Real and character self in a virtual environment: personality traits of World of Warcraft players

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Abstract- This paper investigates the differences between personality traits of an individual and its character in a particular virtual environment (World of Warcraft, a massively multiplayer online role-playing game).Furthermore, we suggest differences between real and character personality traits emerge to gain more social success. Our findings confirm divergences between personality traits of players and their characters, especially in Neuroticism. Results also show that the individuals' real Extraversion and their characters' Openness are the variables that predict social success.

Index Terms- Big Five, personality, virtual environment, World of Warcraft, social success

I. INTRODUCTION

With the rise of virtual communities, individuals can create and explore many other identities (they can be called avatars, characters, alter egos etc.) in social places, and these identities may differ from their real selves (Joinson & Dietz-Uhler, 2002). This self-discrepancy may influence individuals' psychological state (Suh and Shin, 2010), but the theoretical background is still weak.

Researches have investigated the influence of the avatars' appearance on the player's behaviour (Yee & Bailenson, 2007), also the players' judgements of the avatars they encounter (Nowak, 2004; Nowak & Rauh, 2005). Studies found that individuals usually try to create rather realistic avatars of themselves, or an ideal version of themselves (Schroeder, 2002; Taylor, 2002). If they do not succeed and feel that the created avatar is not similar enough, they are unsatisfied. But even those, who enjoy changing the appearance of their avatar or avatars, do not alter its personality (see Ducheneaut, Wen, & Wadley, 2009).

There are only a very few studies focusing on behavioural differences between 'virtual self' and 'real self'. For example Suh and Shin (2010) found that where the discrepancy between real and virtual selves is bigger, the person has lower psychological well-being. While Sung et al. (2011) found differences between the perceived personality traits of individuals and their avatars. Although the research included various types of virtual environments, the methodology lacked a sort of bonding between individual and avatar. Meanwhile in MMORPG (massively multiplayer online role-playing games) games like World of Warcraft, the user creates his or her character that serves as an alterego, and plays with the very same character for hours, days and even years.

In this paper we focus on personality traits of MMORPG players. World of Warcraft is probably the mostly used and known MMORPG of all times, with millions of daily players around the world, therefore we use this particular virtual environment in our research. We suggest that the created character will have different personality traits than the player. We also suggest, that this discrepancy will help the player (or its character) to feel more sociable, popular, respected so in general more socially successfull.

II. METHOD

A. Participants

Participants were 188 World of Warcraft players (84% male, but 41% playing with female character) recruited from international gaming forums. Their ages ranged from 18 to 55 years (M = 23.03, SD = 5.5), they have been daily players for an average of 6 years (SD =102 2.7) at level 94 (0-100, SD = 12), playing around 23 hours per week (0-80, SD = 17.6) and participated in the study in exchange for a chance to win a game card. Subjects all gave their informed consent prior to their inclusion in the study.

B. Materials and Procedure

Demographic information and basic gaming data (level, gaming style, etc.) were gathered using an online survey tool.

Short Big Five Inventory

To measure individual differences in personality traits, we used a type of Big Five Questionnaire that was designed to assess the constellation of traits defined by the Five Factor Model of personality (John and Srivastava, 1999). The Big Five taxonomy or the Five Factor Model represents the diverse systems of personality description in a common framework. It is a hierarchical model of personality traits with five broad dimensions that are the following: Openness to experience (O), Conscientiousness (C), Extraversion (E), Agreeableness (A) and Neuroticism (N)(Goldberg, 1993). The Short 15-item Big Five Inventory (BFI-S, Lang et al., 2011) consist of 15 statements, each of which starts with 'I see myself as someone who'. The individual must indicate their level of agreement for each statement on a 7-points Likert scale where 1 means 'strongly disagree' and 7 means 'strongly agree'. Participants self-reported their personality traits based on the Big Five Inventory (BFI), twice: once normally, answering questions about themselves. Then again, filling the questionnaire as if they were their main character from the game.

Social success

Participants were than asked to estimate the level of their perceived reputation / popularity / number of friends on 7-point Liker scales where 1 meant they are not respected at all / not popular at all / do not have friends at all, and 7 meant that they are well respected / very popular / have many friends in their own community. A single index was formed by averaging across perceived reputation, popularity and number of friends. This variable was called 'Social Success' and the higher its score was, the more socially successfull the participant felt.

III. RESULTS

Vast majority of our sample population was male, hence calculating gender differences would not have given valid result or reliable result.

Correlation analyses

In order to investigate whether participants' self-reported personality ratings (Real variables) correlate with their characters' personality ratings (Character variables), we calculated correlation coefficients between the Real and the Character variables across the Big Five personality dimensions. When controlling for age and gender, partial correlation showed overall Real Big Five and Character Big Five are significantly related (r=.31, p<.01). Also, each Big Five trait's Real and Character variable seemed to be positively related: Real and Character Openness (r=.66, p<.01), Conscientiousness (r=.28, p<.01), Extraversion (r=.27, p<.01), Agreeableness (r=.56, p<.01), and Neuroticism (r=.21, p<.01). Naturally, all the subscales showed correlations with the whole Big Five Inventory. For all the other correlations, see *Table 1* below.

Table 1: Correlations between Real and Character Big Five variables (N = 188).

	1	2	3	4	5	6	7	8	9	10
1. Real O	---									
2. Real C	-.26	----								
3. Real E	.73	.15*	----							
4. Real A	-.51**	.24**	.06	----						
5. Real N	.121	-.80	-.19**	-.22**	----					
6. Character O	.66**	-.01	-.01	-.44**	.19**	----				
7. Character C	-.39**	.28**	.14	.49**	-.28**	-.32**	----			
8. Character E	-.83	.02	.27**	.27**	-.02	.01	.12	----		
9. Character A	-.36**	.23**	.07	.07	-.20**	-.27**	.38**	.25**	----	
10. Character N	.28**	-.06	.02	.02	.27**	.36**	-.41**	-.60	-.13	----

Note: * p<.05, ** p<.01

The Social Success variable showed significant correlations with Real Openness (r=.34, p<.01), Real Extraversion (r=.29, p<.01), Real Agreeableness (r=-.24, p<.01) and with Character Openness (r=.36, p<.01), and Character Neuroticitism (r=.15, p<.05). Cronbach Alpha for Social Success variable was 0.7.

Each participant was given two index scores (for the Real and Character personality traits, that served as selves) for each of the five Big Five dimensions. Mean scores were computed and are shown in *Table 2*. Next, we performed a Paired samples T-test to better investigate the relationship between Real and Character Big Five variables.

Paired samples T-test

Table 2: Descriptive statistics, means, standard deviations, T scores, Cronbach's alphas of variables and effect sizes

	Real			Character
	M (SD)	Cohens's d (effect size)	T score	M (SD)
O	12.64 (4.0)	1.71	2.00*	12.14 (4.1)
C	10.27 (2.4)	32.7	-5.39**	11.6 (3.1)
E	8.31 (2.8)	2.4	-2.75**	9.08 (3.5)
A	10.29 (2.8)	2.7	3.82**	9.46 (3.3)
N	9.19 (3.0)	29.7	13.19**	5.7 (2.8)

*Note: * p<.05, ** p<.01*

There are measurable, significant differences between a person's rating of his/her own personality and his/her rating of his/her character's personality. As *Table 2* shows, all the results were significant. Participants' Real Openness scores were usually higher than their Characters', and they also scored higher both in Agreeableness and Neuroticitism. Meanwhile the Characters' had higher Extraversion and Conscientiousness scores. Participants also showed greater variation between the Real and Character personality on Neuroticism than on the other four dimensions.

Regression Analyses

To answer our proposed research question, we performed an Enter-method Linear Regression Analyses with two Models to determine wheter any of the Big Five traits could be a predictor for Social Success. For results, see Table 3.

Table 3: Regression coefficients between Social Success and Real and Character BFI factors

Block of predictors		β Social Success
1	Real O	.08
	Real C	.09
	Real E	.23**
	Real A	-.14
	Real N	-.13
2	Character O	.27**
	Character C	.00
	Character E	.10
	Character A	-.02
	Character N	.01
	R^2 (for each block)	.215**
		.27**

Note: R^2 is for R-squared effect size for regression analysis.
* $p < .05$ ** $p < .01$

Both models were significant as Model 1 $F(5,182)=6.8$ $p<.01$ and Model 2 $F(10,177)=6.5$ $p<.01$. The only significant predictors of Social Success were Real Extraversion and Character Openness. This suggest the higher the individual's Real Extraversion was, the higher his/her Character's Openness was and hence the individual could feel more Social Success.

IV. SUMMARY AND DISCUSSION

The importance of this study is to reconsider the findings of previous researches suggesting no difference between Real and Character variables. These studies focus mostly on the appearance of the Character (avatar), not the personality traits. In this current study we examined the relationship between a person's own self-rating and the rating of his/her character.

Results show significant differences between Real and Character variables, the most conspicuous difference is the decrease of Neuroticitism in the Characters' values. Low Neuroticism scores referres to emotional stability. People scoring low on Neuroticism usually experience less anxiety, insecurity and vulnerability, do not tend to get angry or depressed as often as people with higher Neuroticism scores. Contrary to many findings that suggest playing online games or video games makes people violent, our results show it may actually strenghten and calm the individuals.

Our findings suggest only predictors of Social Success are Real Extraversion and Character's Openness. This is logical,

hence to play a massively multiplayer game, a certain level of Extraversion is already important, and when someone is already in the gameplay, they better be open to experiences, to form alliances with other players, join guilds, go to fights together with the help of each other. Overall, we can conclude that participants do differ from their characters in the game. It is not yet known whether or not it is a conscious decision to alter one's personality traits when playing, is it part of a strategy needed to achieve in the game, or is it the effect of the alternative virtual environment. But this discrepancy could help individuals to be more socially successfull, with lowered level of Neuroticism and higher level of Openness to experiences.

There are, of course, some limitations to this study. First, we only focused on one specific virtual environment, that is a massively multiplayer online role-playing game, the World of Warcraft. Remaking the research on other virtual environments, for example on social network sites, might result in different outcomes. Furthermore, we did use a questionnaire to measure personality traits, but perhaps applying more specific or better fitted tests would enable us to give more detailed answer to the research question. At last, the utilization of not only self-report questionnaires but reports from participants' friends or absolute zero-acquitances could differ the results too. Further investigations are needed to support current results, and broaden the study on other types of virtual environments.

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