strength of the individual motivations may vary across formats.

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