

Blood, Gold or Marriage – What gets you going?

A Study of Personality Traits and in-game Behavior

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ABSTRACT

The Massively Multiplayer Online Role-Playing Games (MMORPGs) genre attracts more players than any other genre of computer games today. This has led to a growing interest amongst researchers to understand why people play these games. Nick Yee has pioneered online gaming motivations research and offers a model suggesting how the individual benefits from playing in terms of real life satisfaction and how this creates different motivations for playing online games. It is still unclear, however, where these motivations stem from. This paper investigates whether there is a correlation between Yee's suggested gaming motivations and individual personality traits. The results showed several significant correlations, suggesting that personality traits do affect our gaming motivations, or in other words, personality traits partially explain why we play the way we do.

Introduction

Over the last two decades, having Internet access at home has become increasingly common. This led to an upsurge in the popularity of small, often privately designed and hosted, online text-based games that were accessible through a simple modem connection. These were called Multi-User-Dungeons (MUDs) and constituted the very first online multiplayer games. Since then, the MUDs have evolved into the MMORPGs that today constitute a growing multimillion dollar industry attracting more players than any other genre.

Traditional MUDs implemented a fantasy world where players could choose to play different characters, obtaining a set of specific skills or powers. MUDs differ from other computer games by their persistent worlds; when a player stops playing the world continues to exist and evolve. The object of MUDs is typically to slay monsters, explore the world, participate in a role playing story and progress with your created character. However, MUDs have also been used for distance education or virtual meetings, and also for the sole purpose of socializing. MUDs are entirely text-based and you act by typing out a description of what you are doing or what you want your character to do. During the early 1990s, the MUD genre gradually evolved into what is today known as the MMORPG genre, which is in essence a MUD with an added graphical interface. Just like in MUDs, each player in an MMOR-

PG assumes the role of a character and controls the characters actions (Anissimov 2007). Examples of popular MMORPG's are World of Warcraft, EverQuest and Anarchy Online. World of Warcraft is the largest MMORPG today and it alone has 11.5 million monthly subscribers (Blizzard Entertainment 2008).

Initial research on our presence in online environments was conducted by Turkle (1995). She contended that such online environments blur the boundaries between self and game, suggesting that the embodied life we live on a day-to-day basis bears no more legitimacy than the life we live in role-playing games on the Internet. This suggests that our behavior in the real world may not differ much, or at all, from our online behavior.

Prior research in the area of online behavior is thin, with The Daedalus Project being the most extensive research project to date. This project was founded by Nick Yee, and was an extensive survey project collecting data from over 40.000 MMORPG players over six years. Yee attempted to define and understand the motivations that make up in-game behavior in MMORPGs, with the purpose of bringing a further understanding to why people are in these online worlds to begin with (Yee 2005). His focus is on how the individual benefits from playing in terms of real life satisfaction and how this creates different motivations for playing online games. Yee's research has shown that every individual has her own unique reasons for playing MMORPGs. The underlying causes behind these motivations, why we play the way we do, is an area fairly unexplored. This is a key issue in understanding why people spend an increasing

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amount of time in these games, and also identified as one of the core questions in the larger picture of understanding the complex social phenomena that emerge from these virtual environments (Yee 2005). Personality traits are one factor that influences our behavior in the real world, but whether they also influence the way we act online is still unknown.

As such, the purpose of this paper is to examine if personality traits affect the way we play in MMORPGs. Participants were current or former players of MMORPGs, no discrimination was made on age, sex or demography.

Method

The study used a combination of two tests, one test for assessing gaming motivations and one test for assessing personality traits. Data was collected through online participation, among current or former players of MMORPGs. Participants were self-selecting through completion of a web-based form. The form was distributed through Internet-based channels such as the chatprogram MSN, the homepages Facebook (www.facebook.com), Elvenrunes (www.elvenrunes.com) and the World of Warcraft forums (forums.wow-europe.com). A total of 489 questionnaires were collected and none were excluded.

The test for assessing gaming motivations was the Yee Gaming Motivations inventory. It consists of 29 questions and is a self-assessment questionnaire designed to measure individuals’ different motivations for playing MMORPGs. The Yee Gaming Motivations test measures the answers on a 5-point scale, from “Strongly Disagree” to “Strongly Agree”. Each answer is graded with 1-5 points, and all points within the same category are later summarized to get a measurable result. The components measured were Achievement, Social and Immersion and their respective subcomponents.

The test for assessing personality traits is the Big Five Inventory (BFI), a scale created by Dr. Oliver P. John at University of California (1991). BFI is a self-report inventory designed to measure the Big Five personality traits. BFI measures the answers on a 5-point scale, from “Strongly Disagree” to “Strongly Agree”. Each answer is graded with 1-5 points, and all points within the same trait are later summarized to get a measurable result. The traits measured were those of the original Big Five personality traits: Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism.

The Yee Gaming Motivations inventory and the BFI were combined into a single form. Respondents were asked to go to a website and complete the questionnaire (<http://www.my3q.com/home2/271/>

magiska1/62952.phtml). The form took less than 15 minutes to complete. Data was collected over a 36 hour period. Correlations between each component and the Big Five personality traits were calculated in SPSS.

Theoretical Framework

In the last six years Nick Yee has studied players of MMORPGs and their interaction in virtual environments through The Daedalus Project. When asking players why they played MMORPGs, Yee found a great variation of motives. He suggests that MMORPGs may be appealing to many players because these games offer a great variety of play styles (Yee 2007). From the qualitative data gathered from his surveys, he created a list of questions that related to gaming motivations among players of MMORPGs. This inventory, in this paper referred to as the “Yee Gaming Motivations inventory”, provides a foundation for future quantitative research in MMORPGs by providing a model to assess gaming motivations of players.

The Yee Gaming Motivations model consists of three main components, each consisting of several sub-components. The subcomponents focus on different aspects of play but are not seemingly related to each other. The different subcomponents co-exist and together reveal the motivations of a player (Yee 2005).

Achievement	Social	Immersion
Advancement	Socializing	Discovery
Mechanics	Relationship	Role Playing
Competition	Teamwork	Customization
		Escapism

Table 1: The components of the Yee Gaming Motivations with their related subcomponents (Yee 2007).

The first component is the Achievement component, with subcomponents Advancement, Mechanics and Competition. The common denominator of these components is power, or harnessing power. For the Advancement subcomponent the greatest motivators are progress and status, for Mechanics it is about planning, optimization and creating templates to maximize your gains. Players who fall under the Competition subcomponent enjoy the derivation of power that comes from competing with and challenging other players.

For some individuals the greatest motivation for playing is spending time in an environment where you can always find someone to talk to. The Social component consists of the subcomponents Socializing, Relationship and Teamwork. Some people just want to chat casually for the sake of chatting (Social-

izing), while others have a desire to form personal relationships (Relationship). A third category of Social players are those who gain satisfaction from collaborating within a group (Teamwork) (Yee 2005).

The Immersion component is about getting immersed into the gaming environment, living in the game for a little while. Discovering new areas of the game, knowing things that other players do not, and finding hidden things are all parts of the Discovery subcomponent. Players who fall under the subcomponent Role Playing enjoy being part of the storyline and creating well-developed backgrounds for their characters. The Customization subcomponent is about creating a character that is appealing to you by customizing its appearance through different hairstyles, skin color or clothing. Finally, the Escapism subcomponent is about leaving real life behind for a while and letting your mind become fully absorbed by the gaming world, perhaps to relax after a tough day at work.

The Big Five Personality Traits

Personality traits can be defined as habitual patterns of behavior, thought, and emotion (Kassin 2003). These traits are relatively stable over time, influence behavior and differ among individuals. An individual has more or less of every trait, and the traits are more prominent in some individuals, and less prominent in others. For example, some people are open and outgoing, others are shy. Both behaviors are related to the Extraversion trait where the outgoing person has more of the trait, and the shy person has less. There is potentially an unlimited amount of traits, but many psychologists believe that five traits are sufficient to adequately describe human personality (Costa and McCrae 1992); these are commonly referred to as the Big Five personality traits.

First mentioned in 1933 in the American Psychological Association by L.L. Thurstone, the Big Five Model is considered to be the most comprehensive data-driven enquiry (Benet-Martinez 1998). The model is a descriptive five factor model of personality that relates words and behaviors to personality traits. The five traits in the Big Five model are Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism. The five traits each consist of more specific correlating traits. For example; Agreeableness includes such related qualities as having a tendency to be compassionate and cooperative. Extraversion has qualities like sociability, impulsiveness, excitement seeking, and positive emotions included (Benet-Martinez 1998). Though the model has met some critique concerning the factor analytical approach used to arrive at the five distinct traits (e.g. Block 1995), such critique has been responded to by several authors suggesting that the model is

based on far more empirical evidence than a factor analysis on the data set (e.g. Goldberg and Saucier 1995; Costa and McCrae 1995).

An individual who registers high in Openness generally has an appreciation for art of various kinds and is often creative. They tend to be adventurous and appreciate a variety of experience, have unusual ideas and a vivid imagination. A person high in Openness is more likely to be aware of their emotions and intellectually curious (Benet-Martinez 1998).

Conscientiousness is marked by a tendency to act dutifully and make plans rather than show a spontaneous behavior. People who register high in Conscientiousness have a tendency to show self-discipline and aim for achievement. They are generally successful, since they have purposeful planning and are tenacious in what they do (Benet-Martinez 1998).

People who are high in Extraversion are generally confident and they have a tendency to seek stimulation in the company of others. They have a lot of energy and spread positive emotions around them (Benet-Martinez 1998).

Individuals who score high on Agreeableness have a tendency to be compassionate and like to cooperate with others. The trait is marked by a wish for social harmony and they value to get along with others. They are willing to compromise, are helpful and generally trusting in other people (Benet-Martinez 1998).

An individual high in Neuroticism experiences unpleasant emotions easily and the emotions tend to be more persistent. They tend to feel anger, anxiety as well as depression and are more likely to find situations threatening. Individuals who are high in Neuroticism are emotionally reactive and this trait is sometimes called emotional instability (Benet-Martinez 1998).

Results

This section will present the correlations between the Yee Gaming Motivations in relation to the Big Five Personality traits.

Extraversion correlated positively and significantly with the Social component and all Social subcomponents. Extraversion also correlated negatively and significantly with Escapism. Agreeableness correlated negatively and significantly with the Achievement component and the Advancement and Competition subcomponents. There were positive significant correlations between Agreeableness and the Social component and the Socializer and Team-

work subcomponents. Conscientiousness correlated positively and significantly with the Mechanics subcomponent and negatively and significantly with the Competition subcomponent. There were positive and significant correlations between Openness and the Social component, the Socializer and Relationship subcomponents. Openness also correlated

positively and significantly with the Immersion component and all its subcomponents. There was a negative and significant correlation between Openness and the Competition subcomponent. Neuroticism correlated positively and significantly with the Relationship subcomponent, the Immersion component and all its subcomponents.

Motivations	Extraversion	Agreeableness	Conscientiousness	Openness	Neuroticism
Achievement	.072	-.277**	-.007	-.046	.026
Advancement	.067	-.171**	-.011	-.027	.084
Mechanics	.037	-.077	.142**	.030	.050
Competition	.057	-.397**	-.133**	-.106*	.005
Social	.220**	.299**	-.044	.183**	.078
Socializer	.188**	.347**	-.023	.242**	.013
Relationship	.115*	.047	-.071	.134**	.156**
Teamwork	.142**	.220**	.011	-.017	.024
Immersion	-.035	.069	-.051	.313**	.277**
Discovery	-.019	.059	.001	.264**	.215**
Role Playing	-.021	.037	-.067	.294**	.219**
Customization	.027	.035	-.051	.168**	.173**
Escapism	-.118**	.087	-.034	.141**	.203**

Notes: * = $p < .05$; ** = $p < .001$
Main components in bold.

Table 2: Pearson Correlations for Extraversion, Agreeableness, Conscientiousness, Openness and Neuroticism with the Yee Gaming Motivations (n= 489).

There were positive and significant correlations between Openness and the Social component, the Socializer and Relationship subcomponents. Openness also correlated positively and significantly with the Immersion component and all its subcomponents. There was a negative and significant correlation between Openness and the Competition subcomponent. Neuroticism correlated positively and significantly with the Relationship subcomponent, the Immersion component and all its subcomponents.

Discussion

This chapter will initially mention the weaknesses of the present study, and then continue to discuss the validity of the measurements used. Finally, it will discuss the correlations between the personality traits and the Yee Gaming Motivations. A weakness of this study was that the participants all came

from similar forums, with a majority from the World of Warcraft forums. This was a necessity since the participants had to have MMORPG experience. Unfortunately, this makes our sample group quite homogeneous. The sample is not spread out over all World of Warcraft players, but those who actively browse the game related forums and are interested in answering questionnaires. It is possible that such players may have similar preferences or personality traits, perhaps being more Extrovert than the average player. However, there was nothing in our results that indicated that Extroverts, or any other group, were over represented in the sample.

Yee took a factor analytic approach to creating a model for assessment of gaming motivations. It was included in this study because it provides a validated model for measuring gaming motivations, and to further examine the proposed differences between

Yee's and Bartle's models. Finally, the BFI was included because the Big Five model of personality traits is the most comprehensive assessment of personality traits available. Despite receiving some criticism, no one has as of yet presented a model that is considered more valid for its purpose.

Extraversion

The focus for an individual high on Extraversion is to obtain gratification from what is outside the self, and she enjoys being the center of attention. Our results suggest that an Extrovert individual acts similarly in real life and while playing games; always maintaining a focus on social contacts. The correlations between Yee's Social component and the Extraversion trait are both significant ($r = .190$, $r = .220$). Our result further strengthens the theory behind a social motivation for gaming and suggests that the Extrovert personality trait transfers to gaming environments.

Agreeableness

The positive correlation between the Agreeableness trait and the Social component ($r = .299$) is explained through the interest in people and what they have to say. An Agreeable individual strives for social harmony and cooperation within the group or community. A distinction can be made between the Extroverted Socializer, ($r = .220$) who is more focused on satisfying her own social needs, while the Agreeable Socializer is content with simply coexisting in harmony with others.

More surprising was that Yee's Relationship subcomponent did not correlate significantly with Agreeableness, and though there was a positive correlation, it was weak ($r = .047$). One explanation could be that forming a relation with another person requires much more than just a desire to do so, or more than just a trait that supports this behavior. A wish from both players is needed to get along and develop a relation, common interests to discuss, perhaps similar experiences or cultural backgrounds to better understand each other. These are factors that may not always exist, and even an Agreeable person may not find many people to form strong relationships with in games. Another explanation is that forming relationships may not be a true motivation for playing, rather it is a side-effect that occurs through sheer coincidence. For example, you may come across another player while doing a difficult quest. Together you assist each other in completing this quest, and while cooperating and talking about the quest you find out that you actually enjoy talking to this person or have a lot in common. This could be the beginning of a new friendship, formed through random interaction and without thought or intent.

There is also a third and perhaps more plausible explanation. Yee (2007) describes the Relationship subcomponent as having a desire to form strong relationships. This makes the player active in her pursuit of forming these relationships. The Agreeableness trait is more of a passive trait, where people high on it are kind and pleasant, not necessarily in pursuit of new friends. The Relationship-seeking behavior is more of an Extrovert action, and indeed the correlation between Relationship and Extraversion is both positive and significant ($r = .115$).

Conscientiousness

Conscientiousness does not correlate significantly with any of the gaming motivations. This was surprising, since the Conscientiousness trait and Achievement motivation share many characteristics. For example, an individual high on Conscientiousness is hard working, goal oriented and has a need for achievement. This definition is similar to Yee's Achiever type, who does everything to reach certain goals. But the result shows no direct correlation between the two. It is possible that this personality trait does not transfer to a gaming environment, perhaps because playing games does not satisfy the need for structure and self-discipline that individuals high on Conscientiousness want. Perhaps their aim for achievement is not compatible with only achieving things in a gaming environment. It is worth mentioning that the subcomponents of Achievement correlated both positively (Mechanics) and negatively (Advancement, Competition) with Conscientiousness. With this in mind it is more understandable that the overarching component showed no correlation at all. This result raises a question of the construct validity of this component. Do these subcomponents really fit under the same overarching motivation?

Neuroticism

Individuals who score high on Neuroticism may use MMORPGs as a way to escape from reality, the correlation is positive and significant ($r = .277$) with the Immersion component and all subcomponents. For these individuals life can be troublesome due to their neurotic tendencies, and it is possible that they use games to relax and forget about their stressful real life situation for a while. Also, if a stressful or emotionally intense situation occurs in a game, you can quit or log off until you feel stable and have the situation under control again. In everyday life this is a problem for those high on Neuroticism, difficult situations occur but you can not just log off. This makes the Internet and MMORPGs a safe haven for these individuals where they have control and can relax.

However, this is not always a good thing. Turkle (1995) suggested that while there is a certain amount of healthy immersion through exploration and creativity, many apparently find unhealthy escapism instead. Empirical research supports this notion; Internet use increases as people are put under more stress in real life (e.g. Ko et al. 2006). Also, Caplan, Williams and Yee (2009) showed in a later study that the correlation between Immersion and Internet addiction is twice as strong as with any other motivation.

Following this reasoning, it is perhaps not surprising that Neuroticism correlates positively and significantly with the Relationship subcomponent ($r = .156$). Meeting new people or making friends is an emotionally intense situation and if you tend to get nervous easily this could inhibit your attempts to get close to other people. Being safe behind a computer screen while interacting with other people may facilitate the forming of new relationships for someone who in real life finds such situations uncomfortable. This makes MMORPGs an ideal place to form new relationships, even more so for an individual high on Neuroticism.

Openness

For someone who scores high on Openness, an MMORPG offers the perfect environment to try new things and experiment with ideas. With this in mind it is not surprising that the Openness trait correlates positively and significantly with the Immersion component ($r = .313$) and all subcomponents. If you are into creating a new history for your character, exploring a new world or following an exciting storyline, MMORPGs are the perfect place for you.

Notable is that Openness did not correlate significantly with the Teamwork subcomponent, rather there was a weak negative correlation between the two ($r = -.017$). It may be that as an individual high on Openness it could be troublesome to be dependent on other people. If you are part of a group, every decision will usually be made in accordance with the wishes of a majority. This could effectively keep someone who wants to try something new from doing so, since she has to go with the group decision. A person high on Openness may therefore prefer to not be dependent on teamwork, as it could be a hindrance to their discovery of new things.

Conclusion

The result of this study indicates that personality traits do affect why and how we play. The study also offers an explanation to why different players exhibit different motivations when playing. Since every individual has more or less of each personal-

ity trait, and personality traits affect how we play, every player will be as unique in her play style as we are unique in our personality. However, it is important to keep in mind that knowing what traits are stronger in an individual does not necessarily reveal the whole spectrum of her play style. Just like our personality traits do not reveal explicitly who we are or how we act in real life, neither will they reveal explicitly how we act in-game. Our actions are still for us to choose, they are not predetermined.

Knowing that personality traits affect how we play brings us to the conclusion that we transfer part of our real life characteristics when we enter an MMORPG. This notion is supported by prior studies suggesting that for example gender roles transfer to virtual worlds. Yee (2005) found that women tend to take on supportive roles (e.g. healing) far more often than men, and he also found the Mirroring effect showing that people tend to customize their characters in accordance with their physical appearance (e.g. taller people choosing taller avatars). While Yee's discoveries suggests that physical attributes and behaviors transfer to the gaming world, our results indicate that psychological aspects, in this case personality traits, are also transferred. The knowledge that we transfer parts of our personality into the game brings us to the question of how much of our experiences in the gaming world we bring back with us to the real world, and what consequences it could have. For some people it may bring positive experiences by allowing them to be part of a group of people and cooperate towards a common goal. This could have a positive effect on your real life confidence and encourage a person to try doing similar things in real life. There are studies suggesting that making more online friends could have a positive effect on your offline social life as well (e.g. Axelsson and Reagan 2002), but empirical research has also shown mixed results.

On the other hand, it could also have a negative effect if you have a humiliating experience. If you make a fool out of yourself in a game, people are not more accepting or forgiving than in real life. Taunting, bullying and ostracizing are not only a real life phenomenon, it happens just as much or even more on the Internet, and games are no exception. It is important to keep in mind that your actions towards others in a game will affect them in real life to some extent. The extent of the effect may vary depending on personal factors such as self-confidence, but also depending on what game you play. Games like MMORPGs where the player typically spends a lot of time and effort in creating their character, gaining levels or equipment may cause greater distress and feeling of loss when dying. This is an area that future research should explore further, to examine what factors can affect the extent of the psychological ex-

periences you bring out from the gaming world. Another area where our study could prove useful is for educational purposes. Depending on the students' different personality traits the teacher could tailor a method to better accommodate the students' needs. If you could tailor a method to specifically appeal to a student high on Openness, for example by setting up a play depicting a historical event rather than studying them out of a book, they could be more motivated to learn. At the same time, an Achiever might not need a specific method to be motivated to study ancient history, because the knowledge that they can get that A grade is enough to keep them going.

On a final note, there still remains the fundamental question that arose from Turkle's research back in 1995, a question that poses an interesting challenge for future research. Where exactly do we draw the boundary between real and virtual, and should we? Since 1995, the Internet has become even more integrated with our everyday life. Is it still prudent to suggest a distinction between real and virtual, or is our "virtual" self becoming an integrated part of our "real" personality as a result of the increased use of the Internet in society? The result of this study may also support the notion that our real and virtual self is becoming intertwined, that the boundary between real and virtual is being increasingly blurred. This would offer another explanation to why we find correlations between gaming behavior and personality traits, namely because offline and online behavior is becoming increasingly similar. Perhaps we should no longer talk of personality traits, social norms and behavior as "transferring" to the virtual world. Perhaps we should consider the notion that our "real"

self may be almost completely intertwined with our "virtual" self today, in an age where the Internet has become such a fundamental part of our life.

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