Third-Person Perceptions and Online Games: A Comparison of Perceived Antisocial and Prosocial Game Effects

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The popularity of online games has inspired controversial discussion on the effects of game-play in both mass media and academia. However, we know little about ordinary people’s opinions about the effects of game-play. The current study applies the theory of the third-person effect (TPE) to examine people’s perceptions of game effects on self and on others, and detects significant third-person perceptual discrepancies. The results show that the magnitude of third-person perceptions is influenced by the social desirability of the message, the social distance between self and others, and by differential exposure to online games. The data supports the hypotheses that Internet efficacy and interdependent self-construal are significant antecedents of third-person perceptions, and partially supports the interaction effect of self-construal with Internet-efficacy and the interaction effect of self-construal with media social desirability.

Key words: Third-person effect, Online games, Social desirability, Social distance, Self-construal, Internet efficacy.

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Introduction

Online games are widely diffused video games attracting millions of players all around the world. Yee (2006) collected online survey data from game players in North America and found that the average age of the respondents was 27 (N = 5509) and they averagely spent 23 hours each week in chosen online games. In 2005, 29 million Chinese people played online games and it was predicted that the number would climb to 40 million in 2010 (iResearch.com, 2005). According to the online survey conducted by iResearch.com, the average age of Chinese gamers (N = 119591) was 24. On average, the Chinese respondents spent 4 hours per day on game-play and they continued to play the same game for 8 months. Online games have deeply embedded in the daily lives of gamers, which raises a problem about the consequences of indulging in the game world.
The popularity of online games has fuelled controversial discussion on the effects of game-play. Online games have been criticized for many reasons, one being the possibility of causing game addiction, so that players become completely absorbed in game-play and continue to play games even though they might feel exhausted (Rau, Peng, & Yang, 2006). Griffiths and Hunt (1998) pointed out that both parents and professionals believed that children’s addiction to video games may disturb their normal learning, cognition, socialization and mental development. Some other scholars, however, have focused on the prosocial effects fostered by gaming. Nardi and Harris (2006) analyzed collaborative game-play and found that online games promoted offline social connections by stimulating collective activities. Steinkuehler and Williams (2006) claimed that online games appeared to function best as “third places” for informal sociability (“first place” referring to home and “second place” to workplace) (Oldenburg, 1999), where people are able to establish and maintain social ties by playing with strangers and making new friends. The weak ties established may help to broaden gamers’ horizons or worldviews, and may also offer new information resources and new opportunities. Online game-play thus appears as a double-edged sword. However, the images of online games in Chinese mass media and academia are always negative, although the number of game players is increasing annually (iResearch.com, 2005, 2006).

This paper investigates how Chinese people perceive the impact of online games on themselves and on others, from the point of view of “third-person effect” (TPE) theory. The third-person effect refers to people’s tendency to assume that media content has a stronger effect on others than on themselves (Davison, 1983). According to Gunther (1995), the third-person effect has two components. The first suggests that people are prone to view themselves as distinct from others, or as smarter than others, and as a result tend to estimate that they are more resistant to media effects than others. The second component proposes that, based on their perceptual bias, people may hold different attitudes toward endorsing censorship on the media. This study emphasizes the first component, referred to as “third-person perceptions” (TPP).

Perloff (2002) has noted that the magnitude of the third-person effect is moderated by the desirability of the message content, the social distance between self and the “comparison other,” and the attributes of individuals. Lee and Tamborini (2005) suggested that it is necessary to elaborate fully the theoretical processes governing the third-person perceptions. The current study tests the third-person perceptions among Chinese game players and finds significant antecedents and moderators.

The Effect of Social Desirability of Media Content on Third-Person Perceptions

Prior studies (e.g. Gunther & Mundy, 1993; McLeod, Detenber, & Eveland, 2001; Price, Huang, & Tewksbury, 1997) have suggested that third-person perceptual discrepancies are caused by people’s biased optimism that they are superior or
smarter than others. Motivated by the need for ego enhancement, people tend to generate self-esteem or sense of control by perceiving themselves as more competent or intelligent than others, and are therefore likely to see themselves as impervious to undesirable media influence. However, whether or not this optimistic bias yields third-person perceptions depends on whether the media content in question is harmful or beneficial (Gunther & Mundy, 1993).

Third-person perceptions are usually associated with antisocial media content rather than prosocial media content (Duck & Mullin, 1995; Elder, Douglas, & Sutton, 2006; Gunther & Mundy, 1993). In other words, people are more likely to acknowledge that they may be influenced by prosocial media content and less likely to acknowledge that they may be affected by antisocial media content. However, if the media content in question is potentially beneficial, they may be motivated to enhance their own self-esteem through believing that they are more responsive to desirable media or more capable of enjoying the benefits brought by the media (Duck, Terry, & Hogg, 1995). Thus the perception that others are more influenced by the media than self may be reversed in the case of media messages perceived to be desirable (Elder et al., 2006; Gunther & Mundy, 1993; Gunther & Thorson, 1992; Salwen & Dupagne, 1999). Although many studies (e.g. Brosius & Engel, 1996; David, Liu, & Myser, 2004; Duck & Mullin, 1995; Eveland & McLeod, 1999; Gunther & Thorson, 1992; Meirick, 2004; Thorson & Coyle, 1994) have tested the hypothesis that pro-social messages may produce weaker, nonexistent, or reverse third-person perceptions, there has so far been no consistent evidence for significant reverse third-person perceptions (Eveland & McLeod, 1999). Gunther and Thorson (1992) predicted that public service announcements (PSAs) would be considered as prosocial and might elicit a reverse third-person effect, but they did not find significant difference between perceived effects on self and on others. David, Liu and Myser (2004) tried within-subject design, between-subject design and controlled accountability to test the perceived effects of prosocial and antisocial media messages. The results suggested that the third-person effect was a persistent social judgment bias, whereas the reverse third-person effect appeared to be less robust. Sun, Pan and Shen (2008) conducted a meta-analysis of 60 papers on third-person perceptions. The findings showed that the effect size for reverse third-person perceptions was not statistically significant. Nevertheless, there is consistent evidence that third-person perceptions are typically stronger for socially undesirable messages than for socially desirable ones (David et al., 2004; Eveland & McLeod, 1999; Gunther & Mundy, 1993; Hoffner & Buchanan, 2002; Sun et al., 2008).

As stated before, researchers have revealed both socially desirable and socially undesirable effects of online game-play. Some studies have found that adolescents tend to play online games for hours in isolation, running the risk of developing an addiction (Chen & Park, 2005; Chiu, Lee, & Huang, 2004; Lee, Yu, & Lin, 2007). Chen and Park (2005) explained that flow experience is the main cause of game addiction, in which a player’s consciousness is focused on a narrow field and all irrelevant things are filtered out, so that the individual might lose sensibility and
sense of time. Since game players always try to achieve higher hierarchical status in
the games, they are continuously involved in such flow experience, which may be
harmful to their daily lives. “Game addiction” has always been considered as negative
and detrimental by many Chinese people. As Golub and Lingley (2008) pointed out,
pathological behavior caused by the Internet and online games has featured in the
Chinese press since 2002. In 2005, the Chinese Academy of Sciences and the China
Youth Association Network considered that Internet addiction, especially online
game addiction, was a serious problem in China (Funk, 2007).

More recently, some researchers have started to investigate the social impact of
online games. Steinkuehler and Williams (2006) have observed that relationships and
behaviors associated with bridging social capital (social relationships that typically
function to expose the individual to a diversity of worldviews) were highly prevalent
and noticeable in their online games data corpus. In this sense, online games, especially
“massively multiplayer role-playing online games” (MMORPGs hereafter), serve as
a kind of communication tool on the Internet, because the social relationships
in the game world function as an extension to, and a supplement of, preexisting
offline interactions (Haythornthwaite, 2002; Wellman, Quan-Haase, Boase, Chen,
Hampton, & Diaz, 2003).

Hence, we arrive at the first set of hypotheses:

H1: Perceived antisocial game effects on others will be greater than perceived antisocial game
effects on self.

H2: The strength of third-person perceptions will be greater for antisocial game effects than
for prosocial game effects.

The Effect of Social Distance on Third-Person Perceptions
The nature of the “comparison other” may be crucial for the size and direction
of the third-person effect (Elder et al., 2006). The third-person effect has been
found to increase as others become more socially distant from the perceiver. Social
distance can be conceptualized as the degree of similarity between self and others
(Eveland, Nathanson, Detenber, & McLeod, 1999). When the “comparison other”
is socially distant rather than close, third-person perceptions may be magnified
(Duck & Mullin, 1995; Eveland et al., 1999). Cohen, Mutz, Price, and Gunther
(1988) discovered that perceived impact of a defamatory news story on Stanford
University students was smallest on “self,” increased for “other Stanford students,”
increased further for “other Californians,” and was greatest for “public opinion at
large.” White (1997) detected a similar pattern on students for self, local students,
students at other universities, and other state residents. Meirick (2005) revealed that
socially distant groups, such as “the public,” were estimated to be more influenced by
cigarette ads than socially close groups, such as friends. Social identity theory (Tajfel
& Turner, 1986) and self-categorization theory (Turner, Hogg, Oakes, Reicher, &
Wetherell, 1987) may shed light on the effect of social distance by claiming that
people are inclined to highlight their similarities to in-group members and highlight their differences from out-group members. Thus, when people are making group comparisons, they tend to favor the in-group as a way to enhance self-esteem (Meirick, 2004). Another account of the social distance effect is posed by Brosius and Engle (1996), who found that people think the mass media may elicit a stronger influence at the societal level, whereas personal-level influence is engendered by interpersonal communication. Hence, the less specifically others are described, the more judgments on a societal level (strong media effects) will be made on them. Put another way, the more similar others are to the respondent, the more personal judgments (weak media effects) will be expected to affect them.

From this reasoning, the next hypothesis is developed:

H3: Third-person perceptual discrepancies will increase as the social distance from others increases, concerning both antisocial and prosocial game effects.

The Effect of Media Exposure on Third-Person Perceptions

Eveland et al. (1999) proposed that third-person perceptions may be caused by people’s assumptions about the relative exposure of target others to specific negative messages. Innes and Zeitz (1988) found that light television viewers expressed stronger third-person perceptions than moderate or heavy viewers did. Some other studies (Donnerstein, Slaby, & Eron, 1994; Hoffner, Buchanan, Anderson, Hubbs, Kamigaki, Kowalczyk, Pastorek, & Plotkin, 1999) have revealed that heavier TV viewers might experience desensitization, and were less disturbed by violent media content and less worried about harmful media effects on society than lighter TV viewers. Fisher, Cook, and Shirkey (1994) found that individuals with less exposure to explicit sexual media expressed greater concern about the antisocial effects of pornography.

However, exposure to online games is different from exposure to other media. A television viewer cannot influence what happens or what is being shown on TV. A game player, however, plays an active part in the games (Van Mierlo & Van den Bulck, 2004). Specifically, he/she is able to choose a particular type of game to play, as well as to choose a particular character role and to take a unique strategy for living in the fantasy world. Hence, the game content is driven in part by the coding of the game designers and in part by the actions of the gamers (Williams, 2006). In Chinese game market, the popular genres of online games include card games, sports games and MMORPGs; each genre has its special attributes, suggesting that different third-person perceptions may occur to people who are exposed to different types of online games.

In 2005, 55% of Chinese game players played a particular kind of MMORPG, and the revenues from MMORPGs accounted for 81% of the total revenues from the online game market (iResearch.com, 2006). MMORPGs, capable of supporting hundreds or thousands of players simultaneously on the Internet, allow every player to choose a fictional character and control the character’s action. Owing to these
attributes, MMORPGs may be particularly addictive, yet may also be particularly beneficial to gamers’ social networks. First of all, the avatar of a player lives in a fantasy world in which the storyline evolves over time and players are urged to improve their positions in the hierarchy of gamers (Jansz & Martens, 2005), which make the game world quite appealing. Secondly, the stories in many MMORPGs are endless and gamers are encouraged to obtain numerous virtual treasures, weapons, and equipment, and to complete as many tasks as possible. Yee (2002) concluded that the rewards cycle in MMORPGs works like a carrot on a stick because gamers are always close to some reward, and the pursuit of the reward may lead to game addiction. Thirdly, since MMORPGs allow many gamers to play the same game at the same time, the presence and attention of other players and the interaction with other players’ avatars provide social reinforcement, which stimulates players to indulge in the game world (Charlton & Danforth, 2007). In addition, many MMORPGs encourage gamers to build persistent organizations or guilds. Guilds are formal organizations of players with a hierarchical leadership structure. An online survey conducted by Yee (2002) revealed that 79% of MMORPG players join a guild. Guilds often require commitment and responsibility from guild members, which encourages players to play more often and more regularly (Ducheneaut, Yee, Nickell, & Moore, 2006; Williams, Ducheneaut, Xiong, Zhang, Yee, & Nickell, 2006). Moreover, interdependency is built into the very heart of MMORPGs because the occupations of the avatars are designed to depend on each other, so that players can enjoy the benefits of cooperation (Taylor, 2006). For example, in Star War Galaxies (SWG), scouts hunt and harvest hides and meat from animals which they can sell to artisans who need those resources to craft basic items(Yee, 2002). All these attributes potentially induce game addiction and may also help to expand game players’ social networks.

Card games and sports games are recreation-oriented and players need only a short time to finish a round. People can play with strangers in these games, but there are no virtual communities like guilds to keep them together for a long time, so that, when a round is over, an individual and his partners probably never meet again. Thus card games and sports games are less addictive and contribute less to game players’ social networks.

Since MMORPGs stand out both as causing game addiction and as broadening gamers’ social ties, it is logical to reason that the third-person perceptions occurring to MMORPG players may be distinct from those occurring to other people. Some studies (Lee et al., 2007; Seay & Kraut, 2007; Yee, 2002) have found that a number of MMORPG players are aware that they are heavily attracted to online games, and that excessive gaming has brought much trouble to their everyday lives. Yee’s (2002) online survey reported that 48.6% of respondents (N = 3166) considered themselves addicted to MMORPGs. Lee et al.’s (2007) quantitative research found self consciousness and self regulation among addicted players, some of whom were seeking help to quit addictive games. The annual survey of iResearch.com on Chinese gamers in 2006 revealed that 29% of Chinese gamers abandoned the games because
their family & friends asked them to so (iResearch.com, 2006). Social pressure may thus remind Chinese gamers of the harmful game impact on themselves, and this will especially apply to the players of MMORPGs. Therefore, compared with other people, MMORPG players may perceive greater antisocial game effects on themselves and their third-person perceptual gap may be smaller.

Ducheneaut and Williams (2006) summarized that one-third of the players in their study used MMORPGs as a channel to strengthen and maintain existing ties; a third to a half of MMORPG players used their guilds as “third places” that generated bridging social capital; next were the handful of players who met new friends in MMORPGs and extended these in-game relationships back into real world. This observation reflects the fact that most MMORPG players do experience the social benefits of game-play. Since social desirability may reduce the strength of third-person perceptions, MMORPG players may tend to assess that they themselves are more able to take advantage of online games and improve their social networks than others are.

From the above findings and reasoning, the following hypotheses have been formulated:

H4a: Compared with nonplayers and people who play other online games, MMORPG players will perceive greater antisocial (addictive) game effects on themselves.

H4b: Compared with nonplayers and people who play other online games, MMORPG players will perceive greater prosocial game effects on themselves.

The Effect of Self-Construal on Third-Person Perceptions

It is the optimistic bias that makes people perceive that they are less susceptible to harmful media effects, but people vary in levels of optimistic bias. For instance, people in East Asian cultures (collectivistic orientation) may be less disposed to view themselves as unique from others or as smarter than others because they tend to show greater interdependent self-construal than people in Western cultures (individualistic orientation) do (Lee & Tamborini, 2005). Lee and Tamborini’s (2005) study shows that culture serves as an important component in shaping the third-person effect. For example, they found that collectivistic orientation diminished third-person perceptions for Internet pornography, and theorized that people with collectivistic cultural backgrounds are less prone to view self as different or unique from the group and thus are less likely to have biased optimism than people with individualistic culture backgrounds.

However, even within the same culture, people have different tendencies toward collectivism and individualism. Markus and Kitayama (1991) delineated two types of self in relation to the collective: one is construed independently, the other is construed interdependently. Self-construal is conceptualized as “a constellation of thoughts, feelings and actions concerning one’s relationship to others, and how the self is distinct from others” (Singelis, 1994, p. 581). People exhibiting independent self-construal are liable to view the self as separated from interpersonal contexts...
and tend to value self-promotion and uniqueness. Consequently, they may obtain self-esteem through expressing the self and validating their internal attributes. Thus, independent people are more inclined to think that they are distinct from or better than others, and as a result they will perceive that they are more invulnerable to the antisocial impact caused by online games and more responsive to the prosocial game impact. In other words, independent people may have large third-person perceptual gaps for antisocial game effects but small perceptual gaps for prosocial game effects. People exhibiting interdependent self-construal often emphasize group harmony and view the self as intertwined with the social context, therefore generating self-esteem by connecting with others and “fitting in” (Markus & Kitayama, 1991; Singelis, 1994). Thus, interdependent people may have weaker optimistic bias and will experience small perceptual gaps, no matter whether the game effect is antisocial or prosocial.

The following hypotheses have thus been developed:

H5a: Independent self-construal will have a positive impact on third-person perceptions of antisocial game effects and a negative impact on third-person perceptions of prosocial game effects.

H5b: Interdependent self-construal will have a negative impact on third-person perceptions of both antisocial and prosocial game effects.

The Effect of Internet Self-Efficacy on Third-Person Perceptions

Unlike with most traditional media, individuals differ substantially in their abilities to use the Internet effectively, and also in their self-evaluations of their Internet sophistication, because special skills and knowledge are required to use the Internet (Eastin & LaRose, 2000; Markus & Kitayama, 1991). Internet self-efficacy is conceptualized as an individual’s belief in his/her abilities to use the Internet successfully (Eastin & LaRose, 2000). Brosius and Engel (1996) noted that Internet self-efficacy may cultivate the belief that one can control the psychological outcomes of Internet use, and such perceived controllability might generate optimistic bias. Lee and Tamborini (2005) assumed that individuals with higher Internet self-efficacy would view themselves as more capable of controlling the influence of the Internet. As such, they would consider themselves more resistant to the antisocial impact of the Internet than others. However, Lee and Tamborini (2005) did not find a significant positive relationship between Internet self-efficacy and the third-person effect in their empirical study. The reason may be that the limited variance in Internet self-efficacy of their nonrandom sample of college students from the United States and South Korea suppressed the impact of Internet self-efficacy on perceptual discrepancies.

However, the effect of Internet self-efficacy may depend on people’s self-construal. Independent people with high Internet self-efficacy are doubly motivated to estimate larger negative media impact on others and relatively larger positive media impact on self. People who exhibit both high Internet self-efficacy and interdependent self-construal, even though they view themselves as capable of controlling the influence
of the Internet, may think that other people have similar abilities. Thus, they may be less likely to have such third-person perceptions, so that the influence of Internet self-efficacy on perceptual discrepancies will be reduced.

These considerations suggest the following hypotheses:

H6a: Internet self-efficacy will have a positive impact on third-person perceptions of both antisocial and prosocial game effects.

H6b: The effect of Internet self-efficacy on third-person perceptions may depend on the self-construal of the respondents. Specifically, the effects will be stronger for independent people than for interdependent people.

Method

Sample
This study was conducted through an online survey by posting an online questionnaire on the popular Chinese websites and BBSs (e.g. Baidu.com, Tianya.cn, etc.). The final sample size was 465, with 296 males and 169 females. The mean age of the sample was 25 (SD = 5.92, maximum = 54, minimum = 18), 65% of the respondents had at least an undergraduate diploma, 77% of the respondents reported that they had been using the Internet for more than 4 years, and 89% of them reported that they had played online games. Of the game players, 52.8% played MMORPGs most frequently, while 47.2% played others games, such as card games and sports games, most frequently.

Measurement
The magnitude of the perceptual bias was calculated as the difference between perceived effects of online game-play on others and on self, including perceptual discrepancy of addictive game effects and perceptual discrepancy of prosocial game effects. Respondents were asked to indicate how strongly they agreed or disagreed with the following statements:

(a) Online game-play will make me addicted.
(b) Online game-play will make my family members addicted.
(c) Online game-play will make my friends addicted.
(d) Online game-play will make strangers addicted.
(e) Online game-play will help me to make new friends.
(f) Online game-play will help my family members to make new friends.
(g) Online game-play will help my friends to make new friends.
(h) Online game-play will help strangers to make new friends.

These questions were measured by a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). The perception of game effects on others was computed as the mean of perceived effects on family, friends, and strangers.
The construct of individuals’ Internet self-efficacy was measured on the basis of the 8-item Internet Self-Efficacy Scale developed by Eastin and LaRose (2000). In order to make the questionnaire concise and retain the original meaning of the instrument, this study combined the first three items of Eastin and LaRose’s scale into one question; the other items were unchanged. Each item was measured by a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). The questions are as followed:

I feel confident in understanding terms/words relating to the Internet.
I feel confident in trouble shooting Internet problems.
I feel confident in understanding why a task will not run on the Internet.
I feel confident in using the Internet to gather data.
I feel confident in learning advanced skills within a specific Internet program.
I feel confident in turning to an online discussion group when help is needed.

Answers to these questions were summed to create a single scale of Internet Self-efficacy (M = 30.95, SD = 6.42, Cronbach’s α = .83).

The Self-Construal Scale developed by Singelis (1994) is a popular approach to measure self-construal. This instrument provides separate scores for the strength of an individual’s independent and interdependent self-construal. To test the instrument, Singelis (1994) employed two samples containing different ethnic groups consist of Japanese, Chinese, African-American, Caucasian, Hawaiian, and part-Hawaiian. However, the factor loadings of several items were not consistently high in the two samples, some of them being even lower than .30. In order to make the instrument more appropriate for Chinese respondents, in this study I have extracted 12 items which were consistently loaded high (more than .43) in both samples of Singelis’s (1994) study.

The items concerning interdependent self-construal are as followed:

I will sacrifice my self-interest for the benefit of the group I am in.
I often have the feeling that my relationships with others are more important than my own accomplishments.
It is important to me to respect decisions made by the group.
I will stay in a group in they need me, even when I am not happy with the group.
If my brother or sister fails, I feel responsible.
Even when I strongly disagree with group members, I avoid an argument.

The items concerning independent self-construal are as followed:

Speaking up during a class is not a problem for me.
I am comfortable with being singled out for praise or rewards.
Being able to take care of myself is a primary concern for me.
I prefer to be direct and forthright when dealing with people I’ve just met.
I enjoy being unique and different from others in many respects.
My personal identity independent of others, is very important to me.
Each item was scored by a 7-point Likert scale, measuring the degree of agreement with each statement, from “1” indicating “strongly disagree” to “7” indicating “strongly agree.” Answers to the questions were added to create a single measure of interdependent self-construal (M = 22.88, SD = 4.77, Cronbach’s α = .57) and a single measure of independent self-construal (M = 30.18, SD = 5.01, Cronbach’s α = .55). The reliabilities are not satisfactory, which may be caused by measurement error. Since Nunnally (1967) stated that relatively low reliability coefficients are tolerable in early stages of research on predictor tests or hypothesized measures of the construct, and that the minimally acceptable reliability for preliminary research should be in the range of .5 to .6; and since Van de Ven and Ferry’s (1980) cutoff criterion for moderately broad constructs is .55; I accepted the measurement of self-construal for this study.

Results

ANOVA for simple effect contrasts were employed to test the existence of third-person perceptions and the effects of media social desirability and social distance. The average perception of addictive game effects on self was 3.91 (SD = 1.93); the average perception of addictive game effects on others was 4.56 (SD = 1.23). The difference was significant (F(1, 464) = 56.21, p < .001), which means that, in relation to the antisocial effects of online games, third-person perceptual discrepancies existed and H1 was supported. The average perception of prosocial effects of online gameplay on self was 4.50 (SD = 1.56); the average perception of prosocial effects on others was 4.47 (SD = 1.27). The difference thus indicates nonsignificant reverse third-person perceptions (F(1, 464) = .19, p = .66). Third-person perception of antisocial game effects was significantly greater than that of prosocial game effects (F(1, 464) = 58.30, p < .001, η² = .11), implying that social desirability came into play and H2 was supported.

Table 1 illustrates the impact of social distance on third-person perceptions. Generally, concerning antisocial game effects, the perceptual discrepancies increased as the social distance became larger, whereas respondents thought that their family members, if they played, would suffer least from online game addiction. In the case of prosocial game effects, the social distance effect was mixed. Respondents thought their friends and strangers would benefit more—by broadening social networks—than they themselves would from online gaming, whereas their family members would be least likely to enjoy the benefits of game-play. Thus, H3 was partially supported.

H4a and H4b predict that, compared with nonplayers and people playing other games, MMORPG players may perceive larger game effects on themselves. The data supports the hypothesis and the results showed that different groups had different third-person perceptions of both antisocial game effects (F(2, 462) = 9.84, p < .001) and prosocial game effects (F(2, 462) = 25.85, p < .001). Specifically, compared both with people who play other games and people who never play online games, MMORPG players perceived higher addictive game effects on themselves.
Table 1  Social Distance and Third-Person Perceptions

<table>
<thead>
<tr>
<th>Perceived Antisocial Game Effects</th>
<th>Mean</th>
<th>SD</th>
<th>Mean Difference with Perceived Effects on Self</th>
</tr>
</thead>
<tbody>
<tr>
<td>On Me</td>
<td>3.91</td>
<td>1.93</td>
<td>−0.05 (n.s.)</td>
</tr>
<tr>
<td>On Family</td>
<td>3.86</td>
<td>1.68</td>
<td></td>
</tr>
<tr>
<td>On Friends</td>
<td>4.82</td>
<td>1.47</td>
<td>0.91***</td>
</tr>
<tr>
<td>On Strangers</td>
<td>5.06</td>
<td>1.47</td>
<td>1.15***</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Perceived Pro-social Game Effects</th>
<th>Mean</th>
<th>SD</th>
<th>Mean Difference with Perceived Effects on Self</th>
</tr>
</thead>
<tbody>
<tr>
<td>On Me</td>
<td>4.49</td>
<td>1.56</td>
<td></td>
</tr>
<tr>
<td>On Family</td>
<td>4.09</td>
<td>1.51</td>
<td>−0.4***</td>
</tr>
<tr>
<td>On Friends</td>
<td>4.66</td>
<td>1.39</td>
<td>0.17***</td>
</tr>
<tr>
<td>On Strangers</td>
<td>4.66</td>
<td>1.39</td>
<td>0.17***</td>
</tr>
</tbody>
</table>

*** p < .001. a.

(M = 4.42, SD = 1.90), inferring that MMORPG players have recognized that excessive gaming could make them addicted. MMORPG players also perceived the highest prosocial game impacts on themselves (M = 5.06, SD = 1.40), implying that MMORPG players considered that they were more able than others to utilize game-play to improve their social networks. An interesting outcome is that MMORPG players perceived almost identical antisocial game effects on self and on others (F(1, 225) = 1.79, p = .18), whereas they significantly perceived greater prosocial game effects on self than on others. In other words, a significant first-person effect (F(1, 225) = 23.49, p < .001) occurred to MMORPG players in the case of prosocial game effects.

To examine the main effects of social desirability, social distance, exposure to online games, self-construal, and Internet self-efficacy on third-person perceptions, univariate ANOVA was employed. Social undesirability of game effects was coded as “1” and social desirability of game effects was coded as “2”. Social distance had four categories: self, family, friends and strangers. Respondents were divided into three groups according to their different exposure to online games: MMORPG players, other players, and nonplayers. The dependent variable was third-person perceptions; social desirability, social distance and game exposure were entered as fixed factors; self-construal and Internet self-efficacy were treated as covariates; the interaction of social desirability with interdependent self-construal and the interaction of self-construal with Internet self-efficacy were also included in the model. The results of univariate ANOVA are reported in Table 2.

As shown in Table 2, consistent with the simple effect contrasts, the effects of social desirability, social distance, and game exposure were found to be significant. Informants had greater third-person perceptions of antisocial game effects than of prosocial game effects and they perceived larger game effects on friends and strangers.
Table 2 The results of univariate ANOVA

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Beta</th>
<th>SE</th>
<th>t</th>
<th>Partial η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>n.s.</td>
<td>.06</td>
<td>−1.89</td>
<td>.001</td>
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<tr>
<td>[Antisocial Game Effects]</td>
<td>.33***</td>
<td>.03</td>
<td>10.63</td>
<td>.030</td>
</tr>
<tr>
<td>[Pro-social Game Effects]</td>
<td>−.40***</td>
<td>.06</td>
<td>−6.66</td>
<td>.012</td>
</tr>
<tr>
<td>[MMORPG Players]</td>
<td>n.s.</td>
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<td>−4.6</td>
<td>.0001</td>
</tr>
<tr>
<td>[Other Players]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>[Social Distance=Family]</td>
<td>−.14**</td>
<td>.04</td>
<td>−3.26</td>
<td>.003</td>
</tr>
<tr>
<td>[Social Distance=Friends]</td>
<td>.34***</td>
<td>.04</td>
<td>7.85</td>
<td>.016</td>
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<tr>
<td>[Social Distance=Strangers]</td>
<td>.42***</td>
<td>.04</td>
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<td>.02</td>
<td>2.06</td>
</tr>
<tr>
<td>Interdependency</td>
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<td>.02</td>
<td>−2.13</td>
<td>.001</td>
</tr>
<tr>
<td>Independency*Antisocial Game Effects</td>
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<td>.001</td>
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<tr>
<td>Independency * Internet Efficacy</td>
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<td>.01</td>
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<td>.002</td>
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<tr>
<td>Interdependency * Internet Efficacy</td>
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<td>.02</td>
<td>−.98</td>
<td>.0003</td>
</tr>
</tbody>
</table>

Note. R² = .12, Adjusted R² = .12, *** p < .001, ** p < .005, * p < .05.

than on self. However, they perceived smaller game effects on family than on self. Exposure to online games also had significant impact on third-person perceptions. Compared with people who never played online games and people who played cards or sports games, MMORPG players perceived larger game effects on self than on others. Interdependent self-construal was found to have a significant negative impact on third-person perceptions for both antisocial game effects and prosocial game effects, and H5a was supported. The interaction of independent self-construal with prosocial game effects was significant, but the interaction of independent self-construal with antisocial game effects was not significant (Beta = .042, p = .065), H5b was partially supported. The effect of Internet self-efficacy was significantly positive, and H6a was supported. The interaction of Internet self-efficacy and independent self-construal was significantly positive, meaning that the effect of Internet self-efficacy increased as people’s tendency toward independent self-construal increased. However, the interaction of Internet self-efficacy and interdependent self-construal was not significant. Thus H6b was partially supported.

Discussion

The current study applies the theory of the third-person effect to examine Chinese people’s perceptions of game effects and detects some significant moderators and predictors of the third-person effect. This study is not merely to test a theory in reference to Chinese culture; rather, the purpose of the study is to advance the theory of the third-person effect by exploring factors that may shape the direction and size of TPE. The theoretical constructs are not confined to China because all the hypotheses were developed based on empirical studies of non-Chinese societies, especially on
those of individualistic cultures. Thus, the findings are likely to be generalizable to other societies.

This study generally confirms prior research that has shown media social desirability and social distance as significant moderators of third-person perceptions. When respondents were asked to evaluate prosocial game effects, the perceptual bias was reversed, but it was not significantly different from zero. Put in a more accurate way, the third-person perceptions are actually perceptual discrepancies regarding antisocial media impact. The observation that third-person perceptions disappeared for pro-social media content may be explained by the ego-defensive function that people tend to deny personal persuadability (Duck et al., 1995). People may be reluctant to admit to being personally influenced by mass media, rather, they may contribute the change to internal capability other than outside influence (David et al., 2004; Duck et al., 1995; Gunther & Mundy, 1993). Thereby, the ego-defensive motivation will compete with the ego-enhancement motivation and yields an inherent tension between self-preservation from external media influences and the desire to view oneself as better than others, and consequently reduces the third-person perceptions (David et al., 2004).

Furthermore, concerning antisocial game effects, the perceptual discrepancies increased as psychological distance increased. However, the relationship between social distance and third-person perceptions was not linear, as family members were perceived to be most resistant to media effects. This could be elucidated by the fact that the majority of the respondents were young people around 25. The One-Child Policy (or Birth-Control Policy) of China since 1978 makes most of them the only children in their families, so that their conceptions of “family members” may refer to their parents. Generally speaking, young people tend to think that their parents are more knowledgeable and sophisticated than themselves, and thus are less susceptible to media influence. Another explanation may be based on Eveland et al.’s (1999) claim that third-person perceptions may be driven by the perceived exposure of the comparison others to the media. Some empirical studies (Eveland et al., 1999; McLeod et al., 2001; McLeod, Eveland, & Nathanson, 1997) have found that perceived exposure of a group to a message was a better predictor of perceived effects than perceived similarity to the group. Game companies in China have been suffering from criticism, and even accusations, from parents, teachers, media, and academia. In many Chinese parents’ minds, game companies try every possible way to keep the players in the game world, consequently making young people heavily dependent on the games and causing game addiction among young gamers (Cheng, 2007; Zhang, 2007; Zhou & Li, 2006; Zhou & Zhang, 2005). Thus young people are prone to think that, since their parents are least likely to play online games, they are least likely to be influenced by online games.

This study did not detect a social distance effect in the context of prosocial game effects, since the perceived game effects on friends and strangers were identical. As Perloff (1993) concluded, there was no clear linear relationship between social distance and the third-person perceptions; similarly, Sun et al.’s (2008) meta-analysis
showed that evidence for the social distance corollary remains deficient. The problem may lie with the vague definition of the social distance, which may be understood as similarity, familiarity or identification (Perloff, 1993). It is possible that the “social distance” between self, family, friends, and strangers in the study may not match the concept of “social distance” in the minds of the participants.

Sun et al. (2008) suggested that third-person effect theory can be advanced by identifying the characteristics of media message, since the extant literature offers no theoretical account of the characteristics of media messages and how they influence individuals’ estimates of media effects. For the first time, this study has specified the attributes of different online games, in order to investigate whether differential exposure to online games may lead to different social psychological consequences. The results show that, compared with other people, MMORPG players are more prone to think that they are able to benefit from game-play, and at the same time to admit that they are affected by game addiction. Significant first-person perceptions, or reverse third-person perceptions, occurred to MMORPG players for prosocial game effects; whereas nonsignificant third-person effect occurred when game effects were antisocial; reflecting that the self-categorization mechanism may come into play, as people always prefer to internalize positive in-group prototypes and disown negative in-group prototypes (Reid, Byrne, Brundidge, Shoham, & Marlow, 2007). Since MMORPGs elicit both antisocial and prosocial effects, MMORPG players are likely to acknowledge benefit from gaming as their in-group prototype but disown addiction to games as their in-group prototype.

The perceived game effects discovered by the current study are in the same line as the actual game effects discovered by other empirical studies. That is, although online games indeed cause people to be dependent on virtual environments (Chen & Park, 2005; Golub & Lingley, 2008; Lee et al., 2007), some of them do help players to improve their social networks by allowing them to play with strangers from various backgrounds (Steinkuehler & Williams, 2006; Taylor, 2006; Williams et al., 2006). This fact may shed light on why so many players are still deeply involved in game-play even though they realize that they are addicted to the games. The Annual Report of Chinese Online Games (iResearch.com, 2006) shows us some significant evidence: making friends is the most important reason for playing online games (59.6%); the favorite thing that players like to do in the games is to make friends (19.7%). All these findings infer that many Chinese young people lack meaningful social lives in the real world, and that is why they pursue them in the virtual game world. Reminding addicted players of this point may help them to escape from game addiction and lead healthy social lives in the real world.

This study furthers prior research (Lee & Tamborini, 2005) on the relationship between culture and TPE and brings self-construal into the picture of TPE research. The study finds that even in the same culture, TPE does not occur equally to all people. Interdependent people perceive that they are similar to others, thus their perceptual discrepancies are less distinct. Although it was hypothesized that independent people might have greater third-person perceptions for antisocial game effects but smaller
third-person perceptions for prosocial game effects, the data only supports the later part of the hypothesis. The reason may be the low reliability of the measurement of self-construal. As people from collectivistic cultures are more likely to be influenced by group-oriented cultural values and engage in interdependent self-construal, and as people from individualistic cultures are more likely to be influenced by individually-focused cultural values and engage in independent self-construal (Hardin, Leong, & Bhagwat, 2004; Triandis, 2001), this finding could be generalized to indicate that collectivistic people may perceive smaller TPE than individualistic people.

This study has shown that Internet self-efficacy exerts a significant positive impact on third-person perceptions. Internet self-efficacy may be viewed as an antecedent for third-person perceptions of the effects of Internet usage. It was hypothesized that the effect of Internet self-efficacy may be moderated by people’s self-construal, however, the data only supports the positive interaction of independent self-construal with Internet self-efficacy. The nonsignificant moderating effect of interdependency on the relation between Internet self-efficacy and third-person perceptions may also be due to the low reliability of the measurement of self-construal.

Beyond the low reliability of measuring self-construal and the failure to show full support for self-construal as a moderator for the effects of Internet self-efficacy on third-person perceptions, this study is limited by the self-selected nature of the sample. Motivation to respond or self-select is likely due partly to the ease of response and partly to a desire to give voice (Walsh, Kiesler, Sproull, & Hesse, 1992). This study may thus have attracted those interested in discussing the effects of online games. Since the survey included questions about both antisocial game effects and prosocial game effects, those who like or dislike online games would have had equal opportunities to express their true opinions. Thus, the likelihood of large bias would be reduced and the results of social desirability effect and social distance effect discovered by this study may hold. Nevertheless, the generalization of the results is limited by the self-selected nature of the sample of Internet users which, in addition to other factors, obviously ignores people who do not use the Internet or had not visited the websites. Future study of more representative samples to strengthen the findings of this study is called for.

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**References**


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