PERSONALITY TYPE AND MOTIVATION TO PLAY MMO GAMES

Daniel Kaufmann, Grand Canyon University

ABSTRACT

Massively Multiplayer Online Role-Playing Games (MMORPGs) consist of many qualities that relate to the World Health Organization's decision to identify Video Game Disorder as a defined mental health condition. While structural characteristics can determine the routine patterns of behavior a player may demonstrate, other factors are often involved in the discussion of why some elements within a game would appeal to certain players when compared to others. Open-ended gaming, such as what is found in many online games, is found in past research to lead to immersive experiences which could be perceived by mental health professionals as a tendency toward the developing an addiction around certain game types. The MMORPG genre can occupy extensive amounts of time in perpetuity, which then leads to interference in other life areas when a strategy for life balance is lacking. This study aimed to find ways personality theory could expand counselors' understanding of motivational conditions involved in the play of online video games. For this purpose, participation involved the completion of a personality assessment tool (MBTI-M) and an assessment to measure specific motivation elements for playing online games (MPOGQ) by players of the specific online game targeted for this study: Star Wars: The Old Republic (SWTOR). Significant differences across many personality types were found in most gaming motivation categories. Findings suggest personality does have an impact on the manner in which MMORPG players seek to participate in their game of choice.

INTRODUCTION

To this point, research studies have sought to examine the profound effects players of online video games experience across numerous life areas (Pontes & Griffiths, 2015). Researchers have not yet reached a consensus as to the merits of an official psychiatric diagnosis or uniform criteria as they have with more typical mental health conditions (Van Rooij et al., 2018). One complication in understanding this occurrence is the depth of understanding required to have a reasonable discussion concerning the various types of games available in the present gaming landscape (Granic, Lobel, & Engels, 2014). Massively Multiplayer Online Role-Playing Games (or MMORPGs) are one example of a popular style of video game since their inception prior to the turn of the century (Barnett & Coulson, 2010; Griffiths & Pontes, 2014). This style of game is defined by its persistent nature, giving players a never-ending stream of content and challenges to grind through with no definitive end becoming attainable except in the rarest of occurrences for elite players. These games appeal to a wide range of players as well due to their complexity mixed with social elements connecting thousands of players at any given time in a nostalgic world of escape featuring some of their favorite identified properties (Warcraft, Star Wars, Lord of the Rings, etc.) (Cleghorn & Griffiths, 2015; Granic et al., 2014). The volume of advanced features involved in constructing a virtual world places MMO games as a genre defined by high degree of complexity compared to other game types (Figure 1), making the impacts

on the psychology of the player deeper to consider as bonds are formed across different styles of play.

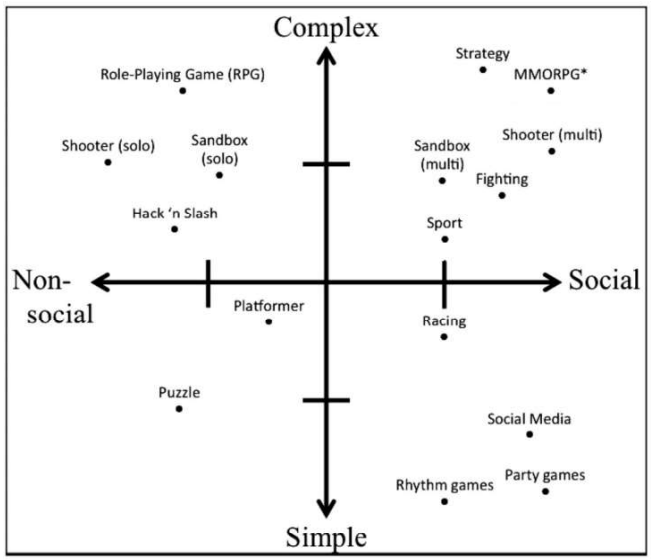

Figure 1. Updated Conceptual Map of Video Game Genres Across Dimensions of Complexity and Social Interaction (Granic, Lobel, & Engels, 2014)

Motivation to Play Online Games

The Motivation to Play in Online Games Questionnaire (MPOGQ) was developed by Nick Yee (2006b) to identify the degree of connection MMORPG players have to specific motivations through their in-game behaviors across specific fields of expression. These categories include three over-arching motivations (Achievement, Socialization, Immersion), and 10 total sub-categories (Figure 2). Achievement motivation is composed of advancement, competition, and mechanics. Social motivation involves socialization, relationship, and teamwork. The final category, immersion, includes discovery, role-playing, customization, and escapism. The benefits of the MPOGQ come from the ability to establish for the player which specific structural elements help them to positively connect with their investment in their game-playing experience. For the mental health professional, many of these concepts may seem foreign to the concept of what a video game is, but it establishes a shared language to begin identifying which elements of the game may be lacking in a person's real-world context (Kaufmann, 2016). As a result, this can develop as a critical element in the therapeutic process as long as the clinician and game player can navigate the new game concepts which have become part of the vernacular of the counseling process.

Achievement	Social	Immersion
Advancement: Player focuses on improving rate of progress through in-game challenges. Accumulating power to overcome new obstacles is important.	**Socializing:** A style oriented around casually interacting with many people, being helpful towards in-game goals, and being friendly.	**Discovery:** Enjoys finding things within the virtual world, acquiring knowledge, and experiencing the world of the game with appreciation.
Mechanics: Player works towards mastering the movements required for success and investigates the statistical operations involved in the play of the game.	**Relationship:** Similar to socializing, but involves deeper investment, self-disclosure, and extending support to others they met in-game.	**Role-Playing:** Players create storylines for themselves beyond the presented confines of the game. Plays in character and maintains role identity.
Competition: The player focuses on staying active in game modes which present opportunity to play against and defeat other human players.	**Teamwork:** Focused on gaming collaboration, forming long-lasting groups, and achieving objectives together.	**Customization:** Enjoys selecting the appearance, style, color schemes, and visual presentation of created characters to fulfill the vision of the avatar as they were created.
Adapted from original table as seen in Yee (2006b)		**Escapism:** Plays the game to relax and/or avoid real life problems through the experienced entertainment and focusing on in-game tasks during play regardless of real-life events.

Figure 2. List of Motivational Components for Playing MMORPG Games (By Primary Component)

Groups for social play can be formed in order to tackle challenges which require multiple players (Barnett & Coulson, 2010), ranging from small group (2-4 players) to larger, complex missions, which are often called raids (8+ players). As it can be complicated to randomly find a large group working on your exact mission, communities often form around the idea of completing this form of team-oriented task. This focus on inter-player utility commonly carries over into the creation

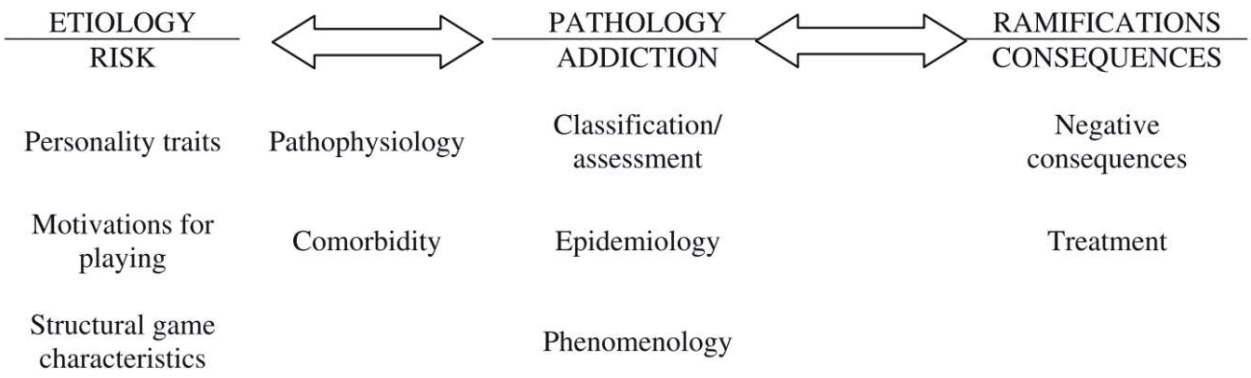

Figure 3. The Continuum of Internet Gaming Addiction (Kuss & Griffiths, 2012)

of more permanent communities, known guilds. With these groups established, it becomes more common to approach the complex tasks of the game. Additionally, these groups often develop into more like-minded communities over time as they are founded upon a shared goal of how to play and accomplish an enjoyable experience within the game world (Gabbiadini, Mari, Volpato, & Monaci, 2014; Kuss & Griffiths, 2012; Trepte, Reinecke, & Juechems, 2012).

The use of escalating difficulty for in-game challenges (Liao, Huang, & Teng, 2016) often adds greater investment to a genre already containing the most intense dedication the video game market can command. The challenge of earning rare titles or items for a created character through hard-earned victory in the more complex challenges often enhances the personal investment a player may have in their created character (Jin, 2011). The incentivized nature of these challenges often leads to greater time investment from players coming from various motivational styles. Additionally, many of these tasks require coordinated teams to still invest focused effort across multiple days of the week for months at a time in order for the ability levels of the player and the knowledge of in-game mechanics to reach a level where clearing the challenge becomes possible. By the time such a challenge is met, each of the players is likely experiencing varying degrees of psychological flow during their time periods of gameplay (Cowley, Charles, Black, & Hickey, 2008).

The immersion motivation involves many specific gaming behaviors mixing in with the desire to cope or escape from real-world struggles (Demetrovics et al., 2012). The positive aspects of immersion come from the understanding that the player is finding things within the game world they enjoy being surrounded by in their psychological experience of the game. This involves exploring the virtual world, discovering hidden areas that might be largely unknown to the majority of players, and even interacting with other players with a role-playing perspective (Yee, 2006b). This area of motivation again connects with the creation of the character by the player as modifying the appearance and abilities of the character is a central concept in that character's connection to the surrounding virtual world. For the most involved players in this area, they may enjoy interacting with other players in the form of acting out the perspectives of their created avatar as a form of role-play (Laconi, Pires, & Chabrol, 2017). Although these styles of playing online games do result in the appearance of high investment play in certain players, it is not possible to assume the presence of any specific gaming motivation automatically correlates with an addiction issue (Kuss, Pontes, Kiraly, & Demetrovics, 2018). Rather, addiction to online games is the result of multiple factors influenced by the structure of the game, related gameplay experiences, and the type of user (Figure 3).

Connecting MBTI Insights to Online Games

With each of these options available and MMO games, many online video games are designed with consideration for creating the opportunity for psychological flow to occur in the experience of the player across different motivations and player typologies (Cowley et al., 2008). The User-System-Experience (USE) model (Figure 4) explains how these games are produced by

describing the user as a combination of their own typology and their usage preferences. While usage preferences connect with the motivations already discussed, videogame developers look at typology as a combination of personality type and temperament of the player. Bateman and Boon (2006), in their work reviewing modern game design, identify the typology of the player using the same terminology / type system often utilized in publications concerning the Myers-Briggs Type Indicator. The manner in which a player interacts with other players, manages their internal sense of energy, takes an information and makes decisions, manages in game resources, and how they choose to fit the game into their lifestyle are all considered to some degree in the creation of the game. These directly correlate with the psychological concepts used in the MBTI of Introversion/Extraversion (I/E), Intuition/Sensing (I/S), Thinking/Feeling (T/F), and Judging/Perceiving (J/P) (Myers & McCaulley, 1985). This brings into the discussion a wide range of considerations from mental health professionals, considering there exists inherent knowledge in the way they interface with their clients via treatment recommendations and direction once the personality type is identified (McCaulley, 2000).

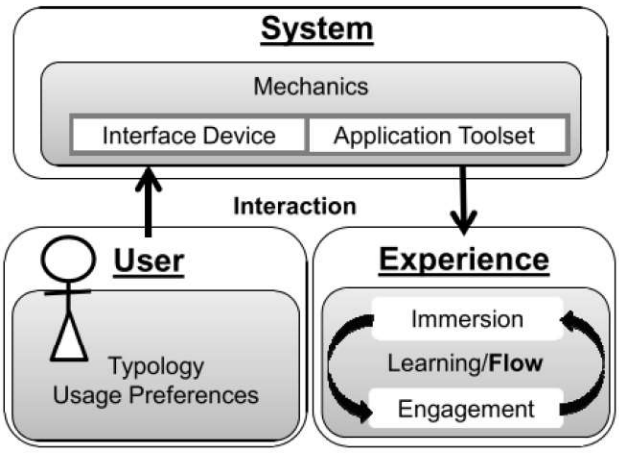

Figure 4. User-System Experience (USE) Model (Cowley, Charles, Black, & Hickey, 2008)

The early origins of the MBTI in psychology started with Carl Jung and his publication of Psychological Types (Jung, 1971; McCrae & Costa, 1989). This version of personality was primarily used to explain the internal experience of the mind through a series of defined attitudes and functions. The pairing of contrasting results with each other has been used to create what is considered a type-based approach to personality theory (Myers & McCaulley, 1985). These types are now used in tests such as the MBTI to aid people in enhancing their sense of self-understanding, progressing in career development, problem solving, improved efficacy in relationship counseling, academic performance, and also multicultural / diversity training (Myers, 1998). As identified in the many models used during game development for understanding the gaming population (Cowley et al., 2008), demographic information is important for crafting a play experience which captivates the audience. Personality data is used by the video game industry for this very purpose. From a counseling perspective, the disconnect occurs when a game player experiences increasing life stressors due at least in part to their gameplay habits, and their mental health supports ignore the available insights surrounding motivation and decision making as they seek to provide aid to the individual. Personality data can be just as useful for understanding optimal vocational decisions, friendship preferences, information processing, etc. as it can be for generalizing gameplay experiences into actionable improvements in real-world circumstances. As it turns out, MMORPGs are structured to be a perfect personality test if those who understand this form of assessment were to take the time to analyze play-based decisions (Yee, 2006a).

With online gaming becoming a potentially prominent counseling session topic, the current study sought to establish potential significant connections which can be used to clarify the mental health landscape for both healthy players as well as those trending towards unhealthy attachments in their patterns of play. To accomplish this, a counseling professional would benefit from being able to explore the features in the etiology of each form of connection. These were conceptualized by Kuss and Griffiths (2012) as being personality traits of the player, motivation for playing, and structural game characteristics. With the goal of many approaches to counseling being motivation of the client towards positive change (Miller & Moyers, 2017), the ability of the mental health professional to effectively review components of gameplay without becoming overly reliant on being educated by the client will certainly

aid the flow of a therapeutic dialog. Since it is assumed counselors already understand concepts involved in personality, developmental processes, relationships, and other critical elements of productive living, it would seem the only missing element for these professional in adding treatment of online game players to a diagnostic awareness would be understanding the experiences of playing in ways which connect to these staples of evaluating human behavior and potential.

This study expects to explore the following question:

Research Question: Among players of MMORPGs, is there a significant main effect between personality type and motivation to play?

MATERIALS AND METHODS

Sample

Participants were all adult-aged players of the MMORPG Star Wars: The Old Republic (SWTOR). A total of 503 people completed the online questionnaires and psychological tools involved in the study. Ages ranged between 18 and 62 years (M = 32.08, SD = 10.125). The sample consisted of 371 male and 123 female participants.

Materials

All test items were delivered online. The MPOGQ and questions reviewing players engagement in the structural variables of SWTOR were completed by participants via SurveyMonkey. The MBTI (Form M) was completed using the assessment hosting site operated by The Myers Briggs Company. The MPOGQ is a 39-item questionnaire scored on a 5-point Likert scale. Results show the degree of emphasis a player has in 3 motivation-to-play categories, including additional insights for 10 sub-categories. The questionnaire for SWTOR structural variables consisted of 21-items completed via multiple choice or ranked item formats. The MBTI-M is a 93-item version of the personality assessment. Results identify the personality type of the individual across the 16 possible results in the assessment, along with scores for preference clarity and associated characteristics of each type outcome.

Procedure

Participant recruitment occurred by posting an invitation to participate, including a direct link to the opening of the questionnaire consent form, in various online forums involved in ongoing discussion of the game Star Wars: The Old Republic. All participants who opted to participate completed the consent to participate form at the opening of the questionnaires on SurveyMonkey and attested to having played SWTOR at some point since the games launch in late 2011. Each participant completed the SWTOR structural questions, followed by the MPOGQ. At the completion of this assessment, the participant was transferred via direct link the hosting site of the Myers Briggs Company to complete the MBTI-M.

RESULTS

Scores from the MPOGQ and MBTI-M were analyzed for differences in the mean variances across each category of participants. Analysis of Variance (ANOVA) and Analysis of Covariance (ANCOVA) were the tests utilized to analyze the majority of variables pertaining to the personality type and motivation styles of the online gamers who participated. The raw scores for each category were used for testing when possible. For certain analyses, a categorical score was necessary in order to convert hundreds of decimal score groupings into a more manageable number of groups, referred to as a categorical variable in certain data tables for this analysis. The Tukey HSD Multiple Comparison was utilized to identify by sub-group where significant results are occurring in instances where results involved more than two groups of variables show results of statistical significance in a single test.

MBTI Descriptive Results

Descriptive statistics for the MBTI-M can be viewed in Table 1. The most common personality type in this study was ISTJ, comprising 23.1% of the sample. Other personalities yielding a considerable portion of the sample included ISTP (11.1%), INFP (10.1%), INTP (9.7%), and INTJ (9.1%). It can be noted that all of the introversion personality types generated higher percentages of participation in this study than their extraversion counterparts. The breakdown of I/E presentation in this sample was 79.5% of the sample being persons with a preference for Introversion, meaning 20.5% yielded an Extraversion MBTI-M result. The other three dichotomous preference categories were more evenly distributed and were as follows:

Sensing (52.3%), Intuition (47.7%), Thinking (66.0%), Feeling (34.0%), Judging (53.1%), and Perceiving (46.9%).

MPOGQ Descriptive Results

Descriptive results for the MPOGQ can be viewed in Table 2 and Table 3. Scores for each motivation type were calculated using participant responses pertaining to each category on a 5-point Likert scale. For each item, a response of 5 would indicate a high level of value for the described in-game behavior to the player, with lower scores showing decreasing levels of importance downwards to a score of 1, which represents the behavior is of no importance to the player's enjoyment of time spent in game. Therefore, a higher value across measures of central tendency will indicate the particular motivation was of more general importance across the sample than would be those with lower scores. Data analysis for this study was completed using both raw data and categorical averages for each motivation category.

Across the population of players utilized for this study, immersion categories of motivation yielded the highest average response across all of its sub-categories when compared to the other two themes of motivation style. Avatar customization was the only category to receive an average score indicating "Very Important" to the motivation of players to engage in this MMO game. All other motivations received a lower average rating when the data is being reviewed separate from personality results. Socializing was the most prominent focus among motivation sub-groups in the social theme, and mechanics was the most prominent motivation focus from the sub-groups in the achievement theme. The escapism category was most often scored as "Very Important." The most common results for advancement, relationship, teamwork, discovery, and role-playing was that these elements are "Somewhat Important." The category with the lowest emphasis of importance in this sample was competition with the most common responses being in the "Slightly Important" category.

Review of Structural Game-Based Variables

The descriptive results for structural variable data suggest several insights into the impact structure of game choices for player creation, and engaging in the game world set the stage for potential connections between personality and psychological motivation for playing the various MMO in-game activities. The frequency of structured choices relating to avatar creation can be viewed in Table 4. This leads into play-style information, which can be viewed in Table 6. This data explains the variables of class role as well as moral and Force alignment. These variables explain play in a way similar styles of lore creation often found in tabletop games such as Dungeons and Dragons but focused on the connection between playing the created character in the universe for this game, which happens to be the galaxy of Star Wars. Finally, each participant was asked to rank their enjoyment of 10 different in-game activities from 1 to 10. The descriptive results for this set of questions can be viewed in Table 7, and identifies several insights directly related to the established research questions for this study. For example, the in-game activity with the highest degree of reported enjoyment by ranked order was customization based on mean scores and range established by the standard deviation.

The breakdown of gender for participants can be seen in Table 5. This sample was composed of 371 males (73.8%) and 123 females (24.5%). There were nine participants (1.8%) who declined to provide their gender during the demographic questions involved in the MBTI-M. The frequency of players with main avatar genders matching real-life gender was 69% (n=347), with 24 males focusing play on a female created character (4.8%) and 123 females focusing play on a male created character (24.5%). This indicates that significantly more players consider playing male avatars regardless of gender than they would normally considering their real-life gender.

Regarding advanced class selection, Sith Sorcerer had the most responses at 11.5% of the sample. The following classes are as follows: Jedi Sage (8.3%), Sith Juggernaut (8.3%), Sith Marauder (8.2%), Jedi Guardian (7.6%), Sith Assassin (7.4%), Mercenary (6.8%), Jedi Sentinel (6.4%), Gunslinger (6.2%), Sniper (6.0%), Commando (5.0%), Operative (4.8%), Jedi Shadow (4.0%), Scoundrel (3.8%), Vanguard (3.0%), and Powertech (3.0%). The advanced class choices are connected to the initial decision of base class. Therefore, once a person selects to be a Jedi Consular, for example, their only choices for advanced class would be between Jedi Sage and Jedi Shadow.

These choice groupings are reflected in the format of Table X. Numerous inferences are possible from this data regarding player choice and personality / motivation styles, which will be reviewed in the discussion section.

Descriptive data concerning play style choices that are connected to the game structure is described in Table 6. Play style choices involve decisions made by the player that determine their designation in the game pertaining to what role they maintain in group activities and teamwork situations (role), and distinctions of good and evil (morality / force alignment). Play style also involves in-game decision making. This set of game-based variables involved facets of gameplay covering which force alignment the participant's main avatar most often represents.

For avatar morality selection, the majority of participants identified they choose the extremes with respect to light and dark choices. The data shows 37.6% of participants selected Full Light Side and 22.9% selected Full Dark Side. The more moderate areas had less identification across the sample, showing 17.1% selected Some Light Side, 12.7% selected Some Dark Side, and 9.7% remain Neutral in their game-based decisions. This indicates that the majority of the sample seems to focus on making choices for the side of good, or the "Light Side of the Force" to use the terminology of the game. Since there could be some mixture of role-playing thought processes along with the good/evil presentation of some in-game decisions, the participants also provided data asking them what alignment they would have based on the RPG styles discussed by Richard Bartle (1996) in his MUD player types. The results were as follows: 19.1% reported they see their main avatar as Lawful Good, 17.7% as Neutral Good, 13.9% as Chaotic Good, 11.9% as Lawful Evil, 5.2% as Neutral Evil, 7.8% as Chaotic Evil, 5.8% as Lawful Neutral, 1.6% as True Neutral, 5.4% as Chaotic Neutral, and 11.7% reporting they never think about this distinction when they play. The level of skewness for this variable was .537, and the kurtosis value was -1.19. This also seems to indicate that more players spend their time making choices that support the doing of good than the portion of the sample who make various forms of evil choice.

The final set of in-game variables collected involved the participants ranking 10 game activities in terms of their preference. The data from this item can be viewed in Table 5. The element of story had the highest rated mean (3.68), median (2.00), and tied for the highest mode (1), with low numerical responses equaling high preference, and high numerical values indicating low preference. Beyond the game's story, content from the group-related (Heroic, Flashpoint, Operations), competition (PVP), and customization-style subgroups all indicate certain players greatly enjoy these, and others do not. This data will also be compared to the findings from the MPOGQ and MBTI-M, discussed in the following sections of the chapter.

Relationship between MBTI and MPOGQ Variables

The Levene's Test of Homogeneity of Variances was performed to assess for equality of variances between each motivation type identified through the MPOGQ with the MBTI types before one-way ANOVAs could be performed. Five of the MPOGQ types upheld the assumption of equal variances, with five assumptions being violated.First, those that were upheld will be discussed. A One-Way ANOVA was computed comparing the degree of motivation an MMORPG player would exhibit for each of the 10 motivation types identified within the MPOGQ with their complete personality type, and then single-letter attitudes or functions identified by the MBTI-M, resulting in separate analyses. Of the 10 motivation types, equality of variances was assumed for the following five motivation types: Mechanics, Discovery, Role-Playing, Customization, and Escapism, allowing the one-way ANOVA to be conducted (Table 8).

Significant differences of means were found among the various personality types when examining four of the five gaming motivations examined in the first analysis. Among those significant results were the following: Mechanics ($F(15,487) = 1.91$, $p < .05$), Role-Playing ($F(15,487) = 2.45$, $p < .01$), Customization ($F(15,487) = 1.73$, $p < .05$), and Escapism ($F(15,487) = 2.71$, $p < .01$). No significant effect was found for the Discovery motivation ($F(15,487) = 1.63$, $p > .05$).

Tukey's HSD was used to determine the nature of the differences between personality groupings. This analysis identified that certain personality

types experience the individual motivations involved in online games at different levels of personal value. The multiple comparisons analysis identified 6 significant difference when comparing complete MBTI-M personality types across the 10 motivation categories. These results can be viewed in Table 9.

For Mechanics, ESTJ individuals (M = 3.61, SD = 0.94) were shown to have a higher preference than those expressing a personality type of ISFP (M = 2.64, SD = 0.77). Role-Playing motivation scores were significantly higher for INFP participants (M = 3.69, SD = 0.72) than for those identifying as ISTJ (M = 2.92, SD = 0.96). Customization scores were significantly higher for INFP individuals (M = 4.01, SD = 0.86) than for ISTJ participants (M = 3.51, SD = 0.87). Finally, Escapism motivation scores were higher for INFJ (M = 3.74, SD = 0.85), INFP (M = 3.71, SD = 0.73), and ISFJ (M = 3.90, SD = 0.70) than they were for INTJ (M = 3.03, SD = 0.87). All other comparisons for immersion-related motivations and whole personality types were not significant.

Levene's Test of Homogeneity of Variances was not able to identify equal variances for the other five motivation categories, resulting in the use of the nonparametric Kruskal-Wallis H Test. The Kruskal-Wallis H Test was used to analyze the nonparametric motivations and found significant results for Achievement (H (15) = 31.894, $p < .01$), Competition (H (15) = 56.336, $p < .001$), Socializing (H (15) = 42.239, $p < .001$), and Relationship (H (15) = 50.213, $p < .001$). No significant change in Teamwork (H (15) = 24.790, $p > .05$) based on personality type was observed by this test as seen in Table 10. These findings indicate that most forms of what motivates players to participate in MMORPG games is in some way related to their specific personality type.

Four additional comparisons were conducted to view the difference in motivation types compared to the specific dichotomous letter pairings identified by the MBTI-M, which combine to form the complete personality of the individual. This set of analyses was repeated for the following variable categories: I/E, S/N, T/F, and J/P. Tukey Multiple Comparison was not possible for these analyses due to the fact that each dependent variable in this set of tests is dichotomous.

The first of these separate analyses examined the I/E variable via a One-Way ANOVA that showed a significant difference between participants with a preference for introversion and those preferring responses indicative of extraversion across 6 of the 10 motivation categories. This data can be viewed in Table 11. Equal variances were assumed using Levene's test for homogeneity in the categories of Mechanics, Competition, Teamwork, Discovery, Role-Playing, Customization, and Escapism. Among the significant ANOVA results were Competition ($F (1, 501) = 20.18, p < .001$), Teamwork ($F (1, 501) = 11.84, p < .01$), and Escapism ($F (1, 501) = 6.88, p < .01$). There were no significant results for the following motivation categories regarding the I/E variable; Mechanics ($F (1, 501) = 2.88, p > .05$), Discovery ($F (1, 501) = 0.03, p > .05$), Role-Playing ($F (1, 501) = 1.06, p > .05$), and Customization ($F (1, 501) = 2.67, p > .05$). Due to the lack of uniform variances for some motivations, a Kruskal-Wallis H Test was performed for Achievement ($H (1) = 4.202, p < .05$), Socializing ($H (1) = 28.561, p < .001$), and Relationship ($H (1) = 20.876, p < .001$) as seen in Table 12. The ANOVA and Kruskal-Wallis results identified significantly higher interest for Extraversion in the areas of Achievement, Competition, Socializing, Relationship, and Teamwork than those identified amongst participants identifying a preference for Introversion. By contrast, those with a preference for Introversion showed a significantly higher motivation for Escapism than their Extraversion-preferred counterparts.

The next analysis was for the S/N variable, which the One-Way ANOVA showed a significant difference between participants with Sensing preferences when compared to those with a personality preference for Intuition across 4 of the 10 motivation categories. Equal variances were assumed using Levene's Test of Homogeneity of Variances for all motivations except the Relationship category of motivation. The significant ANOVA results (see Table 14) consisted of Competition ($F (1, 501) = 4.15, p < .05$), Discovery ($F (1, 501) = 9.39, p < .01$), Role-Playing ($F (1, 501) = 13.67, p < .001$), and Customization ($F (1, 501) = 10.81, p < .01$). There were no significant results found for the following motivation categories for the S/N variable: Achievement ($F (1, 501) = 1.27, p > .05$), Mechanics ($F (1, 501) = 1.57, p > .05$), Socializing ($F (1, 501) = 1.59, p > .05$), Relationship ($H (1) = .705,$

$p > .05$), Teamwork ($F (1, 501) = 0.78$, $p > .05$), and Escapism ($F (1, 501) = 0.82$, $p > .05$). These findings indicate that S/N preference is a good predictor of certain categories for MMORPG play found in the MPOGQ, with those preferring Sensing showing significantly higher interest in Competition, and the Intuition focused participants having significantly higher interest in Discovery, Role-Playing, and Customization. The Kruskal-Wallis H Test was performed for the Relationship motivation type and also returned insignificant results.

The One-Way ANOVA for the T/F variable resulted in a significant result between those with Thinking versus Feeling preferences in their personality across 9 of the 10 categories of motivation. Equal variances are assumed for all categories except those of Mechanics and Relationship using the Levene Test of Homogeneity of Variances. Categories with significant ANOVA results included: Achievement ($F (1, 501) = 4.44$, $p < .05$), Competition ($F (1, 501) = 17.91$, $p < .001$), Socializing ($F (1, 501) = 5.17$, $p < .05$), Discovery ($F (1, 501) = 6.18$, $p < .05$), Role-Playing ($F (1, 501) = 16.90$, $p < .001$), Customization ($F (1, 501) = 11.40$, $p < .01$), and Escapism ($F (1, 501) = 14.92$, $p < .001$). The Kruskal-Wallis H Test showed significant nonparametric results for Mechanics ($H (1) = 10.781$, $p < .01$) and Relationship ($H (1) = 13.181$, $p < .001$). The only category with a not significant ANOVA result when comparing participants in the T/F category was Teamwork ($F (1, 501) = 0.09$, $p > .05$). This shows that Thinking/Feeling preference is capable of indicating significant differences in motivation in most MMORPG categories, with those preferring Thinking having significantly higher interest in the three Achievement categories, and those preferring Feeling showing significantly higher motivation for Socializing, Relationship, and the four Immersion categories.

The One-Way ANOVA for the J/P variable compared the variability in those participants whose personality reflected a preference for judgement to those with a preference for Perceiving. All categories where observed to have homogeneous variances based on Levene results in this comparison. Across the 10 motivation categories, none of them resulted in a statistically significant difference when comparing scores collected from the J participants against the P participants as shown in Table 15. Equal variances could not be assumed for any of the categories either. Role-Playing ($F (1, 501) = 3.16$, $p > .05$) and Customization ($F (1, 501) = 2.96$, $p > .05$) were two categories that showed results approaching significance. This indicates that the J/P preference of an MMORPG player is not an effective predictor of specific motivations for playing their game of choice.

Due to the complex nature of tracking each personality type and related component variable, a composite overview of significant results from this analysis can be reviewed in Table 17. From the results of this Research Question, it appears there are numerous similarities and differences between certain motivations for playing MMORPG games at the levels of whole personality type throughout the 16 types identified by the MBTI-M. Additional effects were found when viewing similarities and differences at the specific preference levels of I/E, S/N, and T/F found within their overall personality type. However, certain elements of personality may have stronger impacts and predictive power on gaming motivation than would others. The complete personality type of the individual was found to be the most effective variable for identifying significant main effects between personality and motivation for playing this specific MMORPG. Therefore, the null hypothesis is rejected, and significant main effects seem to exist between MBTI personality types and certain motivations for playing MMORPGs.

DISCUSSION

Yee (2006a), in developing the Motivation to Play in Online Games Questionnaire (MPOGQ), sought to better explain why the various fields of mental health need to understand the motivations of players who engage in problematic play. He theorized that being able to articulate and quantify elements of motivation for playing allows the mental health professional to enter into a dialogue of understanding, whether in person or through research. From the research angle, understanding player demographics, especially the differences in motivations for groups of people, allows the mental health professional to observe play and usage patterns. This can then enable them to understand directly the processes for high volume engagement in player bases, regardless of the merits involved in healthy and unhealthy presentation. According to a number of studies, the structure of the game itself could be related to potentially high-investment

styles of play, which could over time lead to play-related pathology (King & Delfabbro, 2014; Kuss, 2013; Yee, 2006). For the past nine years, the game Star Wars: The Old Republic (SWTOR) (Bioware, 2011) has operated as the only MMORPG featuring fully-voiced, cinematic story-telling, as well as boasting the distinction of being the only game featuring the sci-fi environments found in the fictional worlds of Star Wars. The goal of this study was to advance an understanding of MMORPG player populations regarding possible connections between personality type, as identified by the Myers-Briggs Type Indicator (Form-M) (MBTI-M), and their motivations for playing certain types of online games.

This study sought to view similarities and differences among personalities as conceptualized by the MBTI and specific motivations for playing MMORPG games in an effort to expand the knowledge base in the field of counseling. Although several studies do utilize certain facets of personality to explain video game players, the MBTI gives a benefit of describing multi-faceted personality types with easily understood components, all of which apply to the real-life preferences of the individual (Myers, 1998). The unique perspectives, which are utilized in the application of the MBTI, do enhance understandings from other instruments as well (Renner, Menschik-Bendele, Alexandrovicz, & Deakin, 2014), making exploration of online gaming through this instrument a new and suitable area of research for a study such as this one.

The goal of this study serves to build an understanding of how players use games to moderate some of their real-world needs or interests through play of the game. The personality typing of the individual, along with recording why each participant plays this specific MMO game, was used to explore the in-game similarities and differences with who people are in the real world, and what draws them to games as either a form of escape, entertainment, social opportunity, or other behaviors. Such psychological benefits could result in the potential for positively impacting cognitive/emotional processes such as self-esteem, belonging, and sense of purpose. Through the motivations identified by Yee (2006b), a more elaborate view of typing for online game players could then improve the degree of nuance or expertise within the therapeutic process with which clinicians and prospective clients are able to discuss the process of gaming, along with what function the game is serving in the person's life. Within such discussions, clinicians could also collect information to more quickly generate insight into potential problematic patterns of behavior common to differing types of players (Teng, 2009). The hope of this study, with enough valid data, was for counselors to be able to connect clients' presenting issues with certain patterns within their playing habits, making it easier to collect valuable information and provide specific therapeutic recommendations for clients presenting with game related pathology. This could then produce various therapeutically valuable insights. This study establishes that many motivations to play are found to have similarities with the current clinical understanding of personality typology. By using the current extent of knowledge from Jungian psychology, personality theory, motivation for online gaming, and similarities and differences revealed through statistical tests between certain profiles of players to their patterns of play, at-risk populations can be more easily assisted through therapeutic services, and hopefully in a timelier fashion.

Finally, due to ongoing research into whether Internet Gaming / Video Game Disorder would have merit as an APA or WHO endorsed psychiatric condition (APA, 2013; Petry et al., 2014; Van Rooij et al., 2018), it is critical to expand the available concepts counselors may have pertaining to online gaming for the near future. An APA endorsement of Internet Gaming Disorder (or another form of Gaming Disorder criteria) in future revisions of the diagnostic manual could lead to higher instance of online gaming-related issues being a presenting situation for therapeutic services. In such an event, knowledgeable conversation between counselor and client would certainly help the likelihood of the successful development of rapport. This is an important element of why connecting existing therapy concepts, such as personality, to motivations as an explanation for why people play games is of significant concern. Concepts for research, such as the one implemented in the creation of this study, are designed to give the counselor additional tools for managing a level of expertise and awareness in conversations with

clients on a wide range of issues which affect their lives. Also, client comfort and counselor interest are significant factors in the development of rapport (Leach, 2005). Establishing rapport can aid in enhancing client comfort and trust in the process of therapy, and even lead to greater likelihood of treatment success. The aim of this study was to grant counselors and other mental health professionals a new range of knowledge relating to what types of people are likely to find deep connections to elements of games such as the elements found in MMORPGs.

IMPLICATIONS FOR THE FIELD

The purpose of this study was to establish whether personality type has a significant effect on the motivations for playing MMORPG games. It seems pertinent for the field of counseling to expand its knowledge of cognitive or interpersonal interactions experienced during play of these games as technology begins to expand. With such expansion, exposure to games of this kind will continue to occur to younger and younger portions of the population, as well as to those potentially ill-equipped to participate in a routine of play without consequences on other life areas. In the event of a new diagnosis, such as a proposed diagnostic label for gaming-oriented disorders which have been under consideration by the American Psychiatric Association for years (APA, 2013; Petry et al., 2014), it could be that public awareness of how excessive and uncontrolled gaming should warrant professional attention would also increase.

The immediate benefit of this study for clinicians would be the enhanced education of how MMORPG games work. These games provide the player with a specific blend of flow psychology with expansive virtual worlds, both of which are used to propagate a steep learning curve and consistent utilization of the game within the real-life routine of the player. Just by viewing the list of motivations found in the MPOGQ, a clinician can see a more rounded sense of what elements of the game are deemed interesting by the players themselves. Merely knowing the difference between different play types, along with some basic inferences relating to motivations, could be enough to develop a rapport or trust with the client often missing when such things are introduced into the therapeutic conversation (Barnett & Coulson, 2010). Since rapport is an important element in the efficacy of treatment (Leach, 2005), this can help the clinician represent in the mind of their client an opportunity for unbiased exploration of their strengths, rather than being an extension of society which seems to have a very biased/stereotypical view of what a gamer is capable of (Barnett & Coulson, 2010; McGonigal, 2011).

A deeper benefit derived from the findings of this study exists for clinicians interested in incorporating personality theory into their understandings and work with their clients. The MBTI is boasted as an effective tool for increasing personal understanding in a number of life areas, including those of natural strengths, situational tendencies, motivations, areas to target for growth, and patterns of interaction with others (Myers, 1998). Certain elements of personality, such as introversion or extraversion) could be easily noticeable in session without warranting a time-intensive use of therapy minutes to ascertain the complete personality type. By having an awareness based on age range and hobbies mentioned by the client, a clinician could take the time to learn more about these activities and have a built-in understanding of how certain preferences and characteristics could foster feelings of success in clients when playing video games. The next step in such a realization is to help the client understand how these motivations and feelings can serve them well in other circumstances. When clinicians are capable of providing guidance and support to clients with a wide range of presenting issues, it becomes possible to make the connection between what motivates a client to play games alongside what motivates them to achieve similar enjoyment and successes in real life situations. For an additional level of rapport, understanding the elements of their game of choice (as was done in this study with the ranking questions) can help you similarly connect the motivations with elements of their personality, and then the correlating elements of how they could conduct themselves across their real-life routine.

The final level of benefit found in this study comes from synthesizing a clinical-level understanding of how personality informs tendencies in life with new findings on how personality bridges with gaming motivations and behavior. For example, ISTJ individuals, the type of those making up the

predominant portion of this sample, are described in the MBTI Manual as the following:

> *Serious, quiet, earn success by concentration and thoroughness. Practical, orderly, matter of fact, logical, realistic and dependable. See to it that everything is well organized. Take responsibility. Make up their own minds as to what should be accomplished and work toward it steadily, regardless of protests or distractions. Live their outer life more with thinking, inner more with sensing (Myers & McCaulley, 1985, p. 20).*

Using the data from this study, it is also established that ISTJ individuals apply these series of mentalities to MMORPG games (Table 19) by focusing on preferences of learning mechanics and the inner workings of the game, appreciating the socializing aspects of the online world, trying to find things within the virtual world most players will not even know exist, creating a great look for their character allowing them to be unique, and enjoying the game as a way to decompress from the stress of real-life situations (Table 1 and 8). All of these motivations have a great application in the context of real-life, as the MBTI Manual suggests. As counselors, we have a first-hand opportunity to guide our clients towards this realization. The things that motivate them and make them great in the game world would then not have to stay in the game world. After connecting these great qualities to the self in the mind of the client, work can be done to generalize this positive series of beliefs about the self into the troubling situations which prompted their presenting for treatment in the first place.

RECOMMENDATIONS FOR FUTURE RESEARCH

The findings in this study were all derived from data provided by players of the game Star Wars: The Old Republic. The state of the game at the time of data collection presented a strong focus on story elements, which could have shifted the population of the game from what it had historically been at various periods since its beginning in 2011. Future research should be done on similar concepts to see if (1) the findings can truly be generalized to apply to multiple MMO games, and (2) to see if these findings remain reliable at different periods in the life cycle of an MMORPG. More data regarding the MBTI and its application to understanding players of online games could lead to additional insights beyond connection to gaming motivation. Also, the array of games with online features is vast, and increasing daily. Similar studies which utilize different forms of gaming experience could lead to greater application in working with clients in which gaming is an aspect of their life.

Another direction research could take is to compare these findings to other formats for addressing personality theory in research. The current rift in many studies between the proponents of the Big-Five system of personality and any other format lends itself to a fruitful opportunity to replicate works using one personality format, and then the other to view similarities, differences, and consistency. Each personality inventory has unique concepts which could be suitable in different clinical situations and suit different clinical purposes. Therefore, there is little reason to cease the exploration of how gaming is affected by personality at this and other current studies.

Research on gaming avatars is readily available (Coulson, Barnett, Ferguson, & Gould, 2012; Jin, 2011), but perhaps not relating to personality studies. It could be interesting to view more avatar-related concepts in research which incorporate these elements of the person into the theoretical foundation of the study. This idea comes from the noticeable and universal motive across the types that customization is a valuable element of their MMORPG experience. Customization, as described in the MPOGQ, entails nearly all facets of avatar psychology from appearance, skill development, acquisition of rare in-game items, and many of the time intensive aspects of these games. It could be argued that, without this element of play, these games would lack the longevity which makes this form of gaming noticeably different than many forms of gaming, as the player-base could actually reach a sense of completion and then move on to other games. Fully understanding the depth of this motivation may not be possible, but more data makes it a simpler topic for clinicians to incorporate into their understanding of online gaming as a hobby, past-time, and for some, pathology.

LIMITATIONS OF THE STUDY

The first limitation for this study was that it was conducted with only adult-age individuals as

being qualified to participate. This is certainly not the case when it comes to participation in MMO games. However, future research can consider expanding the age requirement to be more inclusive of populations actively involved in the play of these games.

Additionally, the sample was dominated by White/Caucasian participants. Forty percent of the sample chose not to identify their ethnicity in this study. This makes it hard to derive any ethnic/cultural-bound implications from the data. Doing research more targeted in this area of demographics could yield direct insight into how various cultures experience online video games.

Including different games in similar research can be of benefit as well. The data drawn from in-game structural variables required that this study only include participants from one game. Although SWTOR is an MMORPG, the available activities and associated experiences of other games could have an impact on motivation, and now assumedly, on the prevalence of certain personality types. This limitation was selected by design due to research questions but can be overcome with future studies and similar explorations into personality across gaming communities.

Finally, there were a few personality types which were represented far lower than others. This is acceptable from the perspective that perhaps certain personality types are more likely to play MMORPGs, or at least, SWTOR. However, further exploration is necessary to see if this is a limitation of the current study, or an insight into the player population. Once established, further avenues for research can present themselves.

Author Disclosure Statement

There are no financial conflicts of interest to disclose.

Tables

Table 1. MBTI-M Descriptive Statistics

	N= 503	
	n	%
MBTI Full Personality Types		
ENFJ	7	1.4
ENFP	19	3.8
ENTJ	14	2.8
ENTP	17	3.4
ESFJ	3	0.6
ESFP	9	1.8
ESTJ	20	4.0
ESTP	14	2.8
INFJ	37	7.4
INFP	51	10.1
INTJ	46	9.1
INTP	49	9.7
ISFJ	24	4.8
ISFP	21	4.2
ISTJ	116	23.1
ISTP	56	11.1
MBTI Dichotomy Types		
Introversion (I)	400	79.5
Extraversion (E)	103	20.5
Sensing (S)	263	52.3
Intuition (N)	240	47.7
Thinking (T)	332	66.0
Feeling (F)	171	34.0
Judging (J)	267	53.1
Perceiving (P)	236	46.9

Table 2. MPOGQ Descriptive Statistics of Motivation Types

		M	SD	Skewness	Kurtosis	Minimum	Maximum
MPOGQ Motivation Types							
Achievement	Advancement	2.8082	.763	.078	-.450	1.00	4.83
	Mechanics	3.0149	.879	.065	-.529	1.00	5.00
	Competition	1.9523	.794	.855	.223	1.00	4.75
Social	Socializing	3.5353	.799	-.480	-.159	1.00	5.00
	Relationship	2.5030	.974	.251	-.793	1.00	5.00
	Teamwork	2.6421	.718	.091	-.159	1.00	4.75
Immersion	Discovery	3.2793	.932	-.111	-.507	1.00	5.00
	Role-Playing	3.1988	.936	-.090	-.792	1.00	5.00
	Customization	3.7515	.831	-.547	-.186	1.33	5.00
	Escapism	3.4201	.901	-.307	-.460	1.00	5.00

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Table 3. MPOGQ Motivation Types by Degree of Importance (Percentages)

	Extremely Important	Very Important	Somewhat Important	Slightly Important	Not Important At All
MPOGQ Motivation Types					
Advancement	1.8	20.9	45.5	28.6	3.2
Mechanics	7.0	29.2	39.0	22.3	2.6
Competition	.6	6.0	20.9	43.7	28.8
Socializing	13.5	47.3	29.2	9.1	.8
Relationship	2.0	15.1	33.2	28.6	21.1
Teamwork	1.2	13.7	50.5	30.4	4.2
Discovery	13.1	33.0	37.0	14.9	2.0
Role-Playing	11.3	33.6	34.0	18.9	2.2
Customization	19.1	47.5	24.3	8.9	.2
Escapism	10.7	40.6	31.8	14.7	2.2

Table 4. Descriptive Data for Avatar Creation Choices

				N= 503	
	n	%		n	%
Main Avatar Gender			**Advanced Class**		
Male	277	55.1	Sith Sorcerer	58	11.5
Female	226	44.9	Sith Assassin	37	7.4
Primary Faction			Sith Juggernaut	42	8.3
The Republic	226	44.9	Sith Marauder	41	8.2
The Sith Empire	277	55.1	Jedi Guardian	38	7.6
Primary Avatar Species			Jedi Sentinel	32	6.4
Human	236	46.9	Jedi Sage	42	8.3
Cyborg	55	10.9	Jedi Shadow	20	4
Sith Pureblood	47	9.3	Sniper	30	6
Chiss	33	6.6	Operative	24	4.8
Mirialan	30	6	Mercenary	34	6.8
Zabrak	33	6.6	Powertech	15	3
Miraluka	19	3.8	Gunslinger	31	6.2
Twi'lek	18	3.6	Scoundrel	19	3.8
Togruta	13	2.6	Commando	25	5
Rattataki	12	2.4	Vanguard	15	3
Cathar	7	1.4			

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Table 5. Frequency of Real-World Gender of Player and Created Avatar Gender

	Frequency	Percentage
Male Player – Male Avatar	249	49.5
Male Player – Female Avatar	24	4.8
Female Player – Female Avatar	98	19.5
Female Player – Male Avatar	123	24.5
No Response	9	1.8

Table 6. Play Style Choices (by Frequency and Percentage)

				N= 503	
	n	%		n	%
Primary Role			**Role Play Moral Alignment**		
Damage (DPS)	320	63.6	Lawful Good	96	19.1
Healer	95	18.9	Neutral Good	89	17.7
Tank	88	17.5	Chaotic Good	70	13.9
Force Alignment			Lawful Neutral		
Full Dark Side	115	22.9	Lawful Good	96	19.1
Some Dark Side	64	12.7	Neutral Good	89	17.7
Neutral	49	9.7	Chaotic Good	70	13.9
Some Light Side	86	17.1	Lawful Neutral	29	5.8
Full Light Side	189	37.6	True Neutral	8	1.6
			Chaotic Neutral	27	5.4
			Lawful Evil	60	11.9
			Neutral Evil	26	5.2
			Chaotic Evil	39	7.8
			I Never Think About This	59	11.7

Table 7. Preference for SWTOR In-Game Activities

	M	SD	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis
Story	3.68	3.119	.870	.109	-.686	.217
Heroic Missions (2+ Players)	5.23	2.172	.180	.109	-.776	.217
Flashpoints (4+ Players)	5.02	2.213	.222	.109	-.860	.217
Operations (8-16 Players)	5.36	3.235	.003	.109	-1.491	.217
Warzone PVP	6.16	3.223	-.299	.109	-1.395	.217
Starfighter PVP	7.06	3.077	-.820	.109	-.742	.217
Role-Play (RP)	5.91	3.221	-.184	.109	-1.436	.217
Strongholds	5.81	2.333	-.066	.109	-1.091	.217
Collections	5.30	2.236	.119	.109	-.991	.217
Achievement Hunting	5.49	2.322	.010	.109	-.824	.217

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Table 8. One-way ANOVA: Motivation Type and MBTI-M Type

		Sum of Squares	df	Mean Square	F	Sig.
Mechanics	Between Groups	21.508	15	1.434	1.906	0.021
	Within Groups	366.380	487	0.752		
	Total	387.888	502			
Discovery	Between Groups	20.816	15	1.388	1.629	0.062
	Within Groups	414.814	487	0.852		
	Total	435.630	502			
Role-Playing	Between Groups	30.854	15	2.057	2.449	0.002
	Within Groups	409.016	487	0.840		
	Total	439.869	502			
Customization	Between Groups	17.573	15	1.172	1.734	0.042
	Within Groups	329.030	487	0.676		
	Total	346.603	502			
Escapism	Between Groups	31.382	15	2.092	2.706	0.001
	Within Groups	376.494	487	0.773		
	Total	407.876	502			

Table 9. Significant Results from Tukey HSD Multiple Comparisons

MBTI-M TYPE			Mean Difference) (I-J	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Mechanics	ESTJ	ISFP	.96964*	0.27100	0.033	0.0363	1.9030
Role-Playing	INFP	ISTJ	.76171*	0.15397	0.000	0.2314	1.2920
Customization	INFP	ISTJ	.50079*	0.13810	0.028	0.0251	0.9764
Escapism	INFJ	INTJ	.70975*	0.19417	0.025	0.0410	1.3785
	INFP	INTJ	.67690*	0.17879	0.016	0.0611	1.2927
	ISFJ	INTJ	.87379*	0.22140	0.009	0.1112	1.6363

*. The mean difference is significant at the 0.05 level.

Table 10. Results of Kruskal-Wallis H Test (Personality Type and Motivation for MMORPGs)

	H	df	Sig.
Achievement	31.894	15	0.007
Competition	56.336	15	0.000
Socializing	42.239	15	0.000
Relationship	50.213	15	0.000
Teamwork	24.790	15	0.053

Asymptomic significances are displayed.
The significance level is .05.

Tables

Table 11. ANOVA Results (I/E Preference and MPOGQ Scores)

I/E		Sum of Squares	df	Mean Square	F	Sig.
Mechanics	Between Groups	2.213	1	2.213	2.875	0.091
	Within Groups	385.675	501	0.770		
	Total	387.888	502			
Competition	Between Groups	12.241	1	12.241	20.183	0.000
	Within Groups	303.864	501	0.607		
	Total	316.105	502			
Teamwork	Between Groups	5.968	1	5.968	11.841	0.001
	Within Groups	252.494	501	0.504		
	Total	258.461	502			
Discovery	Between Groups	0.027	1	0.027	0.031	0.861
	Within Groups	435.603	501	0.869		
	Total	435.630	502			
Role-Playing	Between Groups	0.930	1	0.930	1.061	0.303
	Within Groups	438.939	501	0.876		
	Total	439.869	502			
Customization	Between Groups	1.836	1	1.836	2.668	0.103
	Within Groups	344.767	501	0.688		
	Total	346.603	502			
Escapism	Between Groups	5.526	1	5.526	6.881	0.009
	Within Groups	402.350	501	0.803		
	Total	407.876	502			

Table 12. Results of Kruskal-Wallis H Test (I/E Preference and Motivation for MMORPGs)

	H	df	Sig.
Achievement	4.202	1	0.040
Socializing	28.561	1	0.000
Relationship	20.876	1	0.000

The significance level is .05.

Tables

Table 13. ANOVA Results (S/N Preference and MPOGQ Scores)

S/N	Sum of Squares	df	Mean Square	F	Sig.	
Achievement	Between Groups	0.738	1	0.738	1.269	0.261
	Within Groups	291.443	501	0.582		
	Total	292.181	502			
Mechanics	Between Groups	1.211	1	1.211	1.569	0.211
	Within Groups	386.677	501	0.772		
	Total	387.888	502			
Competition	Between Groups	2.596	1	2.596	4.148	0.042
	Within Groups	313.509	501	0.626		
	Total	316.105	502			
Socializing	Between Groups	1.014	1	1.014	1.591	0.208
	Within Groups	319.297	501	0.637		
	Total	320.311	502			
Teamwork	Between Groups	0.403	1	0.403	0.783	0.377
	Within Groups	258.058	501	0.515		
	Total	258.461	502			
Discovery	Between Groups	8.014	1	8.014	9.389	0.002
	Within Groups	427.616	501	0.854		
	Total	435.630	502			
Role-Playing	Between Groups	11.681	1	11.681	13.668	0.000
	Within Groups	428.188	501	0.855		
	Total	439.869	502			
Customization	Between Groups	7.320	1	7.320	10.810	0.001
	Within Groups	339.283	501	0.677		
	Total	346.603	502			
Escapism	Between Groups	0.670	1	0.670	0.824	0.364
	Within Groups	407.206	501	0.813		
	Total	407.876	502			

Table 14. Results of Kruskal Wallis H Test (S/N Preference and Motivation for MMORPGs)

S/N	H	df	Sig.
Relationship	0.705	1	0.401

The significance level is .05.

Tables

Table 15. ANOVA Results (T/F Preference and MPOGQ Scores)

T/F	Sum of Squares	df	Mean Square	F	Sig.	
Achievement	Between Groups	2.569	1	2.569	4.444	0.036
	Within Groups	289.612	501	0.578		
	Total	292.181	502			
Competition	Between Groups	10.910	1	10.910	17.910	0.000
	Within Groups	305.195	501	0.609		
	Total	316.105	502			
Socializing	Between Groups	3.271	1	3.271	5.170	0.023
	Within Groups	317.040	501	0.633		
	Total	320.311	502			
Teamwork	Between Groups	0.047	1	0.047	0.091	0.762
	Within Groups	258.414	501	0.516		
	Total	258.461	502			
Discovery	Between Groups	5.312	1	5.312	6.184	0.013
	Within Groups	430.318	501	0.859		
	Total	435.630	502			
Role-Playing	Between Groups	14.357	1	14.357	16.903	0.000
	Within Groups	425.513	501	0.849		
	Total	439.869	502			
Customization	Between Groups	7.708	1	7.708	11.395	0.001
	Within Groups	338.895	501	0.676		
	Total	346.603	502			
Escapism	Between Groups	11.796	1	11.796	14.921	0.000
	Within Groups	396.080	501	0.791		
	Total	407.876	502			

Table 16. Results of Kruskal-Wallis H Test (T/F Preference and Motivation for MMORPGs)

T/F	H	df	Sig.
Mechanics	10.781	1	0.001
Relationship	13.181	1	0.000

The significance level is .05.

Tables

Table 17. ANOVA Results (J/P Preference and MPOGQ Scores)

J/P	Sum of Squares	df	Mean Square	F	Sig.	
Achievement	Between Groups	0.041	1	0.041	0.071	0.790
	Within Groups	292.140	501	0.583		
	Total	292.181	502			
Mechanics	Between Groups	2.592	1	2.592	3.370	0.067
	Within Groups	385.296	501	0.769		
	Total	387.888	502			
Competition	Between Groups	0.365	1	0.365	0.579	0.447
	Within Groups	315.740	501	0.630		
	Total	316.105	502			
Socializing	Between Groups	1.135	1	1.135	1.781	0.183
	Within Groups	319.177	501	0.637		
	Total	320.311	502			
Relationship	Between Groups	0.087	1	0.087	0.091	0.763
	Within Groups	476.325	501	0.951		
	Total	476.412	502			
Teamwork	Between Groups	0.109	1	0.109	0.212	0.645
	Within Groups	258.352	501	0.516		
	Total	258.461	502			
Discovery	Between Groups	1.366	1	1.366	1.575	0.210
	Within Groups	434.264	501	0.867		
	Total	435.630	502			
Role-Playing	Between Groups	2.756	1	2.756	3.159	0.076
	Within Groups	437.113	501	0.872		
	Total	439.869	502			
Customization	Between Groups	2.039	1	2.039	2.964	0.086
	Within Groups	344.564	501	0.688		
	Total	346.603	502			
Escapism	Between Groups	0.722	1	0.722	0.889	0.346
	Within Groups	407.154	501	0.813		
	Total	407.876	502			

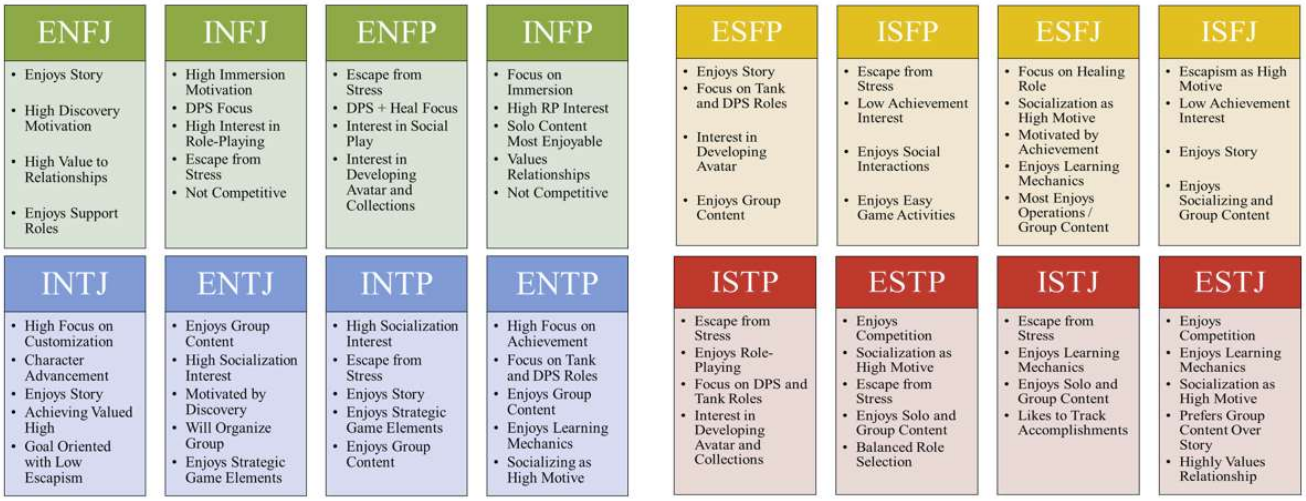
Tables

Table 18. *Overview of Significant Mean Differences between Personality Type and Motivation to Play Variables*

	MBTI Type	I/E	S/N	T/F	J/P
Advancement	*0.007***	*0.040**	0.261	0.036*	0.790
Mechanics	0.021*	0.091	0.211	*0.001***	0.067
Competition	*0.000***	0.000**	0.042*	0.000**	0.447
Socializing	*0.000***	*0.000***	0.208	0.023*	0.183
Relationship	*0.000***	*0.000***	0.401	*0.000***	0.763
Teamwork	0.053	0.001**	0.377	0.762	0.645
Discovery	0.062	0.861	0.002**	0.013*	0.210
Role-Playing	0.002**	0.303	0.000**	0.000**	0.076
Customization	0.042*	0.103	0.001**	0.001**	0.086
Escapism	0.001**	0.009**	0.364	0.000**	0.346

* = p < .05
** = p < .01 *italics* = Non-Parametric Result

Table 19. Personality Taxonomy of Player Preferences in Star Wars: The Old Republic



References

Barnett, J., & Coulson, M. (2010). Virtually real: A psychological perspective on massively multiplayer online games. Review of General Psychology, 14(2), 167-179.

Bateman, C., & Boon, R. (2006). 21st century game design. Boston, MA: Course Technology.

Cleghorn, J., & Griffiths, M. D. (2015). Why do gamers buy "virtual assets"? An insight in to the psychology behind purchase behaviour. Digital Education Review, (27), 85-104.

Cowley, B., Charles, D., Black, M., & Hickey, R. (2008). Toward an understanding of flow in video games. Computers in Entertainment, 6(2), 20:21-20:27.

Demetrovics, Z., Urban, R., Nagygyorgy, K., Farkas, J., Griffiths, M., Papay, O., . . . Olah, A. (2012). The development of the problematic online gaming questionnaire (POGQ). PLoS ONE, 7(5), 1-9.

Gabbiadini, A., Mari, S., Volpato, C., & Monaci, M. (2014). Identification processes in online groups: Identity motives in the virtual realm of MMORPGs. Journal of Media Psychology: Theories, Methods, and Applications, 26(3), 141-152. doi:10.1027/1864-1105/a000119

Granic, I., Lobel, A., & Engels, R. C. M. E. (2014). The benefits of playing video games. American Psychologist, 69(1), 66-78. doi:10.1037/a0034857

Griffiths, M., & Pontes, H. (2014). Internet addiction disorder and internet gaming disorder are not the same. Journal of Addiction Research and Therapy, 5(4), 1-3.

Jin, S. A. A. (2011). "My avatar behaves well and this feels right": Ideal and ought selves in video gaming. Social Behavior and Personality, 39(9), 1175-1182.

Jung, C. G. (1971). Psychological types: The collected works of C.G. Jung (Vol. 6). Princeton, NJ: Princeton University Press.

Kaufmann, D. A. (2016). Personality, motivation, and online gaming. (Order No. 10246131), Available from ProQuest Dissertations & Theses Global (1860872558). Retrieved from https://lopes.idm.oclc.org/login?url=https://search-proquest-com.lopes.idm.oclc.org/docview/1860872558?accountid=7374

Kuss, D. J., & Griffiths, M. (2012). Internet gaming addiction: A systematic review of empirical research. International Journal of Mental Health Addiction, 10, 278-296.

Kuss, D. J., Pontes, H., Kiraly, O., & Demetrovics, Z. (2018). A psychological overview of gaming disorder Oxford Handbooks Online. Oxford, United Kingdom: Oxford University Press.

Laconi, S., Pires, S., & Chabrol, H. (2017). Internet Gaming Disorder, motives, game genres and psychopathology. Computers in Human Research, 75, 652-659.

Liao, G. Y., Huang, H. C., & Teng, C. I. (2016). When does frustration not reduce continuance intention of online gamers? The expectancy disconfirmation perspective. Journal of Electronic Commerce Research, 17(1), 65-79.

McCaulley, M. H. (2000). Myers-Briggs Type Indicator: A bridge between counseling and consulting. Consulting Psychology Journal: Practice and Research, 52(2), 117-132. doi:10.1037/1061-4087.52.2.117

McCrae, R., & Costa, P. (1989). Reinterpreting the Myers-Briggs type indicator from the perspective of the five-factor model of personality. Journal of Personality, 57(1), 17-40.

Miller, W. R., & Moyers, T. B. (2017). Motivational interviewing and the clinical science of Carl Rogers. Journal of Consulting and Clinical Psychology, 85(8), 757-766. doi:10.1037/ccp0000179

Myers, I. B. (1998). Introduction to Type (6 ed.). Mountain View, CA: CPP, Inc.

Myers, I. B., & McCaulley, M. H. (1985). Manual: A guide to the development and use of the Myers-Briggs Type Indicator. Palo Alto, CA: Consulting Psychologists Press.

Pontes, H., & Griffiths, M. (2015). Measuring DSM-5 internet gaming disorder: Development and validation of a short psychometric scale. Computers in Human Behavior, 45, 137-143.

Trepte, S., Reinecke, L., & Juechems, K. (2012). The social side of gaming: How playing online computer games creates online and offline social support. Computers in Human Behavior, 28(3), 832-839.

Van Rooij, A. J., Ferguson, C. J., Carras, M. C., Kardefelt-Winther, D., Shi, J., Aarseth, E., . . . Przybylski, A. K. (2018). A weak scientific basis for gaming disorder: Let us err on the side of caution. Journal of Behavioral Addictions, 7(1), 1-9.

Yee, N. (2006a). The demographics, motivations, and derived experiences of users of massively multi-user online graphical environments. PRESENCE: Teleoperators and Virtual Environments, 15, 309-329.

Yee, N. (2006b). Motivations for play in online games. CyberPsychology and Behavior, 9(6), 772-775.