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Understanding Online Game Cheating: Unpacking the Ethical Dimension

Yuehua Wu[a] and Vivian Hsueh Hua Chen[b]

[a]School of Media and Communication, Shanghai Jiao Tong University, Shanghai, China; [b]Wee Kim Wee School of Communication and Information, Nanyang Technological University, Singapore, Singapore

ABSTRACT

Using an online survey approach, this study examines the ethical dimensions and factors operating behind the game cheating behavior. Although the data indicated that young gamers were overall critical of cheating behavior in online games, cheating was found to be a common practice in online gaming community. It is found that gamers tended to dismiss the cheating action as morally insignificant due to peer influence and the play nature of online gaming. With regard to the ethical antecedents of cheating decisions, our results revealed that the personal moral philosophy of idealism had both direct and indirect influence on game cheating intention and behavior (partial mediation), meanwhile, the personal moral philosophy of relativism had only significant indirect influence on game cheating intention (full mediation) and cheating behavior (distal mediation).

1. Introduction

The international games market amounted to $99.6 billion in the first quarter of 2016 (up 8.5% compared to 2015) and is expected to reach $118.6 billion by 2019 with a compound annual growth rate of 6.6% (Newzoo, 2016b). Globally, 84% of the games market is generated through digital channels (Newzoo, 2016a). The growing popularity of gaming activity, especially networked computer games, has called forth a side-phenomenon – game cheating. The practice of cheating has been common ever since the invention of video games. Yet the geographic separation and anonymity afforded by online games, the design of online game architecture, and the openness and networked nature of the Internet greatly increase the possibility and severity of game cheating behaviors (Germain, 2007; Parker, 2007).

Although game cheating is frowned upon by many gamers (Blackburn, Kourtellis, Skvoretz, Ripeanu, & Iamnitchi, 2014) and discouraged by the game industry as both a monetary and a public relations problem, anecdotal evidence showed that cheating was ubiquitous in online gaming communities (Consalvo, 2007). To some degree it is deemed as the norm of online gaming (Dumitrica, 2011). In offline society, the behavior of cheating is largely met with disdain and viewed as highly unethical. Cheating in online games, however, is often overlooked and thought to be of little relevance to "real" ethical questions (Kimppa & Bissett, 2005). Consequently, although we start to know how and why players cheat in online games (Consalvo, 2007; Fields & Kafai, 2010; Yan & Randell, 2009), fairly little attention has been given to the ethical dimensions of cheating practice in online games.

Cheating in networked multiplayer games, however, poses moral questions since it clearly ruins the "fairness" of gaming and affects the interests of other parties, including peer game players and game companies (Kimppa & Bissett, 2005; Yan & Randell, 2009). Meanwhile, gamification, which attempts to import gameplay mechanics and game thinking to nongame contexts, has become a hot topic in various domains such as science, industry, and education (Landers & Callan, 2011; Lin & Zhu, 2011; Werbach & Hunter, 2012). This trend further underscores the importance of understanding gaming and the deviant behaviors associated with it. As gamification becomes increasingly ubiquitous, the threat of game cheating will become more prominent, and its effects more profound (Blackburn et al., 2014).

Given the widespread practice of cheating among gamers and its potential technical, legal, and social challenges, understanding the ethical dimensions of online game cheating is significant not only for evaluating and reasoning about anti-cheating actions and policies in gaming environments but also for studying dishonest behavior and its ethical implications in the new media environment as well as the current society at large. There is, however, a lack of thorough investigation of, and even less empirical evidence on, the morals involved in online gaming. Hence, this study aims to examine the ethical dynamics of the cheating behavior in online multiplayer games, more specifically, the ethical dimensions and factors operating behind the game cheating behavior and the mindset of those who are involved in this activity.

2. Game cheating and the ethics

With regard to the ethics of games, Zagal (2009) put forward four perspectives: the ethic value of game as cultural artifact, the ethics of game production and creation, the ethics of game play activity, and games as ethical frameworks (ethics of the ideological

CONTACT Yuehua Wu yhwu22@sjtu.edu.cn School of Media and Communication, Shanghai Jiao Tong University, 800 Dongchuan Road, Shanghai 200240, China.

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framework embedded in the game). For the purposes of this study, we focus on the third perspective—the ethics surrounding the activity of game play, more specifically the ethical and moral dimensions of the game cheating activity.

Cheating is perceived by game developers, publishers, and many players "to be a threat to the social experience and economic viability of a game" (De Paoli & Kerr, 2012, p. 74). While cheating in single-player games does not involve other players and thus has little ethical implication (at most self-deception), online multiplayer games are "deeply social" virtual worlds (De Paoli & Kerr, 2012; Taylor, 2009) where millions of players interact through their avatars. Cheating in networked multiplayer games diminishes the achievements of fair players and ruins the "fairness" of gaming (Duh & Chen, 2009; Yan & Randell, 2009). The interests of game companies are also undermined in that they might lose existing game users and fail to attract new users because of rampant game cheatings and consequent bad game reputation (Blackburn et al., 2014; Duh & Chen, 2009; Zetterström, 2005). Destroying other peoples' work and the attached value is immoral, and thus cheating in online multiplayer games should be treated as a moral offence (Kimppa & Bissett, 2005). Dunn (2012) emphasized that, because of the impossibility of closed virtual worlds, actions taken by computer game players cannot be disregarded from a moral perspective simply because they occur within virtual worlds. It would be interesting to explore, from an ethical and moral perspective, whether and how people perceive and reason differently about cheating actions in the virtual world.

Despite increasing research attention to game cheating, published literature on this topic is scarce. The extant literature on game cheating primarily focus on cheating methods or classifications (Fields & Kafai, 2010; Webb & Soh, 2007; Yan & Randell, 2009), perceptions or motivations of game cheating (Consalvo, 2007; Vázquez & Consalvo, 2015), and ways to combat cheating (Botvich et al., 2010; Hu & Zambetta, 2008; Zetterström, 2005). In a large body of video game research, its ethical/moral dimensions and implications are often studied in the context of violent games (e.g., Gollwitzer & Melzer, 2012; Hartmann & Vorderer, 2010; Schulzke, 2010). To the best of the authors' knowledge, there is a lack of empirical study examining the ethical/moral dimensions of cheating behavior in online multiplayer games.

3. Literature review, research questions, and hypotheses

3.1. The present state of game cheating activity

On the Internet, individuals can communicate without exposing their real-life identities. While anonymity brings benefits to people in certain contexts, the "veil" of anonymity may free individuals to behave in undesirable or even harmful ways (Kiesler, Siegel, & McGuire, 1984; Sproull & Kiesler, 1986). Researchers have argued that the anonymity and immersion features of computer-mediated communication produce the classic deindividuating conditions of reduced self-awareness and disinhibition (deindividuation theory), or accentuate online group memberships and consequently the influence of online group norms (SIDE theory) (Postmes, Spears, & Lea, 1998; Reicher, Spears, & Postmes, 1995), which might account for online anti-normative behaviors such as "flaming" and "grief gaming" (Chen, Duh, & Ng, 2009; Kiesler et al., 1984; Reicher et al., 1995; Thompsen, 1996). The anonymity and immersion features might also be an important cause of the antisocial behavior of in-game cheating.

Despite the general observation that cheating is prevalent in online games, players in all cultures resent the unethical behavior that breaks the rules of the game (Huizinga, 1967), as indicated by "anecdotal evidence, vitriolic comments against cheaters on gaming blogs, and the resources invested by game developers to contain and punish cheating" (Blackburn et al., 2014, p. 2). To examine the actual status of game cheating activity, we tend to explore answers to the following questions:

RQ1. What is the present state of cheating activity among online computer gamers in terms of:

RQ1a. past game cheating activity.

RQ1b. perceived game cheating activity conducted by people around.

RQ1c. future intention to cheat in online games.

3.2. Ethical reflection: Is game cheating acceptable?

While all tools affect people's thoughts, intellectual technologies such as books and the Internet "have the greatest and most lasting power over . . . how we think" (Carr, 2010, p. 45). Flores and James (2012) posit that some unique qualities of digital technologies "differentiate them from prior media and accordingly may have unanticipated moral and ethical implications" (p. 836). Despite rampant speculation, the effects of new media on moral and ethical dispositions have been relatively little studied (Flores & James, 2012). The extant research on this aspect suggests mixed effects. For instance, a 2001 study of how teenagers react to moral dilemmas suggested that context (offline versus computer-based) affected moral reasoning and older children conveyed more ambivalence about whether computer-based scenarios were moral in nature (Burnam & Kafai, 2002). Another study of youth in high school and college found greater acceptance of unethical conduct with digital technologies than in offline contexts (Poole, 2007). These studies suggest a need for further understanding of how people, especially young people (given the fact that young people is at the early stages of moral development), think about online choices and the circumstances where moral and ethical thinking is present or absent.

With regard to computer gaming, studies suggest that some people perceive games as "magic circles" where morality and ethics are suspended (Consalvo, 2005b, 2009). Simone, Verbruggen, Kuo, and Mutlu (2012) found that in video games cheating does not elicit strong, negative emotions by gamers compared to non-virtual cheating; rather, computer cheating inspired some greater involvement within gamers. Consalvo (2007, 2009) found that game players did not agree on how to define the term "cheating" nor did they agree on

when it was acceptable or unacceptable to cheat in computer games. Hamlen and Gage (2013) in their study of students' conceptions of cheating in video games concluded that gamers may develop their own moral codes about when it is ethical or unethical to use particular strategies, and these differ from person to person. Given the above observations in the literature, we examine the following research question:

RQ2. How do online gamers ethically reflect on and make sense of the game cheating action? Specifically,

RQ2a. What is gamers' overall attitude toward online game cheating?

To delineate the specific psychological process of the ethical dimension of game cheating, we use open-ended question to explore the scenarios in which gamers think game cheating is acceptable.

RQ2b. In which situations do gamers consider game cheating (un)acceptable?

3.3. A mediated model of game cheating: moral philosophy and the perceived magnitude of consequence

The pedagogy literature abounds with insightful exploration of cheating intentions and behaviors (Sierra & Hyman, 2008). Meanwhile, the ethics literature widely examines how ethical reasoning works and the factors impacting ethical intention and behaviors (e.g., Frey, 2000; Singhapakdi, 2004; Valentine & Bateman, 2011). Building on these insights, to explore the ethical decision-making process in online gaming context, a model with personal ethical ideology and the perceived moral intensity (PMI) of consequence magnitude as antecedents of game cheating behavior is posited and tested (see Figure 1).

Specifically, the ethical ideology of idealism and relativism, and the perceived magnitude of cheating consequences are posited to antecede gamers' cheating behavior. Although a more comprehensive model – for example, one that includes environmental factors such as peer influence – might explain additional variation in gamers' cheating behavior, the current study was meant to examine and test the ethical dimension and its working process, particularly the ethical antecedents, of game cheating activities. Structural equation modeling (SEM) was adopted to investigate the hypothesized relationships and to assess the fitness of the model. The main constructs are now discussed.

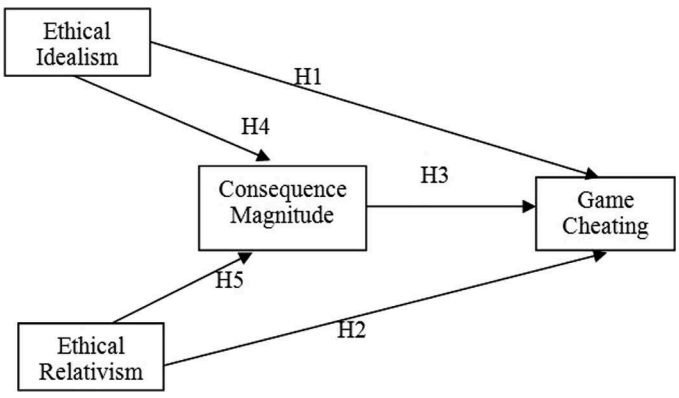

Figure 1. Conceptual mediation model.

3.3.1. Game cheating

While cheating can be generally understood as breaking the rules (Schwieren & Weichselbaumer, 2010), rule-breaking in games cannot always be easily defined. What constitutes cheating in games is often a matter of debate involving multiple actors and different technologies (Botvich et al., 2010). While the existing game cheating literature generally admits the difficulty of finding a standardized definition for game cheating (Duh & Chen, 2009; Zetterström, 2005) or stresses the importance of understanding the many definitions of cheating that players offer (Consalvo, 2007, 2009), Yan and Randell (2009) made an effort to define this term as follows:

> Any behavior that a player uses to gain an advantage over his peer players or achieve a target in an online game is cheating if, according to the game rules or at the discretion of the game operator (that is, the game service provider, who is not necessarily the developer of the game), the advantage or the target is one that the player is not supposed to have achieved. (p. 38)

To complement this definition, Yan and Randell developed a comprehensive 15-category taxonomy of game cheating practices. The construct of game cheating in this study measured these common forms of cheating practices that gamers actually conduct during their gaming activities. Additionally, as examined in many previous studies, we also assessed cheating intention as dependent variable.

3.3.2. Personal moral philosophy

According to Forsyth (1980), there are two dimensions of personal moral philosophy, *idealism* and *relativism*, which provide personal standards or guidelines to judge acts, intentions, and consequences when faced with ethical decision situations (Ferrell, Gresham, & Fraedrich, 1989; Forsyth, 1980). The first dimension, *idealism*, is the degree to which an individual adheres to universal moral rules when making moral judgments. For more idealistic people, avoiding harm to others is always possible and negative consequences to other people can and always should be avoided (Forsyth, 1980, 1992). The second dimension, *relativism*, refers to the degree to which an individual rejects universal moral rules when making ethical judgments. For highly relativistic individuals, ethical judgments should vary according to the situation and people involved (Forsyth, 1980, 1992). They assume that "harm will sometimes be necessary to produce the greatest good for the greatest number" (Forsyth, 1992, p. 462). Idealism and relativism are independent constructs and individuals can be high or low in both dimensions (Forsyth, 1980).

Research in business ethics and academic contexts has demonstrated that personal moral philosophies are important factors underlying ethical judgment and behavior (e.g., Barnett, Bass, & Brown, 1996; Sierra & Hyman, 2008; Singhapakdi, 2004; Valentine & Bateman, 2011). In general they reported that more idealistic people tended to exhibit higher honesty and integrity (lower intentions to conduct deviant behavior) while relativistic people tended to exhibit lower honesty and integrity (higher

intentions to conduct deviant behavior). For instance, Sierra and Hyman (2008) found that in academic context relativists tend to place less value on harmful outcomes (the opposite for idealists) when facing an academic cheating decision. A study of workplace deviant behavior by Henle, Giacalone, and Jurkiewicz (2005) revealed that highly idealistic people are less likely to engage in actions that are considered to be deviant.

Although many scholars have studied personal moral philosophy as determinants of ethical decisions in business and academic contexts, such research endeavor is yet to be extended to the new media environment. Despite research on certain new media deviant behaviors such as illegal downloading of music (e.g., Lysonski & Durvasula, 2008), few scholars have empirically examined the role of personal moral philosophy on unethical decisions in the online gaming context. In accordance with the conceptual and empirical evidence, we assume that the ethical decision of a gamer is a function of his or her personal moral philosophy. Specifically, idealists may avoid cheating because they believe such behavior is universally unacceptable; relativistic gamers may seek personal gains rather than the immorality of cheating and ignore the negative effects this might bring to other parties. While most relevant empirical studies only examined hypothetical cheating choices, in this study we assessed both real cheating behavior and cheating intention as the dependent variable of cheating decisions.

H1. A more idealistic gamer will be less likely to cheat in games.

H2: A more relativistic will be more likely to cheat in games.

3.3.3. Magnitude of consequence (MC, a key dimension of PMI)

The moral intensity of a situation affects ethical judgment by capturing "the extent of issue-related moral imperative in a situation"(Jones, 1991, p. 372) and hence influences individuals' resolution of an ethical dilemma. Evidence from empirical studies suggests that moral intensity directly affects ethical decision-making (e.g., Barnett & Valentine, 2004; Kish-Gephart, Harrison, & Treviño, 2010; Valentine & Hollingworth, 2012).

Studies unbundling the dimensions of moral intensity have generally observed that different dimensions influence ethical reasoning in different ways (e.g., Barnett & Valentine, 2004; Carlson, Kacmar, & Wadsworth, 2002; Morris & McDonald, 1995). The magnitude of consequences (MCs), as the sum of benefits or harms to parties of a moral or immoral action (Jones, 1991; Sierra & Hyman, 2008), is regarded as one of the most important moral intensity dimensions. This dimension has been consistently found to be a significant predictor of morality judgments and intentions (Barnett & Valentine, 2004; Frey, 2000; Morris & McDonald, 1995; Weber, 1990). For instance, Barnett and Valentine (2004) found that MC was one of the two components of moral intensity that were consistently related to ethical issue recognition and ethical judgments, and yet the only dimension that was significantly related to the ethical behavioral intention measure. Weber's (1996) study was designed as an explicit test of this particular dimension of moral intensity and it was found to be significant. Morris and McDonald (1995) proved that the perceived magnitude of benefits was a significant predictor of moral judgment, and suggested conducting more research to substantiate its importance in the making of moral judgments. The particular dimension of moral intensity examined in this study is the magnitude of benefits. Presumably gamers should be more inclined to cheat when perceiving more benefits and less harm.

H3. The more benefits an individual perceives from game cheating behaviors, the more often (s)he cheats in online games.

3.3.4. Interplay of personal moral philosophy and magnitude of consequence

Although scholars have studied personal moral philosophy and moral intensity as determinants of ethical decisions in business and academic contexts, fewer scholars have tested the interaction of these two variables. The extant literature on the specific role and working mechanism of the two factors in ethical decision-making yielded equivocal answers (Singhapakdi, Vitell, & Franke, 1999). Some models showed personal moral philosophy as operating through perceptions of the ethical situation such as perceived consequences, with only indirect influences on intentions and behavior (e.g., Hunt & Vitell, 1993, 2006). Other studies indicated that personal moral philosophy has direct as well as indirect influences on intentions and behaviors (e.g., Ferrell et al., 1989; Sierra & Hyman, 2008). A study by Sierra and Hyman (2008) found that the MCs mediated the relationship between personal moral philosophy and students' willingness to cheat in academic context. In the current study, we aim to investigate whether a person's prior ethical norms of idealism and relativism operate on unethical gaming behavior/intention directly or through the intervening variable (mediator) of MC.

Although idealists are not intrinsically "more ethical" than relativists, idealism generally increased perceptions of moral intensity, and relativism lowered them (Forsyth, 1980, 1992). Previous studies showed that individuals who score high in idealism are more likely to identify ethical problems (Bowes-Sperry & Powell, 1999; O'Leary-Kelly, Bowes-Sperry, Bates, & Lean, 2009) and perceive greater moral intensity (Singhapakdi et al., 1999). Specifically, more idealistic gamers may deem game cheating a high-moral-intensity situation by perceiving the MCs to others is severe. In other words, they perceive more harm for others and less benefits for self from cheating, and consequently may be unwilling to cheat.The opposite is true with relativistic gamers. Hence, we present the following hypotheses:

H4. The more idealistic a gamer is, the less benefits (s)he perceives from game cheating.

H5. The more relativistic a gamer is, the more benefits (s)he perceives from game cheating.

4. Methodology

4.1. Procedure and participants

The data for this study were collected as part of a larger survey study of online multiplayer gamers. Before the main study, a

pilot study was conducted with a convenience sample of 63 online gamers to test the reliability and validity of the instruments. Following the pilot test of the survey instruments and necessary modification, an invitation e-mail with the web link to the survey was distributed to students at a large public university in Singapore via the school e-mail system. Meanwhile, the web link of the survey was also posted on some popular gaming websites and forums in Singapore and China.[1] At the beginning of the survey, a screening question "Have you ever played online multiplayer games?"' was used to identify valid respondents. Respondents choosing "no" to the question were excluded from the survey. In order to maximize the response rate, a lucky draw of five US$50 gift cards was offered. In the present study, we limited our statistical tests of the research questions and hypotheses to the subsample of Chinese students (the majority of respondents). After data cleaning (dropping all cases with missing values), a total number of 1374 valid responses were kept for analyses.

4.2. Measures

In order to be effective, the instruments must have both reliability and validity, which were first tested in a pilot study. A reliability coefficient (Cronbach's alpha) of .70 or higher is deemed necessary for a scale measure to be reliable (Wallen & Fraenkel, 2001). Construct validity was tested using factor analysis (principal axis factoring followed by a varimax rotation) to determine if given items loaded on the intended construct. Necessary modifications were made (a few items were dropped) before the instruments were utilized in the main study. Results from the main study data revealed that all the scale measures were reliable and unidimensional (all items significantly loaded on one single factor with loadings greater than 0.6) (Comrey & Lee, 2013; Salkind, 2010) (see Appendix for factor loadings), which suggest good *convergent validity*. As shown in Table 1, the square root of the AVE (average variance extracted) for each construct was greater than the correlation of this construct to all other constructs, which exhibits good *discriminant validity* (Fornell & Larcker, 1981). These constructs were operationalized as follows.

4.2.1. Game cheating

The main aim of this study was to investigate the ethical dimensions and antecedents of the game cheating behavior. To achieve this aim, two outcomes – past cheating behavior and future cheating intention– were employed as dependent variables.

Table 1. Correlations of latent variables (diagonal SQRT of AVE).

Variable	1	2	3	4	5	6
1. Past cheating behavior	.72					
2. Ethical idealism	−.17**	.77				
3. Ethical relativism	.01	.15**	.69			
4. Magnitude of benefits	.36**	−.08**	.17**	.77		
5. Cheating attitude	−.29**	.30**	−.00	−.22**	.85	
6. Peer cheating	.37**	−.06*	.10**	.40**	−.12**	.80

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

The game-cheating behavior construct was measured by nine items ($\alpha = .89$). Participants were asked to report on a 5-point Likert scale (never = 1, always = 5) the frequency they did nine categories of things when playing online games. Example categories include "using computer programs to compete with human opponents or to automatically level up (bots)", and "using tricks to obtain or duplicate virtual assets".The nine types of cheating behaviors were adapted from the game cheating taxonomy developed by Yan and Randell (2009). Mean scores of the nine items were obtained to represent respondents' overall game cheating frequency.

The variable of game cheating intention was measured by one single item. Respondents were asked to answer on a 5-point Likert scale (not at all likely = 1, definitely = 5) how likely they intend to use game cheats or other tricks (as indicated in the 9-category cheating behavior scale) in online multiplayer games in the future.

4.2.2. Personal moral philosphilosophy and pmiophy: idealism and relativism

The original ethics position questionnaire (EPQ) developed by Forsyth (1980) consists of two 10-item scales to measure idealism and relativism. The present study used a more parsimonious version of the EPQ scales, as adapted by Fernando and his colleagues (Fernando & Chowdhury, 2010; Fernando, Dharmage, & Almeida, 2008) and Karande, Rao, and Singhapakdi (2002). The shortened scales used eight items to measure idealism ($\alpha = .90$) and seven items to measure relativism ($\alpha = .82$). A 5-point Likert scale was used (strongly disagree = 1, strongly agree = 5) to measure agreement with each item. Mean scores were computed out of the two scales to indicate the levels of idealism and relativism for each respondent.

4.2.3. PMI: the MC

In the present study, the MCs is represented by the magnitude of benefits (Morris & McDonald, 1995), which was measured by six items ($\alpha = .86$). These items were created with reference to the perceived benefits of game cheating concluded by Consalvo (2005a, 2007) from her qualitative interviews of videogame players. Respondents were asked to rate the perceived cheating benefits on a 5-point Likert scale (strongly disagree = 1, strongly agree = 5). Sample items are, "It could help me move forward when I get stuck", and "I could gain monetary benefits from leveling up faster or from acquiring valuable items by doing that."

4.2.4. Attitude toward game cheating

The cheating attitude measure contained three items, which were partially adapted from a classroom cheating attitude scale by Anderman, Griesinger, and Westerfield (1998). Respondents rated the extent to which they agree or disagree on a 5-point scale (1 = strongly disagree, 5 = strongly agree) with the statements on the severity of cheating in games as well their beliefs about whether or not it is appropriate and fair to cheat in games. The scale had a reliability of $\alpha = .80$.

[1]A Chinese version was posted on gaming forums targeted at gamers in China.To ensure the functional and conceptual equivalence of the survey questions in both languages, the Chinese version was back translated to English by a second translator to discover any inconsistency and pilot-tested.

4.2.5. Game Cheating by Others (Peer Cheating)

To examine how gamers perceived game cheating activity conducted by people around, respondents were asked to report on a 5-point scale (1 = none, 5 = most) how many people as far as they knew had engaged in cheating in online games. The scale (α = .82) comprised items on four groups of peers: all game players on the Internet, all the gaming opponents an individual ever played with, all acquaintances, and all the significant others in respondents' real life.

5. Results

5.1. Descriptive statistics

SPSS 23.0 (IBM Corp., Armonk, NY, USA) was used to run descriptive statistics on the data. The sample had more male students (65%) than female students (35%). Participants aged from 16 to 37 years, with the mean age of 22.6 (*SD* = 2.34) years. Most (94%) of the respondents lived in Singapore. Regarding the highest level of education, 24% of the respondents had or were pursuing a 2-year college or diploma education, 63% had or were pursuing a bachelor's degree, and 12% had or were pursuing a postgraduate degree.

A majority (95.5%) of the gamers reported computer as the most frequent online game platform, of which 70.6% chose stand-alone game programs and 25% chose social networking sites. The rest 4.5% played online games mostly on mobile devices. With regard to gaming frequency, 48% of the respondents were comparatively heavy gamers (17% of the subjects played online games every day and 31% played several times per week), whereas 52% of the respondents were lighter gamers who played online games about once a week or even less frequently.

Table 1 presents the bivariate correlations between the main variables. It was found that all the key constructs were significantly correlated with each other except the relationships between ethical relativism and the variables of past cheating behavior and cheating attitude respectively.

5.2. The present state of game cheating activity (RQ1)

Out of the scale ranging from 1 (never, not at all likely) to 5 (always, definitely), the mean score of the reported game cheating behavior (*M* = 1.55, *SD* = .64) was fairly low and that of future cheating intention (*M* = 2.23, *SD* = .90) was comparatively higher. Nevertheless, only around 23% of the respondents reported never cheating in online games with the techniques specified in the questionnaire. This means the majority (77%) of gamers cheated at least occasionally, which is consistent with the general observation that cheating is prevalent in online games. This answered the research question of the present state in terms of past game cheating activity (*RQ1a*) and future cheating intention (*RQ1c*) in online games.

To answer *RQ1b*, we examined the mean score of the scale of perceived game cheating behavior by peers (*M* = 2.69, *SD* = .79), which revealed a considerably higher score than that of the reported own cheating behavior (*M* = 1.55, *SD* = .64). This indicated that gamers normally viewed cheating as a common practice in online gaming community, which could be one reason why they themselves followed suit.

5.3. Attitudes toward game cheating (RQ2)

Despite the prevalence of game cheating, the data indicated that overall the respondents were inclined to be critical of the cheating behavior in online games (*M* = 3.62, *SD* = .86, out of the range of 1–5, the higher the number, the more negative attitude toward cheating) (*RQ2a*). This demonstrates an interesting inconsistency in gamers' emotions (ethical judgment) and behavior: although the game cheating action itself elicits negative emotion in most gamers, the majority of gamers do not act against it.

Using open-ended question, we further explored the scenarios gamers consider game cheating acceptable (*RQ2b*). NVivo 10 (QSR International, Melbourne, Australia) was used to run a brief content analysis of the answers. Of the responses, one most notable theme is that, for many gamers, cheating was acceptable if/when "everyone", "others", or your "opponent(s)" was cheating (around 300 counts). For example, one respondent wrote cheating was acceptable "when the game is fill(ed) with hackers and everyone is cheating". Another answered "when everyone does it and game authorities don't care whether you do so then it becomes the norm". There was even answer saying "when everyone is cheating, it feels stupid if I'm the only one not cheating." This clearly demonstrated the influence of peers and of the gaming environment. Another theme of acceptable scenarios was "for fun". Around 100 respondents explicitly used the word "fun" for cheating-okay reason, such as "When the games are just an outlet to have fun and nothing serious" and "it's just for fun, not a real game". Additional reported cheating-okay scenarios included the following: when trying to level up yet getting stuck (around 250 counts), when gaming with friends, or if causing no harm to others. Some other students, however, emphasized that gaming was in no situation acceptable since it is "not fair" (around 20 counts) or simply saying "never okay" (around 250 counts).

5.4. SEM: A mediated model

Although mediational analyses can be performed with both multiple regression and SEM, SEM is usually considered the preferred method given its advantages of smaller standard errors, the efficiency of simultaneous estimation of all parameters, and the consequent power in detecting mediation structures (Cheung & Lau, 2008; Iacobucci, Saldanha, & Deng, 2007; Zhao, Lynch, & Chen, 2010). The SEM analyses in this study were performed using the AMOS 23.0 statistical package.

Analyses revealed that item parceling, a measurement practice of using an aggregate-level indicator comprised of the sum or average of two or more items (Little, Cunningham, Shahar, & Widaman, 2002) as manifest variables in SEM procedures, resulted in better fitting solutions and less bias in estimates of structural parameters when items had unidimensional structure (Bandalos, 2002). The factor analyses in our study revealed that all the multiple-item scale constructs adopted had unidimensional structures. For this reason, item parceling was used in performing SEM analyses.

We ran two structural models using past game cheating behavior (Model 1) and future cheating intention (Model 2) as the ultimate dependent variable. Past research has identified gender as an important demographic variable influencing individuals' ethical decisions (e.g., Glover, Bumpus, Logan, & Ciesla, 1997; Henle et al., 2005). Hence, gender was treated as control variable in the models. Given the significant correlation between ethical idealism and ethical relativism (r = .15, p < .001), a covariance path was added between these two constructs in the final models.

For both the models, the results showed an excellent fit with the data: χ^2 (3) = 4.76, p = .19, NFI = 0.99, CFI = 0.99, TLI = 0.98, RMSEA = .02 (90% confidence interval (CI): .00–.05). All path coefficients, with the only exception of the path for H2, were in line with predictions (see Figures 2 and 3). Specifically, in support of H1, the results showed that ethical idealism negatively influenced game cheating behavior (β = −.13, p < .001) and game cheating intention (β = −.10, p < .001). The results also upheld H4 and H5, showing that ethical idealism negatively predicted perceived game cheating benefits (β = −.11, p < .001), whereas relativism positively predicted perceived cheating benefits (β = .18, p < .001). The results also supported H3, showing that perceived cheating benefits positively influenced game cheating behavior (β = .35, p < .001) and cheating intention (β = .41, p < .001). Meanwhile, however, the predicted effects of ethical relativism on game cheating behavior (β = −.03, p = .18) and cheating intention (β = .03, p = .19) were found nonsignificant. Thus H2 was not supported. The control variable of gender was found a significant factor impacting game cheating behavior (β = −.07, p < .01, boys cheated more often) and cheating intention (β = .06, p < .05, more girls intended to cheat in the future). The interesting difference in the gender effect directions requires further investigation in future studies.

To examine whether the relationship between personal ethical ideologies and cheating decisions was mediated by the MC (perceived cheating benefits in this study), we adopted bootstrapping procedures with 1000 bootstrap samples (Shrout & Bolger, 2002) and 95% bias-corrected CIs (Cheung & Lau, 2008). As Table 2 illustrated, the indirect effect, direct effect, and total effect of ethical idealism on past cheating behavior as well as cheating intention were all significant. Specifically, ethical idealism alone significantly impacts the dependent variable of game cheating (total effect, standardized (Std.) effect = −.17, p < .01) and cheating intention (Std. effect = −.14, p < .01). Its impact remains significant yet becomes smaller (and of the same sign) after the mediator of perceived cheating benefits is introduced into the models (direct effect, Std. effect = −.13 and −.10, p < .01). Meanwhile, the indirect effects of idealism on cheating decisions are significant. In this case, we say the effects of idealism on game cheating decisions (both cheating behavior and intention) are partially mediated (Shrout & Bolger, 2002) by the magnitude of perceived cheating benefits.

The story is somewhat different with ethical relativism. Specifically, relativism significantly predicts game cheating intention (total effect, Std. effect = .11, p < .01), yet its impact drops to nonsignificance (Std. effect = .03, p = .22) after the mediator is introduced in the model (direct effect). With a significant indirect effect (Std. effect = .07, p < .01), it means all of the impact of relativism is mediated through the mediator of perceived cheating benefits (full mediation). In the model using cheating behavior as dependent variable, however, although the indirect effect of relativism on cheating behavior is significant (Std. effect = .06, p < .01), the total effect (Std. effect = .03, p = .27) and direct effect (Std. effect = −.03, p = .16) are both nonsignificant. This, following Shrout and Bolger (2002) as well as Carlo and her colleagues (2012), is "distal mediation", where the predictor alone – absent a mediator – does not significantly impact the outcome variable yet the indirect effect is significant when the mediator is present. Overall, approximately 15% of the variance in game cheating behavior and 19% of the variance in

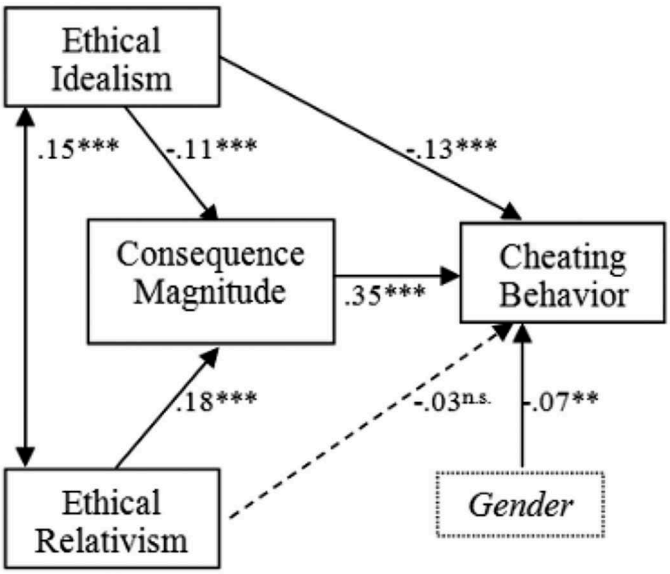

Figure 2. Model 1 with standardized path coefficients.
Note. ***Path significant at the .001 level. **Path significant at the .01 level.

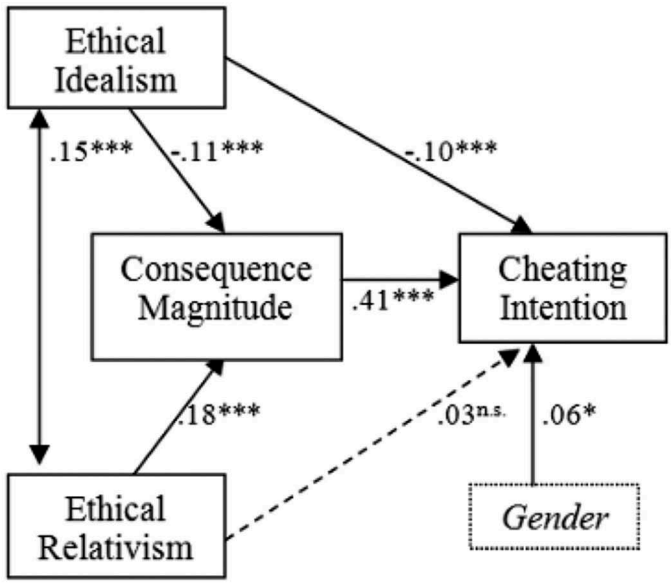

Figure 3. Model 2 with standardized path coefficients.
Note. ***Path significant at the .001 level. *Path significant at the .05 level.

Table 2. Mediations: bootstrapping results summary (standardized effects).

Mediation path	Indirect effect (95% CI)	Direct effect (95% CI)	Total effect (95% CI)	Mediation type
Idealism → benefits → cheating behavior	−.04** (−.06, −.02)	−.13** (−.18, −.08)	−.17** (−.22, −.12)	Partial mediation
Idealism → benefits → cheating intention	−.05** (−.07, −.02)	−.10** (−.14, −.05)	−.14** (−.19, −.08)	Partial mediation
Relativism → benefits → cheating behavior	.06** (.04, .09)	$-.03^{n.s.}$ (−.08, .01)	$.03^{n.s.}$ (−.02, .09)	Distal mediation
Relativism → benefits → cheating intention	.07** (.05, .10)	$.03^{n.s.}$ (−.02, .08)	.11** (.05, .16)	Full mediation

Note. ***$p < .001$; **$p < .01$; *$p < .05$; $^{n.s.}$ = not significant.

future cheating intention were accounted for by the ethical predictors in the mediated model.

6. Conclusions and discussion

This study examined the ethical dynamics of the cheating behavior in online multiplayer games. Although the data indicated that Chinese young gamers were overall critical of cheating behavior in online games, cheating was found to be a common practice in online gaming community. Our open-ended question revealed that around 20% of the respondents explicitly pointed out that game cheating was unacceptable or unethical, yet a majority regarded cheating as acceptable due to the reasons that other players are often cheating and/or online gaming is just for fun. This not only demonstrated the significant influence of gaming peers and the gaming environment but also indicated that gamers tended to dismiss the cheating action as morally insignificant due to the play or play-like nature of online gaming. Our results also showed that game cheating was an action in need of justification for many players, which was consistent with what Consalvo (2009) observed.

The above findings might lend support to the observations made by Flores and James (2012) that a "disconnect" existed between moral/ethical thinking and action in online situations. In other words, even when a young person recognizes a given situation as immoral in online situations, (s)he may not act against it. This disconnect, as they argued, might be due to the interference caused by the distinct "invisibility" (Suler, 2004) and "distance" (Roger, 2007) qualities of online life. Gamers may perceive online interactions as less "real" than face-to-face interactions. The prospect of getting caught and getting punished online is slight. Hence, young gamers may not identify ethics as an issue when it comes to nonphysical gaming experience and virtual goods. Moreover, many online gamers seem to have the mindset that if everyone else is doing it and getting away with doing it, then why they should not participate. When the inhibitions to resist the temptation of cheating in online situations are low, we may worry whether cheating might gradually become an accepted conduct mode in offline situations, especially for the net-generation. One possible consequence is that, in long run, young people's moral development might be thwarted because of heavy involvement in online experiences (Flores & James, 2012) such as online gaming. This may make deterring cheating on and off the Internet a daunting task for both the gaming industry and the society in general, and thus may have profound moral implications to our society.

With regard to the ethical antecedents of cheating decisions, we found that ethical idealism had significant negative impact on past cheating behavior and future intention. Specifically, the more idealistic a gamer was, the less likely (s)he cheated or intended to cheat in online multiplayer games. Results also showed that the more idealistic a gamer was, the less benefits (s)he perceived from game cheating; and the less benefits (s)he perceived, the less likely (s)he conducted cheating behavior or intended to cheat. This set of significant relationships constructs a complete loop, i.e., an intermediated model of ethical ideologies, the MC, and cheating decisions. In other words, the personal moral philosophy of idealism had both direct and indirect influence on game cheating intention and behavior, which confirms the mediating role of the MCs (as a primary dimension of moral intensity). Meanwhile, our results revealed that the personal moral philosophy of relativism had only significant indirect influence on game cheating intention and behavior. Hence, the results largely verified the proposed mediated connection between gamers' ethical ideologies and their game cheating decisions, with the only exception of relativism on cheating behavior.

7. Implications and limitations

As Capilla (2012) argued, the Internet is not neutral; it changes social rules and influences our choices. In this sense, the Internet contributes to create a new society, which generates new patterns, rules, principles, and values. Since morality has been described as the combination of rules, principles, and values valid for a certain society in a specific period of time (Capilla, 2012), the new rules generated by the Internet might create a new morality for the digital era, the morality of the *Net Generation*. We thus need to better understand youth ethics in the digital era, specifically how the new media environment changes the morality of the technology-savvy youth today. Hence, although cheating as an unethical behavior is an omnipresent threat in offline society and is well researched, it is important to examine cheating behavior in the online context.

Testing the mediated model of ethical antecedents, PMI and online game cheating may make several contributions to research and management. First, despite the extensive research on ethics in business and academic contexts, our study extended such research endeavor to the new media environment and the new form of deviant behavior of online game cheating. To the extent that PMI mediates the effects of personal moral philosophy, it plays a critical central role in online ethical decision-making. Our study found that part of

the influence of personal moral philosophies on game cheating is operated through perceptions of moral intensity. That means ethical models that ignore these links will have reduced explanatory power in empirical research. Our findings offered valuable insights into the ethical antecedents of game cheating decisions and the ethical decision-making process in online gaming context, which can contribute to both the game literature and the (online) ethics literature.

Second, for the game industry, knowing the ethical dynamics operating in the decision of online game cheating can potentially reveal what interventions can be used to discourage such behavior. For instance, the perceived magnitude of benefits was found to be a significant predictor of the ethical decisions of game cheating. Gamers are less inclined to cheat when perceiving fewer benefits and yet more harm, and vice versa. Meanwhile, our study also revealed significant influence of gaming peers on gamers' unethical behavior. Taking these into consideration, more stern measures of threats reinforced by punishment may seem like the best deterrent of the unethical behavior of game cheating. Game operators may want to establish and enforce strict game cheating rules and make the adverse cheating outcomes as observable as possible in order to discourage gamers from cheating in games.

Third, in recent years, educators and educational researchers around the world are beginning to question the relevance of current educational models for a more rapidly shifting group of technology-savvy students (McLeod, 2011) since students' habits, goals, and values are changing (Sierra & Hyman, 2008). It should be noted that even if teens and young adults have the capacity to think morally and ethically, they need to recognize situations as moral or ethical in nature (Nucci, 1996). As shown in this study, a great number of young gamers tend to think that the play nature of gaming makes the decision to cheat or not simply a matter of personal preference instead of an ethical choice. To enhance youth's ethical sensitivity and ethical decision in online contexts, social units (schools, families, etc.) need to take the significant factors into account. For instance, young gamers may need to be helped to recognize their personal moral philosophies; and different kinds of ethics training may be appropriate for adolescents from different ethical climates. Our findings support previous studies showing that more idealistic people tended to exhibit higher honesty and integrity while relativistic people tended to exhibit lower honesty and integrity. So an ethical perspective of idealism could be more emphasized in ethics training. The emerging "digital citizenship" curricula may also provide valuable support. Meanwhile, studies suggest that peer supports in multiplayer game contexts can scaffold ethical thinking, countering the "invisibility" of other players (Croft, 2011; Gilbert, 2009). Hence, school-based efforts may be more effective if being supplemented by peer-based efforts in online contexts.

Despite the above contribution, this study has a number of limitations. First, our study only examined the game cheating behavior and its ethical dimensions of student gamers, which limits the generalizability of the results. The model can be tested on a nonstudent sample to see whether there is any difference from that for student gamers.

Second, we only examined the ethical dimensions of game cheating behavior among Chinese gamers. It has been reported that Asians have a different value system regarding ethical issues such as the use of copyrighted material (Lysonski & Durvasula, 2008). Given that online gaming cheating is not unique to China or restricted by national boundaries, comparison between cultures could determine if the ethical perceptions regarding game cheating vary across cultures and the relationships identified in this study are common across cultures. It thus would be useful for future research to replicate this study with other samples in different cultures.

Third, online spaces provide new contexts, opportunities, and challenges for moral development (Bradley, 2005). The inconsistent use of ethical thinking suggests that certain online contexts may engender greater "moral sensitivity" (Bebeau, Rest, & Narvaez, 1999) while others may coincide with greater "disinhibition" (Suler, 2004). Future research is thus needed to investigate the same patterns across different online contexts, which can help us understand how differently the cheating behaviors or relevant unethical behaviors are negotiated by participants across different online platforms. This could be a critical next step for understanding key factors related to the process of making moral choices in online spaces and the digital era.

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About the Authors

Yuehua Wu is an associate professor at School of Media and Communication at Shanghai Jiao Tong University, China. She received her Ph.D. degree in Media and Information Studies from Michigan State University, USA. Her main research interests are social impacts of new media, impacts of digital games, and new media law and policy.

Vivian Hsueh Hua Chen is an associate professor at Wee Kim Wee School of Communication and Information, Nanyang Technological University, Singapore. His research interests include new communication technologies, impacts of digital games, human–computer interaction, intercultural communication, and interpersonal communication.

Appendix

Construct measures	Loadings
Game cheating (GC) (α = .89): how often you have done the following things when you play online games. (1 – Never to 5 – Always)	
GC1 On your own or by using third-party programs, modifying game program code or relevant configuration data to gain advantages (such as wallhacks)	.74
GC2 Abusing game procedure (such as quitting the game when you're about to lose) or conduct timing technique (such as delaying your own moves) to gain advantages	.63
GC3 Using tricks to obtain or duplicate virtual assets (virtual gear and in-game money)	.74
GC4 Paying someone else for leveling services; using real money to purchase virtual assets/accounts or selling them for real money	.68
GC5 Using computer programs to compete with human opponents or to automatically level up (bots)	.73
GC6 On your own or by using third-party programs, exploiting a bug or loophole in game program (such as glitching, duping and twinking)	.76
GC7 Disrupting your opponents' network connection to slow down their moving or to deny network service to them	.78
GC8 Hacking another person's account, or using friend's higher-level account to help you get advanced in game	.67
GC9 Using debug codes such as "god mode" to gain advantages	.77
Magnitude of benefits (MB) (α = .86): why you engaged in or might want to engage in (any of) the above activities when playing online games. (1 – Strongly Disagree to 5 – Strongly Agree)	
MB1 It is a good way to improve my gaming performance.	.77
MB2 It could help me move forward when I get stuck.	.76
MB3 It is fun to do that.	.73
MB4 I could advance through the game without spending too much time and effort.	.83
MB5 I could gain monetary benefits from leveling up faster or from acquiring valuable items by doing that.	.72
MB6 I could be superior to other players.	.79
Ethical idealism (EI) (α = .90): whether you agree or disagree with the following statements. (1 – Strongly Disagree to 5 – Strongly Agree)	
EI1 People should make certain that their actions never intentionally harm another even to a small degree.	.73
EI2 Risks to another should never be tolerated, irrespective of how small the risks might be.	.73
EI3 The existence of potential harm to others is always wrong, irrespective of the benefits to be gained.	.81
EI4 One should never psychologically or physically harm another person.	.82
EI5 One should not perform an action which might in any way threaten the dignity and welfare of another individual.	.83
EI6 If an action could harm an innocent other, then it should not be done.	.78
EI7 The dignity and welfare of the people should be the most important concern in any society.	.72
EI8 It is never necessary to sacrifice the welfare of others.	.70
Ethical relativism (ER) (α = .82): whether you agree or disagree with the following statements. (1 – Strongly Disagree to 5 – Strongly Agree)	
ER1 What is ethical varies from one situation and society to another.	.65
ER2 Moral standards should be seen as being individualistic; what one person considers to be moral may be judged to be immoral by another person.	.77
ER3 Different types of morality cannot be compared as to "rightness".	.69
ER4 Questions of what is ethical for everyone can never be resolved since what is moral or immoral is up to the individual.	.74
ER5 Moral standards are simply personal rules that indicate how a person should behave, and are not to be applied in making judgments of others.	.71
ER6 Ethical considerations in interpersonal relations are so complex that individuals should be allowed to formulate their own individual codes.	.64
ER7 Rigidly codifying an ethical position that prevents certain types of actions could stand in the way of better human relations and adjustment.	.65
Cheating attitude (CA) (α = .80): the extent to which you agree or disagree with the following statements. (1 – Strongly Disagree to 5 – Strongly Agree)	
CA1 It is not fair to other players if one cheats in games.	.83
CA2 It is inappropriate to cheat in games in any situation.	.89
CA3 Cheating in game is a serious issue.	.82
Peer cheating (PC) (α = .82): how many of the following game players have engaged in game cheating? (1 – None to 5 – Most)	
PC1 Of all game players on the Internet,	.76
PC2 Of all the gaming opponents you've ever played with on the Internet,	.84
PC3 Of all your acquaintances (such as classmates or colleagues) or people you've heard about in real life who play online games,	.81
PC4 Of all the significant others in your life (family members and close friends) who play online games.	.79