Computers in Human Behavior 27 (2011) 1815–1819

Contents lists available at ScienceDirect

Computers in Human Behavior

journal homepage: www.elsevier.com/locate/comphumbeh

The role of trait emotional intelligence in gamers' preferences for play and frequency of gaming

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ARTICLE INFO

Article history:
Available online 6 May 2011

Keywords:
Trait EI
Preferences for play
Frequency of gaming
Online gaming

ABSTRACT

This paper examines the role of trait emotional intelligence (trait EI) in gamers' preferences for play and frequency of gaming in a sample of 1051 young adult US/European gamers, who play frequently the online massively multiplayer game, World of Warcraft (WoW). Trait EI was shown to predict social and achievement preferences for play as well as frequency of gaming. In particular, trait EI was positively correlated to a preference for social practices per se and negatively correlated to a preference for achievement-oriented, instrumental practices. These findings advocate that gamers' preferences for play are in accordance with their emotion-related personality characteristics. Trait EI was also negatively associated with frequency of gaming suggesting that lower scorers on trait EI are more likely associated with more frequent game use.

1. Introduction

Digital games comprise a highly popular recreational activity among all ages. Within the last 10 years, computer and video games sales in US almost doubled exceeding the 11 billion dollars (ESA, 2010). The number of subscribers of online games such as the World of Warcraft has reached the 2 million in Europe, 2.5 million in America and 5.5 million in Asia (Woodcock, 2008). Such a widespread use has raised the interest of both the academia and the industry to explore the factors reinforcing game participation. These studies have been focused on the identification of specific design features which reinforce game uses such as fantasy and multiplayer features (e.g., Burn & Carr, 2006; Wood, Griffiths, Chappell, & Davies, 2004). However, comparatively little research has been conducted on analysing gamers' personality traits and their relationship to either game preferences (Chen, Tu, & Wang, 2008; Ravaja et al., 2004) or frequency of gaming (Lo, Wang, & Fang, 2005; Parker, Taylor, Eastabrook, Schell, & Wood, 2008; Peters & Malesky, 2008). This study contributes to this line of research by examining gamers' personality traits. In particular, trait emotional intelligence (trait EI) and its relationship to *both* preferences for play and frequency of gaming are examined.

In this paper 'play' refers to online gaming, specifically Massively Multiplayer Online Role-Playing Games (MMORPGs). MMORPGs are online game worlds inhabited simultaneously by hundreds of gamers that interact within the same game space. Gaming in this context, is based on the constant progression and growth of the characters each gamer is controlling. The choice of action is decided by the gamer (Juul, 2005). Single play mode is no longer a viable option when gamers reach a certain point in the game, due mostly to a higher level of difficulty (Wolf, 2007). Gaming becomes intensively social when advanced gamers need to form groups (Ducheneaut, Yee, Nickell, & Moore, 2006a). Statistics reveal that the top selling MMORPG is World of Warcraft (WoW) (ESA, 2009). The rich social culture that has been developed around it has been the focus of research for the past few years (e.g., Ducheneaut et al., 2006a; Guitton, 2010; Lindtner et al., 2008; Nardi & Harris, 2006) making it an appropriate game for this research.

1.1. Trait EI

Trait EI refers to individuals' self-perceptions of their emotion-related abilities and behavior dispositions (Petrides, Pita, & Kokkinaki, 2007). It is a self-reported personality construct which assesses well-being, emotionality, sociability and self-control (see Table 1). Trait EI is conceptually dissimilar from ability EI (e.g., Joseph & Newman, 2010; Petrides, Furnham, & Mavroveli, 2007), which refers to a set of cognitive abilities evident in a series of emotion-related skills that can be measured through maximum performance tests (Mayer & Salovey, 1997). Scoring problems entailed in the use of maximum performance tests for measuring

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doi:10.1016/j.chb.2011.04.001

Table 1
Description of the TEIQue-SF.

Scale description	
TEIQue-SF	Assessing self-perceived abilities and behavioral dispositions
Well-being	Concerns generalized sense of well-being and fulfillment about life (e.g., I generally do not find life enjoyable)
Self-control	Concerns control over urges and desires (e.g., I usually find it difficult to regulate my emotions)
Emotionality	Concerns emotion-related skills and personal relationships (e.g., Many times, I cannot figure out what emotion I'm feeling)
Sociability	Concerns social relationships and social influence (e.g., I can deal effectively with people)

Note. In parentheses are sample items.

ability EI restrict the validity of this construct (Freudenthaler & Neubauer, 2005).

By conceptualizing emotional intelligence as a personality trait rather than mental ability, different measurement approaches are applied leading to different outcomes (self-reported measures versus maximum performance tests). In terms of the construct's incremental validity, the existence of trait EI within both the Big Five and the Giant Three as a distinct dimension at the lower-level of hierarchical trait taxonomies has been confirmed (e.g., Petrides, Furnham et al., 2007). Incremental trait EI effects beyond other emotion-related variables such as social desirability and alexithymia (Mikolajczak, Luminet, Leroy, & Roy, 2007; Mikolajczak, Menil, & Luminet, 2007) have also been established.

Moreover, a growing number of studies relate trait EI to different variables demonstrating criterion validity. Trait EI has been positively associated to, for example, life satisfaction (Petrides, Pérez-González, & Furnham, 2007) and adaptive coping styles (Petrides, Pita et al., 2007) while it is inversely associated to maladaptive styles (Petrides, Pita et al., 2007; Petrides, Pérez-González et al., 2007) and depression (Mikolajczak et al., 2007). In contrast to high trait EI scorers, individuals with low trait EI are more likely to experience "personality disorders" (Petrides, Pérez-González et al., 2007).

1.2. Preferences for play

Preferences for play refer to gamers' preference for certain types of play within MMORPGs. The three major preferences for play are (a) social preferences – gameplay focused on socializing, teamwork and creating relationships, (b) achievement preferences – gameplay involving advancement, competition and an interest in game mechanics and, (c) immersion preferences – gameplay that involves role-playing, discovery, customization, and escapism (Yee, 2006, 2007) (see Table 2 for a detailed analysis). These types of play have been structured into a scale (Motivations of Play scale; Yee, 2006, 2007) which was emerged after a series of online surveys with a large number of MMORPG gamers.

1.3. Frequency of gaming

Frequency of gaming refers to the intensity (days per week) and duration of gaming (hours per day playing games generally and hours per day playing explicitly WoW).

1.4. Trait EI and preferences for play

The relationship between personality traits and game preferences is not well-documented in the literature. Studies identified report both on digital and non-digital games advocating that preferences for play more likely accord with personality characteristics. An examination of board-based chess showed that children scoring lower in agreeableness are more likely to be attracted and play chess (Bilalić, McLeod, & Gobet, 2007). Given the competitive and aggressive side of chess this preference fits well with gamers' personality and their tendency to being more self-interested rather than socially concerned and empathic. Similarly, high impulsive sensation seekers were found to choose dangerous and exciting games due to the satisfaction of the need for thrill characterizing high sensation seeking (Ravaja et al., 2004). The exploration of online gamers' personality and life satisfaction also revealed that online gamers could be more satisfied when playing games that accord with their personality traits (Chen, Sun, & Hsieh, 2008). Likewise, studies examining broad internet use showed that higher scores on extraversion, agreeableness and openness relate to preferences for two-way collaborative online discussions, whereas one-way communication styles that do not solicit reaction are preferred by low scorers in the aforementioned traits (Chen & Caropreso, 2004). To the best of authors' knowledge, no studies were found examining trait EI and preferences for play. With this study we try to contribute to this gap by reporting the relationships between gamers' trait EI and preferences for play as a means to understand the personality motives underlying gamers' preferences. These relationships can be usefully explored in MMORPGs since these games support the creation of multiple social and emotional bonds (Yee, 2007) and allow the gamers to determine their preferences for play. In this respect, they are suitable spaces for individuals to express themselves and their emotions.

It is hypothesized that trait EI will be positively related to social preferences for play (H1). Specifically, it is expected that gamers with higher scores on trait EI, thus those who perceive themselves as being more confident within social conditions and in developing meaningful relationships, will be more interested in socializing, group work and creating online relationships. Given the intense social nature of these preferences for play, more socially and emotionally inclined individuals will more likely become involved into practices that match with these emotional characteristics. On the contrary, it is hypothesized that trait EI will be negatively related to achievement preferences for play (H2). Gamers with lower scores on trait EI will more likely be prone to achievement preferences for play. These preferences for play are mostly self-oriented; gamers are focused on advancing their game characters, competing with others, and spending time learning about game mechanics. Considering that lower scorers on trait EI experience more social discomfort and reservation, achievement preferences for play may contribute to their becoming self-sustained individuals during gameplay thus minimizing the need for social interaction and support. Immersion preferences for play (i.e., discovery, role-playing, customization and escapism) were considered to be of less relevance to the trait EI theory, thus, not included in the hypotheses.

1.5. Trait EI and frequency of gaming

The relationship between self-report emotional intelligence and frequency of gaming was first examined by Parker et al. (2008). Lower scores on emotional intelligence and, in particular, less fulfilling interpersonal abilities were found to explain online game overuse mostly for younger groups. Peters and Malesky (2008), however, noted that not all frequent gamers demonstrate problems with games but only those gamers with lower scores on agreeableness and higher scores on neuroticism. Social anxiety and lower levels of life satisfaction were also found to be related to prolonged time spent on gaming (Liu & Peng, 2009; Lo et al., 2005). In addition, MMORPG gamers, by perceiving games' sociality as more pleasant and rewarding than in real-life, tend to game more intensively compared to offline video gamers (Brian & Wiemer-Hastings, 2005). Such propensity can be explained by the fact

Table 2
Description of preferences for play as measured by the motivations of play scale.

Preferences for play	Description
Achievement	
Advancement	Being interested in gaining power and progress (e.g., How important is to level up you character as fast as possible in WoW)
Mechanics	Being interested in analyzing the underlying rules in order to optimize character performance (e.g., How important is to know as much as possible about the game mechanics and rules in WoW)
Competition	Being interested in competing with others (e.g., How enjoyable is competing with other players in WoW)
Social	
Socializing	Being interested in helping and chatting with other gamers (e.g., How enjoyable is to chat with other players in WoW)
Relationship	Being interested in forming meaningful relationships with others (e.g., How often do you talk to your online friends about your personal issues in WoW)
Teamwork	Deriving satisfaction from being part of a group effort (e.g., How enjoyable is working with others in a group in WoW)
Immersion	
Discovery	Knowing things that most other players do not know about (e.g., How enjoyable is exploring every map or zone in the world in WoW)
Role-playing	Creating a persona and interacting with others to create an improvised story (e.g., How often do you role-play your character in WoW)
Customization	Being interested in customizing the appearance of their character (e.g., How important is your character to look different from other characters)
Escapism	Using the game to avoid thinking about real life problems (e.g., How often do you play WoW to relax from the day's work)

Note. In parentheses are sample items.

that the internet is a space where "many of the situational factors that foster feelings of anxiety (e.g., talking to someone face to face, having to respond on the spot with verbal exchanges, etc.) are absent" (McKenna & Bargh, 2000, p. 67). This study provides further evidence on the scant literature examining emotional intelligence and frequency of gaming hypothesizing that trait EI will be negatively related to frequency of gaming (H3).

In this paper, the term 'gamers' refers specifically to high-end gamers; those gamers who have reached the most advanced (highest) level in the game. At this level gamers are forced to group in order to develop further thus promoting social forms of play (Ducheneaut, Yee, Nickell, & Moore, 2006b). The social nature of high-end gaming allows for a better exploration of trait EI since more emotional and social bonds can be identified at that game level.

2. Method

2.1. Participants

The sample of this study was 1051 WoW high-end gamers, 96% of whom were males and 4% females. Gamers were defined as 'high-end' on the criterion that they had reached the highest game level. Their origins were mainly North American and European. The sample comprised of 80.5% 16–25 years old, 17.6% 26–40 years old, and only 1.9% over 40 years old. They played WoW both frequently and intensively (days per week playing games: $M = 6.34$, SD = 1.11; hours per day playing games: $M = 4.58$, SD = 1.23; hours per day playing WoW: $M = 4.41$, SD = 1.28).

2.2. Procedure

Data were collected through an online survey. An announcement asking for "gamers of WoW to complete a questionnaire about WoW gameplay" was posted in the forum section of the two official WoW sites and in other WoW discussion forums. Those interested could follow the web-link to the survey which was deactivated in 2 weeks time, after a considerable number of responses was collected. The participants completing the questionnaire were entered into a prize draw from which two of them were informed about winning one month's free subscription to WoW.

2.3. Measures

2.3.1. Trait emotional intelligence questionnaire

The short version of the Trait Emotional Intelligence Questionnaire (TEIQue-SF; Petrides, 2009) was used to measure trait EI. The inventory includes 30 items on a seven-point Likert scale providing scores on global EI (alpha = .90) and four factors, Emotionality (alpha = .69), Sociability (alpha = .69), Self-control (alpha = .75) and Well-being (alpha = .80) (see Table 1). The instrument has criterion (e.g., Mikolajczak et al., 2007) and incremental validity (Mikolajczak, Luminet, & Menil, 2006) as well as conformity of findings with previous research in the field (e.g., Johnson, Batey, & Holdsworth, 2009).

2.3.2. Motivations of play scale

The Motivations of Play scale (Yee, 2006, 2007) measured preferences for play. The inventory includes 40 items on a 5-point Likert scale. Scores on Achievement (alpha = .74) and Social (alpha = .70) factors explicitly for WoW were extracted.

2.4. Results

Simple regression analysis was conducted to examine the relationship between trait EI and social preferences for play (H1). The means, SDs and intercorrelations among variables are presented in Table 3. The results were statistically significant, $F(1, 1049) = 24.98$, $p < .001$. The adjusted R^2 value was .02. It is indicated that only 2% of the variance in social preferences for play is explained by trait EI. Similarly for H2, the model for trait EI and achievement preferences for play was found to be significant, $F(1, 1049) = 547.75$, $p = .005$, adjusted R^2 value .01. Finally, simple regression analysis was conducted to explore the relationship between trait EI and (a) days per week playing games, $F(1, 1049) = 15.63$, $p < .001$, adjusted R^2 value .01, (b) hours per day playing games, $F(1, 1013) = 27.18$, $p < .001$, adjusted R^2 value .03 and, (c) hours per day playing WoW, $F(1, 1042) = 12.42$, $p < .001$, adjusted R^2 value .01. Although all three models were found to be significant, trait EI could predict a larger variance (3%) in variable *b* (hours per day playing games) rather than variables *a* and *c*. Overall, the identified effect sizes were weak suggesting that trait EI can explain a relatively small percentage of variance in preferences for play and frequency of gaming.

3. Discussion

The construct of trait EI was found to predict both social and achievement preferences for play. Accepting H1 and H2, gamers with lower scores on trait EI were found to be more engaged to achievement-oriented activities ($r = -.09$, $p < .001$) and gamers with higher trait EI showed greater preference for socializing, teamwork and relationships ($r = .15$, $p < .001$). That is to say,

Table 3
Means, SDs and intercorrelations between global trait EI, four trait EI components, preferences for play and frequencies of gaming.

Variables	*M*	SD	1	1.1	1.2	1.3	1.4	2.1	2.2	3.1	3.2	3.3
1. Trait EI	4.85	.81	–	–	–	–	–	–	–	–	–	–
1.1 Well-being	5.13	1.11	.82**	–	–	–	–	–	–	–	–	–
1.2 Self-control	4.66	1.02	.73**	.49**	–	–	–	–	–	–	–	–
1.3 Emotionality	4.81	.96	.82**	.54**	.47**	–	–	–	–	–	–	–
1.4 Sociability	4.88	.10	.77**	.54**	.44**	.56**	–	–	–	–	–	–
2. Preferences for play												
2.1 Achievement	45.18	8.30	−.09**	−.04	−.11**	−.12**	.03	–	–	–	–	–
2.2 Social	38.21	6.07	.15**	.13**	.05	.19**	.09**	−.04	–	–	–	–
3. Frequencies of gaming												
3.1 Days per week	6.34	1.12	−.12**	−.11**	−.09**	−.11**	−.06*	.21**	−.02	–	–	–
3.2 Hours per day	4.58	1.23	−.16**	−.16**	−.09**	−.16**	−.09**	.26**	.00	.39**	–	–
3.3 Hours per day WoW	4.41	1.29	−.11**	−.13**	−.05	−.11**	−.04	.26**	−.00	.36**	.87**	–

* $p < .05$.
** $p < .01$.

gamers concerned with their characters' advancement, being competitive and members of 'serious' guilds that are focused on achieving the game goals (Yee, 2007) are more likely to have lower trait EI scores while gamers interested in creating meaningful relationships, being friendly, joining casual guilds and chatting with others (Yee, 2007) are more likely to present higher scores on trait EI.

Overall, gamers' perceptions of their emotional abilities and dispositions are mirrored in their preferences for play since those gamers who are more confident within social environments were identified to be more interested in social activities per se and vice versa. Gaming is likely to become a projective medium reflecting the gamers' own personality. This evidence also suggests that despite the fact that high-end gameplay requires group work and social interactions (Ducheneaut et al., 2006a) gamers most likely personalize in-game sociality in order to fit their emotion-related dispositions. They can form and follow their own way of gameplay which is either focused on social aspects of gaming per se such as socializing or on achievement and progression, advocating that self-oriented gaming could be identified within collective conditions of play. Although gamers more interested in achievement practices can be found within serious guilds they more likely utilize group setting instrumentally to achieve in-game goals and progress. The analysis of guilds' structure (i.e., small, large, elite, stable, and newbie) within WoW (Chen et al., 2008) confirms the variability of game aims and the gamers' influential role in guilds' life cycles.

In terms of H3, trait EI was found to predict frequency of gaming. In particular, trait EI was negatively related to all three frequency variables ($r = -.12$, $r = -.16$, $r = -.11$, $p < .001$) suggesting that gamers who perceive their lives as being less satisfying and their social and emotional relationships as being less fulfilling might be associated with greater game use. This finding contests with the identification that real-life psychological inefficiencies such as stress, anxiety and less fulfilling social relationships are associated with excessive game uses (e.g., Griffiths, 2000).

Overall, as hypothesized trait EI was identified to predict social and achievement preferences for play as well as frequency of gaming. However, the percentage of variance explained by trait EI was relatively small (ranged between 1% and 3%) suggesting that additional factors exist and predict a larger amount of variance in gaming. Future studies should follow a similar line of research and examine the interrelationships between different psychological constructs (e.g., the Big Five measuring the five dimensions of personality, Basic Psychological needs measuring needs satisfaction) and gaming.

WoW holds the larger share of MMORPG gamers in the market (ESA, 2009) and attracts mainly males (Yee, 2007). Findings therefore reflect the personality characteristics and game preferences of the male population of gamers, thus, generalization to both genders should be made with caution, though gamers often have similar preferences (Carr, 2006). Considering that gender has been identified as a significant predictor of trait EI scores (Petrides & Furnham, 2000), an examination of a larger sample of female gamers might reveal different associations between the variables under study.

4. Conclusions and implications for future research

By linking trait EI with preferences for play, this study has shown games to be suitable spaces for individuals to express themselves through their emotions. As expected, a positive relationship between trait EI and social preferences for play and a negative relationship between trait EI and achievement preferences for play were found. Trait EI was also negatively associated with frequency of gaming suggesting that highly frequent game use might be associated with gamers' self-perceptions of real-life social and emotional problems. These findings advocate that gamers' emotional traits more likely work motivationally reinforcing specific game uses. Thus, personality traits should be considered in the examination of the motivational nature of gaming in terms of both preferences for play and frequency of gaming. The gamer and his/her personality should be examined along with game design elements that promote engagement if it is to better understand what makes games such an appealing activity.

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