SELF-DISCREPANCY AND MMORPGs:

TESTING THE MODERATING EFFECTS OF AVATAR IDENTIFICATION AND PATHOLOGICAL GAMING IN WORLD OF WARCRAFT

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ABSTRACT

Previous research has shown that MMORPG players create avatars that are seen to possess more ideal personality traits than their actual selves. These findings were automatically attributed to the assumption that gamers use their avatars to alleviate self-discrepancy without sufficiently ruling out other possible explanations. In this article, we provide direct evidence for the self-discrepancy thesis by further incorporating a measure of avatar identification. The results show that a high level of identification with an avatar is indeed related to the creation of a more ideal avatar compared to the self thus proving a meaningful association and ruling out alternative explanations. Secondly, we explore the possibility that pathological gaming can be related to a desire to reduce self discrepancy by evaluating whether gamers with a tendency towards pathological gaming have a stronger desire to reduce self-discrepancy. This hypothesis could only be confirmed for one personality trait, however, i.e. neuroticism, which indicates that pathological gamers create more emotionally stable avatars than they deem themselves and more strongly identify with them. No other significant effects could be found which indicates that there is no direct link between pathological gaming and self-discrepancy, but that self discrepancy is rather a more general factor in game enjoyment.

INTRODUCTION

In recent years, the popularity of massively multiplayer online games (MMORPGs) has grown exponentionally with World of Warcraft (WoW) as one of the leading titles.[1] As with most MMORPGs, players first create a digital alter ego to engage in game play. In the course of the game, players act and interact through these personal avatars that are chosen from a range of races and classes. An implicit goal of the game is to 'level up' (increase the strength and abilities of) your character by collecting experience points and acquiring rare and powerful items.[2] This freedom to tailor and customize an avatar raises the question of whether gamers create their characters out of sheer fantasy or rather take the opportunity to carve out an idealized version of themselves. In this article, we draw upon current theoretical insights[3] and previous empirical research[4] regarding identification in video games. More specifically, we first explore the moderating effect of identifying with a game character on the degree of self-discrepancy. Second, we look into the effect of pathological gaming on the degree of self-discrepancy and analyze whether pathological gamers are more drawn towards the experience of reducing self-discrepancy than non-pathological gamers.

Identification and the theory of self-discrepancy

Klimmt, Hefner and Vorderer[3] argue that in video games, in contrast with traditional, non-interactive media, players do not merely observe the media environment, but are an active part of it. This facilitates an experiential merger of the player with their game avatar, which is referred to as a process of *monadic identification*. More specifically, this merger implies a temporary partial unification of a gamer's self-concept with the perceived attributes of the game protagonist.

According to Klimmt et al.,[3] the enjoyment of identification is rooted in the ability to experience a temporary reduction of self-discrepancy whilst playing a video game. Self-discrepancy theory, which was developed by Higgins in the 1980s, is based upon the notion that individuals experience psychological distress when there is a distance between their actual and their ideal self. Thus it postulates that *'we are motivated to reach a condition where our self-concept matches our personally relevant self-guides'*.[5, p. 321] Video games hold the potential to temporarily enable such a condition. This particularly holds up for game situations in which the avatar can be fully customized, as in MMORPGs like WoW.

This idea has previously been explored empirically in Bessière, Seay and Kiesler's[4] groundbreaking *Ideal Elf* study. In their research they gathered personality ratings of gamers' ideal self, actual self and main WoW avatar. They found that for the personality traits conscientiousness, extraversion and neuroticism, the mean discrepancies between gamers' ideal self and avatar are significantly smaller than those between the gamers' ideal and actual self. This implies that, for these traits, WoW avatars are perceived as more ideal than their actual self. An obvious explanation for this would be that, in line with Klimmt et al's proposition,[3] gamers use their avatar to reduce self-discrepancy while playing. Unfortunately, the study fails to provide definitive evidence for this.

Whereas the relatively smaller distance between avatar and ideal self indicates that the player sees their avatar as more ideal, it does not mean that the player identifies with their avatar and uses it to use it to temporarily relieve self-discrepancy. In fact, there are several alternative explanations. First of all, gamers are able to choose from a wide variety of fantasy characters (e.g. wizards, elves, warriors) that all possess characteristics that to some extent can be deemed more ideal. Moreover, gamers may assemble an avatar with ideal characteristics to

facilitate their game play rather than because they relate these characteristics to themselves. Consequently, a meaningful association, i.e. identification, between WoW players and their avatars is a prerequisite for supporting the self-discrepancy thesis. Hence we propose the following hypothesis:

H1: In comparison to gamers with a low level of avatar identification, gamers with a high level of avatar identification perceive the distance between their ideal self and avatar as smaller than the distance between their ideal self and actual self.

Pathological gaming in MMORPGs

Several studies have indicated that playing MMORPGs consumes considerable amounts of time. For example, in a sample of over 5,000 players, Yee[6] found that almost 23 hours are spent per week. Even more remarkably, a small proportion of 8-9% plays over 40 hours per week. Hsu, Wen and Wu[7] point out that the problematic use of MMORPGs by this small, yet substantial proportion of players has become an important issue for both policy makers and the research community. In their study, they explored factors explaining pathological use of MMORPGs. They identified personal factors (curiosity towards the game and acquisition of rewards), social factors (in-game group belonging and obligations toward this group) and the role-playing factor as significant predictors of pathological gaming.[7] The last factor refers to the interconnection of a user with their role and the avatar through which the role is played. These results are in accordance with the findings of Ducheneaut et al.[2] who found peaks in playing time whenever a highly rewarding level is about to be reached. Moreover, the average playing time per level steeply increases throughout the game and the average playing time of players with avatars that have reached the top level significantly exceeds that of players with lower level characters.

These findings indicate that the activity of advancing an avatar, making it as ideal as possible, requires a significant amount of time and thus can be expected to be a factor in explaining pathological gaming. In fact, Bessière et al.[4] found that WoW players with lower levels of psychological well-being (self-esteem and depression) rated their avatars as more ideal than those who report higher scores. Moreover, other research by Lemmens, Valkenburg & Peter has revealed positive links between pathological gaming and loneliness and aggression, whereas social competence and life satisfaction are negatively associated.[8] Furthermore, heavy online gamers report higher levels of social anxiety and a lower quality of interpersonal relationships. Given these findings, we predict that gamers with high scores for pathological gaming perceive their avatars as more ideal than their actual selves. Therefore, we propose a second hypothesis:

H2: In comparison to gamers with a weak tendency towards pathological gaming, gamers with a strong tendency towards it perceive the distance between their ideal self and avatar as smaller than the distance between their ideal and actual self.

If evidence is found for this second hypothesis, the question arises whether the experience of a temporary reduction of self-discrepancy through gaming is a factor in explaining the process of pathological gaming. Perhaps gamers use their avatars to make up for their perceived shortcomings and to experience a more idealized self. However, as we have previously discussed, the assessment of self-discrepancy requires a direct measure of identification. Otherwise other explanations cannot be ruled out, e.g. that pathological WoW players are attracted by the game mechanics in which avatar advancement is an important factor. The increased investment in the avatar could then produce an idealized perception of this avatar without the player identifying with it and thus without the mechanism of self-discrepancy

reduction playing a role. Finally, previous research by Smahel, Blinka and Ledabyl[9] found a small correlation between ad hoc measures of identification and pathological gaming. Therefore, we propose the following hypothesis:

H3: In comparison to other gamers, gamers with high scores for both pathological gaming and identification perceive the distance between their ideal self and avatar as smaller than the distance between their ideal self and actual self.

METHODOLOGY

Participants and sampling procedure

Between November 2009 and January 2010 WoW players were recruited on game-specific online forums and mailing lists to fill out an online survey. This led to a sample of 304 WoW players (84% male), with a mean age of 24.54 *(SD* = 7.36). On average, the respondents reported having played *World of Warcraft* 15.33 hours *(SD* = 13.91) the week preceding the completion of the survey. They also indicated that they had been a subscriber for over three years (*M* = 3.09, *SD* = 1.54).

Measures

Personality Self. Personality was measured using the Big Five Inventory (BFI)[10] whereby the items were preceded by *'I see myself as someone who…'*: conscientiousness (α = .81), agreeableness (α = .75), neuroticism (α = .78), openness (α = .80) and extraversion (α = .72).

Personality Ideal Self. To measure ideal self, the BFI was used whereby the items were preceded by *'If I could choose the way I was in real life, ideally I would like to be someone*

who…': conscientiousness (α = .77), agreeableness (α = .74), neuroticism (α = .80), openness (α = .79) and extraversion (α = .76).

Personality Avatar. Character personality was measured by the BFI with each item being preceded by *'I see my main character in World of Warcraft as someone who…'*: conscientiousness (α = .77), agreeableness (α = .84), neuroticism (α = .78), openness (α = .82) and extraversion (α = .79).

Avatar Identification. Avatar identification was measured using Van Looy, Courtois and De Vocht's[11] validated 18-item Avatar Identification scale, which is a multifaceted subscale of their Player Identification scale (α = .96), incorporating elements of wishful identification, perceived similarity and embodied presence. A median split was used to divide into high and low avatar identification (Mdn = 2.14).

Pathological Gaming. Pathological gaming was measured using Lemmens, Valkenburg and Peter's[8] validated 21-item Game Addiction Scale. The scale was slightly adapted, changing each *'game'* reference into *'World of Warcraft'* (α = .90). A median split was used to divide into high and low pathological gaming (Mdn = 2.00).

First, the respondents completed the BFI of the actual self, followed by the avatar identification scale, the BFI of the ideal self, the pathological gaming scale and finally the BFI of the avatar. As such, identification and pathological gaming also function as filler tasks to avoid recall effects of the repeated implementation of the BFI.

RESULTS

To determine whether the players' main characters were rated as more ideal than their actual selves, we computed the first discrepancies by subtracting personality scores of ‘Self’ and ‘Avatar’ from the ideal self. Next, paired *t*-tests were performed for each discrepancy pair. Significant results were found for conscientiousness (paired $t(301) = 9.47$, $p < .001$), neuroticism (paired $t(301) = -9.82$, $p < .001$), openness (paired $t(301) = -8.57$, $p < .001$) and extraversion (paired $t(301) = 5.34$, $p < .001$). Except for openness, gamers rated their character as more ideal than their actual self on all personality dimensions. These results mirror the findings of Bessière et al.,[4] who explained the opposite effect of openness by pointing to the fact that *'characters in WoW typically do not enact a creative role; they act at the behest of the player.'*[p. 532]

To test for the three proposed hypotheses, analysis of variance was used, employing the discrepancy scores as within-subjects variables. For each analysis, assumptions of ANOVA were checked.All assumptions, including equality of variances, are met except for mild violations of univariate normality. ANOVA is known to be robust for non-normality, however, especially when applied to larger samples.[12]

H1: In comparison to gamers with a low level of avatar identification, gamers with a high level of avatar identification perceive the distance between their ideal self and avatar as smaller than the distance between their ideal self and actual self.

To test for this hypothesis, avatar identification was employed as a between-subjects variable. Interaction effects are found with all previously significant discrepancy pairs: conscientiousness ($F(1, 302) = 4.01$, $p < .05$), neuroticism ($F(1, 302) = 7.83$, $p < .005$),

openness ($F(1, 302) = 14.67$, $p < .001$) and extraversion ($F(1, 302) = 4.05$, $p < .05$). Figure one depicts the marginal means plots of these four significant interactions. For each interaction, players with high avatar identification have a character that is closer to their ideal self than those who score low for avatar identification. Except for openness, the ideal self - avatar discrepancies are consistently smaller than the ideal self - actual self discrepancies. As such, evidence is found for our first hypothesis.

< Figure 1 >

H2: In comparison to gamers with a weak tendency towards pathological gaming, gamers with a strong tendency towards pathological gaming perceive the distance between their ideal self and avatar as smaller than the distance between their ideal self and actual self.

To test this hypothesis, pathological gaming was used as a between-subjects variable. Significant interaction effects were found for neuroticism ($F(1, 302) = 7.75$, $p < .05$), openness ($F(1, 302) = 6.96$, $p < .05$) and extraversion ($F(1, 302) = 4.85$, $p < .05$). Except for openness, the interactions depicted in figure two show a pattern of a larger ideal self – actual self discrepancy, while the ideal self-avatar discrepancy is smaller.

< Figure 2 >

H3: In comparison to other gamers, gamers with high scores for both pathological gaming and identification perceive the distance between their ideal self and avatar as smaller than the distance between their ideal self and actual self.

For this hypothesis, a three-way mixed model ANOVA was computed, combining the within-subjects discrepancy factor andbetween-subjects identification and pathological gaming factors. The results show a significant difference for neuroticism, whereas interaction effects are found for discrepancy*identification ($F(1, 300) = 4.22$, $p < .05$) and discrepancy*pathological gaming ($F(1, 300) = 4.06$, $p < .05$; Figure 3a). For openness, only the discrepancy*identification proves to be significant ($F(1, 300) = 10.28$, $p < .001$; Figure 3b). In the case of extraversion, the combination of interaction effects is not significant.

< Figure 3 >

DISCUSSION

Based on a substantially larger sample, the results of our research present an exact replication of Bessière et al.'s findings published in their pioneer study in 2007.[4] This showed that WoW players perceive their avatars as more ideal than their actual selves on a majority of personality dimensions. As we indicated above, despite claims to the contrary, these findings do not provide direct evidence for the self-discrepancy hypothesis, i.e. that gamers use their avatar to alleviate psychological tension by temporarily reducing the distance between themselves and their ideal.[3] In order to do this, it was necessary to rule out the possibility that gamers do not meaningfully associate themselves with their avatar and just see it as more ideal because the game depicts a more ideal world or because creating a more ideal avatar is necessary for being successful in the game. This was analyzed by comparing discrepancies with avatar identification measurements which showed that gamers who identify strongly with their avatar perceive the distance between their ideal self and avatar as being smaller relative to the distance between their ideal and actual self. This effectively shows that WoW

players maintain a meaningful relationship with their avatar which in turn provides further evidence for the self-discrepancy hypothesis in relation to the playing of MMORPGs.

Finally, based on the idea that pathological gaming could be accompanied by a stronger desire to reduce self-discrepancy and thus alleviate psychological tension, we compared pathological gaming scores and discrepancies. Results indicate that there is little difference in discrepancies between gamers who report a high tendency towards pathological behavior vs. those who report a low one. For only one dimension, i.e. neuroticism, we found simultaneous interactions between discrepancy on the one hand and identification and pathological gaming on the other. This indicates that WoW players with a tendency towards pathological gaming create and identify with avatars that are much more emotionally stable than their actual selves. In other words, they create an avatar that is more ideal on the dimension of neuroticism and then identify with it more strongly. For all other personality traits, however, there are no significant differences in discrepancies between more and less pathological gamers. This suggests that pathological gaming is not primarily motivated by the desire to alleviate psychological distress by reducing self-discrepancy. Rather, it is likely that self-discrepancy reduction is more generally related to game enjoyment. Further research is needed to verify this claim and explore other aspects of game experience in relation to pathological gaming.

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AUTHOR DISCLOSURE STATEMENT

Competing financial interest: none declared for the submitted paper.

Figure legend:

Figure 1.eps	Caption: "Marginal means plots of Discrepancy*Identification"
Figure 2.eps	Caption: "Marginal means plots of Discrepancy*Pathological Gaming"
Figure 3.eps	Caption: "Marginal means graphs of Discrepancy*Identification*Pathological Gaming"