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Abstract

This study tests cultivation effects of female-oriented dating simulation games on players' gender attitudes and romantic beliefs. Additionally, the study investigates mediating effects of parasocial relationship, and conditional effects of relationship status. A survey in China with a sample size of 284 participants is utilized to test the hypotheses. This study found that game exposure relates to both parasocial relationships with game avatars and targeted characters. Game exposure also positively relates to equal gender attitudes and romantic beliefs. In addition, there are strong relationships between parasocial relationships and romantic beliefs.

Keywords: dating sims, cultivation theory, parasocial relationship, gender attitudes, romantic beliefs

CULTIVATION EFFECTS OF FEMALE-ORIENTED DATING SIMS:
PLAYERS' PARASOCIAL RELATIONSHIPS, GENDER ATTITUDES, AND
ROMANTIC BELIEFS IN CHINA

by

Jingjing Yi

B.A., China Youth University of Political Studies, 2017

Thesis

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Cultivation Effects of Female-Oriented Dating Sims:

Players' Parasocial Relationships, Gender Attitudes, and Romantic Beliefs in China

Chapter 1: Introduction

“Where love is a game you can win!” is an eye-catching slogan on the website Amino. It is an online dating simulation games community for English users. Similarly, in China, a dating simulation game uses “My superpower is super loving you” to attract consumers. These fantastic slogans lead us into a rosy world of dating simulation games which provide a chance for female players to experience first-person perspective romantic relationships with virtual characters.

Female-Oriented Dating Sims

Dating simulation games (dating sims), otherwise known as romantic games or relationship simulation role-playing games (RS-RPG), originate in Japan and go back to the 1990's with a large market in East Asia, especially in China (Song & Fox, 2016). Female-oriented dating sims are one of the subgenres of dating sims. In the Baidu Tieba “Female-Oriented Game”(“乙女向游戏吧”), an online community for players, there are more than 10,000 participants (tieba.baidu.com). At the end of 2017, a Chinese female-oriented dating sim *Love and Producer* (see Figure 1) made a huge success and occupied social media pages overnight, introducing this game genre to the public. This game not only attracts large numbers of new players, but also made one million dollars revenue (SensorTower.com). Later, emerging dating sims were launched on mobile phones for their enormous potential economic benefits, and several game platforms started to solicit individual game producers to create and publish their own female-oriented dating sims. For example, Orange Light Game

provides an easy-operated game creator, as well as game materials, such as pictures and background music, to three million individual producers. And its registered users exceeded 55 million benefiting from the user generated content (36kr.com). Along with the booming dating sims market, a growing number of players are invited into this romantic game world.

The female-oriented dating sim is an interactive game genre, normally featuring by text-based conversations aided by visuals and sounds (see Figure 2). During most of playing time, players can passively enjoy the game by reading the dialogues as a visual novel. However, the key of the gameplay is to control the story when different threads come out (see Figure 3). The events and selections in the game are designed as a decision tree format, which means different choices will lead to different endings. Players need to make each choice correctly to reach the desired game ending. Some players will also go through every thread to experience different stories, including a bad ending to break up with game characters, which costs a lot of time investment. Recent dating sims, *Touken Ranbu* as an example (see Figure 4), allow players to develop relationships by playing minigames or raising in-game levels. The advanced dating sims are using new technologies like virtual reality and augmented reality to develop a more authentic virtual boyfriend and construct a not actual but approximately real dating experience (see Figure 5).

The ultimate goal in the female-oriented dating sims is to achieve romantic relationships with game characters (Taylor, 2007). To better enjoy the heterosexual romantic fantasy, the game adds interactivity to help players identify with the avatar. For example, players can name the avatar in the beginning and play in the first-person perspective (see Figure 6). The game avatar is normally depicted as a young girl with a longing for true love. It is undeniable that traditional feminine features can be easily found on avatars, such as big eyes, long hairs, and a thin body (See Figure 7), which is consistent with Asian culture and aesthetic of women (Kim, 2009). However, this femininity is not sexualized and served for women's

preference. Also, there is no unified image of an avatar: she can be a strong warrior or an ordinary student. Most crucially, the female avatar plays the most important role in the story, while several male characters help the avatar to realize her dream or duty. For example, in the first female-dating sim *Angelique* (see Figure 8), the avatar is a candidate of the queen ruling a Cosmos. Players need to win the crown within the assistance of nine male guardians, as well as develop relationships with them. In the virtual world of female-oriented dating sims, girls' power is as important as heterosexual romantic fantasy. Kim (2009) concluded that this kind of women's games can promote gender diversity and equality in the game market and offer pleasure to women players through the adventure of romance.

As cultivation theory pointed out, long time exposure to the media will affect users' perceptions of the real world (Gerbner & Gross, 1976). Thus, when players spend a long time playing female dating sims with ideological romantic messages, their romantic beliefs in the real world may be affected. Meanwhile, according to the game settings, female avatar controls for the relationships with characters in the dating (Lynch Tompkins, Driel, & Fritz, 2016), which may also have effects on players' gender attitudes toward sexual relationships.

The purpose of this thesis is to apply a quantitative method to understand cultivation effects of female-oriented dating sims on female players. A survey method is employed to test relationships between game exposure and players' gender attitudes on sexual relationships and romantic beliefs in China. Additionally, parasocial relationships that players developed with target characters and avatars are brought in as mediators.

Cultivation Theory

Emerging studies are bringing new directions for cultivation theory, especially in the new media era (Fox, & Potocki, 2016; Morgan, Shanahan, & Signorielli, 2015; Tsay-Vogel,

Shanahan, & Signorielli, 2018; etc.) This study explores cultivation theory in a new media platform – female-oriented dating simulation games.

Cultivation theory assumes two levels media effects on audience, which are perceptual changes of social reality (the first-order effects) and perceptual changes of attitudes and beliefs (the second-order effects) (Shrum, 2001). As a commonly utilized communication theory, however, it lacks strong empirical findings and cannot be generalized to a broad population, particularly the second-order effects, which focus on individuals' attitudes change (Potter, 2014). Moreover, the original concepts did not provide an elaborate mechanism of how media message cultivate viewers; and later studies did not accomplish a precise message analysis system (Potter, 2014).

This study aims to test correlations between game exposure and players' attitudes according to the cultivation effects of romantic media. Beyond media exposure, this study adds parasocial relationships and individual differences into this process, thereby complementing the previous cultivation studies.

Virtual Parasocial Relationship

Virtual characters have emerged in new media age for interactive storytelling and individuals have more interactions with them on different media platforms (Cavazza, Charles, & Mead, 2002). As parasocial relationship theory suggests, media users have a pseudo social relationship with persona through mediated interpersonal communication (Hartmann, 2008). People can also develop relationships with virtual characters in video games.

Video games are considered interactive media that allow players to interact not only with human players, but also virtual characters (Johnson, et al., 2002). Among the different video game types, dating sims particularly emphasize virtual relationships by asking players to develop the romantic relationships with in-game characters (Taylor, 2007). In the dating

sims, players identify themselves as the game avatar and use the first-person perspective. They devote emotions on male characters, perceiving them as their friends or partners rather than fictional entities (Galbraith, 2011). Therefore, a virtual parasocial relationship will be built between players and game characters, including controlled avatars and target characters.

This study investigates players' relationships with a female avatar and male characters. It firstly provides a glimpse into the parasocial relationship with virtual characters. Furthermore, this study will test virtual parasocial relationships' mediating function during the cultivation process.

Gender Attitudes and Romantic Beliefs

Romantic media, including the dating sims, are identified as an essential source of sex knowledge and impact young adults to develop gender attitudes related to sexual relationships (Brown, Halpern, & L'Engle, 2005; Ter Bogt, Engels, Bogers, & Kloosterman, 2010). In China, the mass media play the most important role in sex education, especially when people are not comfortable talking about sex with their children (Zhang, Li, & Shah, 2007). Dating sims are the simulators of the complete dating process, including erotic scenes in the R18 plus games, where players choose their own romantic adventure and get feedback for their choices. When dealing with intimate relationships and sexual activities, people may learn from the game and follow the game pattern. Relationships are usually initiated by female avatars, and they can decide which character to date and which activities to do. This freedom and dating initiative in the virtual world may affect consumers' gender attitudes toward sexual relationships.

Another potential outcome is the endorsement of idealistic romantic beliefs. Like many other romantic media, dating sims are still replete with idealized love stories (Lippman, Ward, & Seabrook, 2014). Players spend hours to go through every thread in the game and find the best ending with a favorite character, which fulfills an ideology of romanticism that conquers all the obstacles for true love. Playing dating sims is not only watching romantic love portrayals, but also experience and practice for perfect intimate relationships. A long-term devotion to such games may associate with players' romantic beliefs and even relate to their real-world relationship.

These two attitudes toward sexual relationships and romantic beliefs are the main proposed dependent variables in this study. Testing the relationships between game exposure and endorsements of equal gender attitudes or romantic beliefs can help us to understand female-oriented dating sims' effects on female players and generalize these effects to other romantic media.

Conclusion

This chapter has explained the purpose, rationale, and significance of this study. Chapter 2 will introduce previous studies of the cultivation theory, parasocial relationship theory, and their utilization in the video games, as well as romantic beliefs and gender attitudes on sexual relationships. The third chapter presents the methodology including study procedure, sample, measures, and pretest. Chapter 4 will present full results with data and analyses. Finally, contributions, implications, limitations, and future studies will be discussed in Chapter Five.

Chapter 2: Literature Review

This chapter provides an overview of the cultivation theory and parasocial relationship theory. It clarifies the central concepts and variables, which are dating sims, gender attitudes on sexual relationships, and romantic beliefs. Based on these established theories and previous studies, researcher proposes hypotheses and research questions in this chapter.

Female-Oriented Dating Sims and Female Player

Dating simulation games (dating sims) are one subgenre of simulation games, in which players are building romantic relationships with different characters. Compared to the real world, dating sims present images of ideal partners, love styles, and other romantic elements (Taylor, 2007). There is little literature studying dating sims, and they did not introduce male-oriented and female-oriented dating sims separately because readers are not familiar with this game genre. Taylor (2007) described male and female game characters in four typical male-oriented games along with the Japanese culture. She concluded that the male character as the protagonist is just an empty shell, which helps the players easily fit themselves into the character, whereas the female characters can be complicated with emotions and personalities. Additionally, the game characters are always successful on relationships. Kim (2009) introduced the history and main features of female-oriented games and analyzed two specific games to illustrate their characters, avatars, gameplay, and narrative structure. In the game, players are “identifying with the female avatar and socializing romantically with the game characters.” (Kim, 2009, p.184) Through this special genre of game, the author believes that women players build their own game communities and are empowered by realizing they can also be the dominated audience of video games.

This thesis focuses on female players and female-oriented dating sims, which contribute to gender diversity in the gaming culture (Kim, 2009). The number of female players has

grown in recent years and has reached 41 percent of the total gamer population (ESA, 2017). However, gender stereotypes still exist in the game world. Even though sexualization in video games has been reduced, female characters are more likely to be sexualized and depicted in secondary roles than male characters (Lynch, Tompkins, Jessica, Irene, & Fritz, 2016). Women are marginalized in the male-leading game culture (Tomkinson & Harper, 2015) and are often regarded as playing worse than men (Williams et al., 2009).

Compared to male gamers, women are more likely to seek social interaction opportunities in the game (Hartmann & Klimmt, 2006), which leads to different game preference. Previous study suggested that gender will affect game choices, for instance, women enjoy casual games more than competitive games (Trepte, Reinecke, & Behr, 2009). However, traditional game culture hardly takes female gamers' voices into account, whereas female-oriented dating sims have a disproportionate number of female users compared to male users because of casual a game design and a more artistic style favored by women (Kim, 2009). In contrast to what is found in the majority of video games, male characters are sexualized, while female avatars have initiative options in the female-oriented dating sims. The in-game adventure is no longer about saving the world and princesses but completing a heroine's love story. These special game settings may affect female players' gender attitudes toward sexual relationships and romantic beliefs.

Most women players are hiding in the male-dominated game world in a weak position, as a result, game studies are more likely to focus on males than females. A female-oriented dating sim is a unique observation site to study female players and how they are affected by this specific type of romantic media.

Cultivation Theory

Overview of Cultivation Theory

Cultivation theory states that longtime media exposure will affect individuals' perceptions, attitudes, or beliefs of the real world. It started from a massive research project called the Culture Indicators, in which Gerbner and his team developed the concept of "cultivation" to describe a large-scale and long-term effect of television viewing (Gerbner, Gross, Morgan, Signorielli, & Shanahan, 2002). There are various findings in this project to suggest that heavy viewers are cultivated through television viewing. Media exposure has significant impacts on their perceptions of violence, older people, women in the real world to imitate the virtual world presented by television (Gerbner, et al., 2002). Gerbner and his team analyzed programs in ABC, NBC, and CBS from 1967 to 1968, and found that one of the most prominent elements on screen is the violence (Gerbner & Gross, 1976). It is not only that television provides an inaccurate violent image of reality, but also heavy exposure makes people overestimate criminal activities in the real world, thus promoting their fear of crime (Gerbner & Gross, 1976). This research also set a footstone for the following studies and television violence becomes a primary topic in the cultivation analysis (Morgan & Shanahan, 2010). Gerbner and his team (2002) intended to make a macro system of media effects in the cultivation theory, which generates different media contents into a coherent virtual world. However, it is hard to accomplish in their experiments because they failed to simulate every element on television in the experiments.

Current cultivation studies have altered the original conception of cultivation in order to apply it to the new media environment. Rather than seeking to build a comprehensive media system analysis, present studies have narrowed down both media programs and research objects. For example, researchers have tested cultivation effect of reality shows (e.g., Lee,

Chen, & Harmon, 2016; Scharrer & Blackburn, 2017) and medical dramas (e.g., Chung, 2014). Teenagers are considered the primary affected group in cultivation (e.g., Stern, 2005; Martins & Jensen, 2014). Meanwhile, dependent variables have extended from perceptions of violence to areas such as authoritarianism (e.g., Morgan & Shanahan, 2017), smoking intention (e.g., Yang, et al., 2013), love styles (e.g., Hetsroni, 2012). As for research methods, short-term experiments or surveys are taking places of the long-term cross-sectional studies because media content can be more easily manipulated in laboratory settings than on surveys (Potter, 2014).

Cultivation theory in the video games

In recent years, cultivation theory has spread to studying video games. Gerbner chose television as the primary media for cultivation study because of its “centralized system of storytelling” and “coherent set of images and messages” (Gerbner, et al., 2002, p.44). Video games also have these characteristics to imitate the real world, therefore, bringing possible cultivation effects to players. Meanwhile, video games are a more pervasive medium than television because users can easily access them on multiple devices at any time (Lenhart, et al., 2008). Moreover, their interactivity and immersive experience will intensify the effects (Mierlo & Bulck, 2004). Previous studies have analyzed violent content in popular video games, and researchers believe that they have negative influences on users similar to television violence (Sherry, 2001).

Mierlo and Bulck (2004) tried to link cultivation theory to video games effects by comparing them with television viewing effect. They found that violent video game exposure positively related to players’ estimation of crime and the propitiation of police in the real world. But the overall cultivation effects of video games are different from the television’s

influence mechanism because these two mediums deliver different messages to user in distinctive ways.

Williams (2006) did the first longitudinal controlled experiment to test cultivation effects of playing video games. He chose multiplayer online role-playing game as the observation platform. After a one-month experiment with first-time players, he found that longer gameplay participants believe that people are more likely to experience a robbery with weapon in the real world. Additionally, this game exposure had stronger effects on men than women. However, other perceptions of rape, physical assault, and murder were not significantly different. The author argued that future studies should consider various type of cultivation effects, which could be negative or positive. Therefore, it asks for a precise measurement of cultivation outcomes. This significant result highlights the future of cultivation theory's application on video games.

Tanes and Cemalcilar (2010) focused on an educational function of gaming and argued that positive values and beliefs can also be cultivated through video games. They chose the simulation game SimCity to test whether players have perceptual changes on ideal city image, city issues, and city government. This study hosted a six-week experiment on Turkish adolescents. It found that playing SimCity generated both first order cultivation effects of perception changes and second order cultivation effects of attitudes changes on participants. Players are more likely to use game concepts to describe the ideal city and pay more attention to their neighborhoods. Similar to Williams's (2006) study, even though not all the hypotheses were confirmed in this experiment, it provides the evidence for cultivation effects on specific perception and attitude changes (violence and municipal administration respectively) and moved cultivation studies forward in a new direction.

Recent studies apply cultivation theory to videos games with various perspectives. Yielding to features of video games, especially stereotypes in a virtual world, researchers

found that gameplay affects players' racial stereotypes (Behm-Morawitz & Ta, 2014), sexist attitudes (Breuer, et al., 2015), gender stereotypes (Kondrat, 2015). These studies used surveys, experiments, and interviews to extend cultivation theory's scope. Overall, video games are drawing increased attention in the research field and the cultivation perspective will bring benefits to study these new "narrative devices" (Morgan, Shanahan, & Signorielli, 2015).

Parasocial Relationship Theory

Parasocial Relationship

A parasocial relationship (PSR) is "a seeming face-to-face relationship" between media users and media personas (Horton & Wohl, 1956). This theory was developed to study the relationship between the audience and characters on television, such as performers (Rubin & McHugh, 1987), hosts (Grant, Guthrie, & Ball-Rokeach, 1991), and newscasters (Levy, 1979; Houlberg, 1984), as well as other media platforms such as radio (Rubin & Step, 2000) and blogs (Thorson, & Rodgers, 2006). PSR theory is also developed in the new media era when time and space barriers are breaking down. Compare to the past, the audience has more time interacting with media persona, thus building a tighter relationship (Hartmann, 2008).

A parasocial interaction (PSI) is the "simulacrum of conversational give and take" (Horton & Wohl, 1956) between media users and media persona. When media users taking the media persona as a prime group member, they will have the interpersonal interactions with the personas who sit in the different space. PSI can be considered a media phenomenon and a psychological phenomenon (Giles, 2002). It is a media phenomenon because it deals with media figures, and original interpersonal communication delivered by the media. Hartmann and Goldhoorn's (2011) went back to the original PSI definition developed by Horton and Wohl (1956) and focused on the interactions during the media use. PSI is also a

psychological phenomenon because it is an imitation of social interactions and reflects social norms (Giles, 2002).

For its psychological features, individuals will extend the interactions with media persona by themselves. That means except for the activities during the media use, parasocial interactions can be extended to the outside of the media after PSR has been established (Giles, 2010). These outside parasocial interactions suggested by Giles are imitating behaviors, also known as modeling, and imagined interactions. According to Giles (2010), for example, audience' discussion of the media persona in the real world is also a type of parasocial interaction. Social media platforms provide a more convenient place for sharing and discussing, becoming a potential place for enhancing parasocial interaction with media figures.

When Horton and Wohl (1956) first developed the PSI, they explained that it only exists during the television viewing. Later researchers brought PSI into other media platform and extended the concept of PSI with long-term identification (Rubin et al., 1985) and interactions beyond media viewing (Giles, 2002). Since PSI has become a long-term concept, it is often conflated with PSR in previous studies (Dibble, Hartmann, & Rosaen, 2016). For example, Rubin et al. (1985) modified PSI's definition as an interpersonal involvement and established a widely-used PSI scale based on their concept. However, Dibble et al. (2016) argue that Rubin's scale reflects PSR more than short-term PSI. This study chooses the concept of virtual parasocial relationship to indicate the relationships and interactions between players and game characters because it focuses on a long-term effect of playing female-oriented dating sims when relationships are established through multiple interactions.

Emerging studies tried to develop a clearer and detailed concept of PSR. Tuchakinsky (2010) divided PSR into two types of para-romantic love and para-friendships and combined qualitative and quantitative method to create new scales for each category. She and Dorros

(2018) found that romantic PSR is related to adolescents' romantic beliefs and that it has an influence on their real relationships. Dating sims take romantic PSR as the central element that can provide further support for the PSR theory and examine deeper aspects of romantic content.

Virtual Parasocial Relationships

PSR studies have spanned from television to the internet and Ballantine and Martin (2016) argue that online media have higher levels of parasociality than traditional media. Studies are investigating the parasocial relationship with online celebrities (Stever & Lawson, 2013) and video game streamers (Blight, 2016). Some researchers argue that people can also have a parasocial relationship with virtual characters. For example, Schmid and Klimmt (2011) studied reader's PSR with Harry Potter, a virtual character in the novel, across different cultures. It has also been used in video games to examine the relationship between players and game avatars (Jin & Park, 2009).

PSR with media characters includes two primary functions, viewing the figures as their companions or as their personal identities (McQuail, Blumler, & Brown, 1972). The relationships between players and in-game characters in the video game also reflect these two functions. Banks and Bowman (2016) defined player-avatar relationships in relation to four categories, perceiving avatar as the object, me, symbiote, and other. Among these four types, "object" has the highest sense of control, "me" has the highest identification, and "other" has the highest sociality. It means that avatars can be fully controlled by some players for game competitions as an object; meanwhile, they can also be treated as media personas when some players identify them as "me" or "other." Based on their findings, parasocial relationships can be developed when players perceive game characters as "me" or social "other." Therefore, the current study divides in-game PSR into two dimensions, "personal identities" as player-

avatar relationship (PAR) and “companions” as play-character relationship (PCR), to better understand the virtual PSR with game characters.

Female-oriented dating sims allow people to play in the first-person perspective and put their emotions in the game, perceiving game persona as real people rather than fictional entities (Galbraith, 2011). In female-oriented dating sims, game avatars, which default to female, are directly controlled by players. And players will always identify themselves as game avatars. Game characters in this thesis specifically refer to targeted male characters, which are players’ friends or potential partners. In this way, a parasocial relationship is built between players and game avatars/characters.

Media exposure is a common predictor of parasocial relationships. Perse and Rubin (1989) used length of television viewing to predict audiences’ PSR with characters. Several recent studies also (e.g. Cohen, & Holbert, 2018; Eyal, & Te’eni-Harari, 2013; Hoffner, & Cohen, 2018) successfully predicted users’ PSR with persona through multiple media exposures. According to Rubin and McHugh (1987), communication, liking, and intimacy are the three critical elements of parasocial relationship's development. The game exposure, that is playing time, can increase all the three elements between game avatars/characters and players. Therefore, this thesis predicts that exposure to female-oriented dating sims can enhance players’ parasocial relationships and interactions with female avatars (PAR) and male characters (PCR).

H1a: Female-oriented dating sims playing years will positively correlate with PAR.

H1b: Female-oriented dating sims average playing hours per week will positively correlate with PAR.

H2a: Female-oriented dating sims playing years will positively correlate with PCR.

H2b: Female-oriented dating sims average playing hours per week will positively correlate with PCR.

Gender Attitudes

Attitude “is typically defined as a tendency to evaluate an entity with some degree of favor or disfavor” (Eagly & Mladinic, 1989) in three dimensions which are cognition, affect, and behavior. Gender attitude’s entity or objective is usually gender equality and gender relations (Bergh, 2007), representing people’s beliefs toward men and women. Ashmore constructed three studies (Ashmore 1990; Ashmore, Del Boca, & Bilder, 1995; Del Boca, Ashmore, & McManus, 1986) to set a structured gender attitude inventory with 14 primary and three second-order scales for a comprehensive assessment of gender-related beliefs. The primary scales ask for a fine-grained measurement of gender orientations, while the second-order scales of stereotypes, sexual relationship, and societal organization allow for a more general assessment of gender-related attitudes. Within these scales, this inventory inclusively covers four interconnect levels gender-related attitudes -- “as individual men and women, in interpersonal relationships, in culturally-defined roles, and as significant social categories within society” (Ashmore et al., 1995, p756). Meanwhile it also allows a separate assessment of the gender attitude in a specific topic.

Many cultivation studies took gender attitudes into account when analyzing the television contents and measuring people’s perceptual changes (Gerbner, et al., 2002; Zhang, Miller, & Harrison, 2008). An early cultivation analysis found that men dominated the television screens with main characters and high social status (Signorielli, 1989). Not surprisingly, heavy viewers living in that male-dominated condition got a higher score on sexism scales. Saito (2007) hosted a survey in Japan and found that longer television viewing predicated more traditional gender role attitudes. Ymamoto and Ran (2014) got the similar results by analyzing the Japanese General Social Surveys from 2000 to 2008.

Video games are also male dominated, where negative attitudes toward women are hard to eliminate (Paaßen, Morgenroth, & Stratemeyer, 2017). Emerging studies explore

gameplay's effects on gender attitudes from various perspectives. One experiment among women players found that playing sexualized heroine resulted in less favorable attitudes toward women's cognitive capabilities and physical capabilities, but there was no significant effect on women's appearance and role in career/domestic work (Behm-Morawitz & Mastro, 2009). Stermer and Burkley (2015) found that men who play sexist game have higher stereotypic attitudes in benevolent sexism (Glick & Fiske, 1988) than non-players, but there is no significant difference among female players. Blackburn and Scharrer (2018) showed that both male and female players are cultivated by violent video game exposure on masculine gender role norms. Most studies have focused on male-oriented games and demonstrated their influence on forming traditional gender attitudes with bias and sexism. However, video games can also link to an equal or untraditional gender attitude varied by their contents, although this possibility is neglected by researchers.

Gender Attitudes on Sexual Relationships

Gender attitudes on sexual relationships ask for people's agreement toward male or female's position and behavior in dating and sex. Cultivation theory postulates that audience members will change their attitudes, including sexual norms, in accordance with the depiction in media during heavy exposure (Gerbner, Gross, Morgan, Signorielli, & Shanahan, 2002). Female-oriented dating sims contain a large amount of content about dating and relationships (Ganzon, 2019), which relate directly to gender attitudes on sexual relationships.

This study focuses on players' attitudes toward female sexual initiative or an equal sexual relationship in which both male and female can take the initiative role. Although there is little empirical proof, some related studies have associated media exposure with sexual outcomes (Coyne et al, 2019; Ward, 2003). For example, Bond and Drogos (2004) found that viewing a reality show with abundant sexual content positively correlated with permissive

sexual attitudes. Another study about adolescents found that TV drama exposure significantly related to students' gender attitudes in dating situations (Rivadeneira and Lebo (2008).

From a traditional gender attitudes perspective, women always yield to others, while men are supposed to play a dominant role in sexual relationships (Kiefer & Sanchez, 2007). On the contrary, male characters are depicted sexually and passively chose by female players in the dating sims. This initiative for women in the virtual world may affect their gender role attitudes on sexual relationships. This study draws the female sexual initiative scale from Gender Attitude Inventory (Ashmore, Del Boca, & Bilder, 1995) to test player's attitudes toward equal sexual relationships and proposed that:

H3a: Female-oriented dating sims playing years will positively correlate with gender attitudes on equal sexual relationships.

H3b: Female-oriented dating sims average playing hours per week will positively correlate with gender attitudes on equal sexual relationships.

Romantic Beliefs

Romantic beliefs are the ideologies of romanticism that take love as a foundation (Anderson, 2005). Sprecher and Metts (1989) developed a broad-used scale to measure romantic beliefs, which contains "Love finds a Way," "One and Only," "Idealization," and "Love at First Sight." They also got strong support for its reliability and validity among 730 undergraduate students.

Researchers utilize cultivation theory to link romantic beliefs with romantic media, such as soap operas (Vu & Lee, 2013), Disney movies (Mirchandani, 2017), wedding reality show (Hefner, 2016), and teenager movies (Driesmans, Vandenbosch, & Eggermont, 2016). Among 625 college students, researchers found that romantic media consumption has effects on romantic beliefs, but the influence was moderated by media genres (Lippman, Ward, &

Seabrook, 2014). For example, exposure to romantic-themed TV programs was associated with beliefs in romanticism ideology, while exposure to situation comedies was associated with weaker romantic beliefs.

Female-oriented dating sims are typical romantic media in which players can experience love stories and date ideal partners (Kim, 2009). Song and Fox (2016) have introduced cultivation theory and parasocial relationship theory in a romantic video game study. The results from 317 surveys posted on a Chinese dating sim forum showed that identification with game avatars and parasocial relationships with game characters were positively associated with the players' romantic beliefs. Nonetheless, they did not find a significant relationship between game consumption and romantic beliefs endorsement. These results might be due to their simple consumption measurement. This study develops in measuring female-oriented dating sims exposure with two levels: playing years and average playing hours per week. The latter measurement asks participants playing hours per day and playing days per week and multiply these two numbers to get a more accurate answer.

H4a: Female-oriented dating sims playing years will positively correlate with romantic beliefs.

H4b: Female-oriented dating sims average playing hours per week will positively correlate with romantic beliefs.

Mediating Effects

Similar with real social relationships, parasocial relationships can have great impacts on individuals (Horton & Wohl, 1956). Scholars suggest that PSRs have referential involvements, where audiences may relate fake interactions with media persona to their personal experiences (Katz, Liebes, & Berko, 1992). Thus, audience can learn from the PSRs and make a belief change or even a behavioral change (Papa, Singhal, Law, Pant, Sood,

Rogers, & Shefner-Rogers, 2000). Previous study found that a sexual television program exposure is positively associated with permissive sexual attitudes, and PSRs significantly mediated this relationship (Bond & Drogos, 2004). As for the romantic beliefs, one study claimed that women have stronger PSR than men, and they tend to expand PSR to relation networks (Cohen, 1997). Therefore, female dating sims players' romantic beliefs may also be affected by the in-game parasocial romantic relationship. Based on these discussions, this thesis investigates PSRs' effects in the relationships among dating sims exposure, gender attitudes and romantic beliefs.

H5: PAR will positively correlate with gender attitudes on equal sexual relationships.

H6: PCR will positively correlate with gender attitudes on equal sexual relationships.

H7: PAR will positively correlate with romantic beliefs.

H8: PCR will positively correlate with romantic beliefs.

RQ1: How do PSRs affect the relationships between female-oriented dating sims exposure and gender attitudes on equal sexual relationships?

RQ2: How do PSRs affect the relationships between female-oriented dating sims exposure and romantic beliefs?

Previous studies divided cultivation effects into first order effects, which affect people's perception of social reality, and the second order effects, which have a higher-level influence on people's attitudes and beliefs (Morgan, Shanahan, & Signorielli, 2015). This thesis tests cultivation effects on people's perceptions of gender attitudes on equal sexual relationships and romantic beliefs, which belong to the second order effects. However, many studies failed to provide support for second order effects from a cultivation perspective (Potter, 2014). Another key concept in cultivation theory is mainstreaming, which means that heavy users will be cultivated by the media and media exposure's effects will override other factors (Morgan, Shanahan, & Signorielli, 2015). But researchers also argued that mainstreaming

maybe no longer valid in the current diversified media environment. Therefore, this study examines the influence of individual difference on the proposed cultivation process, such as age, education, income, and relationship status.

RQ3: How do individual differences (age, education, income, relationship status) relate to game exposure, PSR, gender attitudes, and romantic beliefs?

Conclusion

This chapter conceptually reviewed both the cultivation theory and the parasocial relationship theory. It also explored the history of these two theories and analyzed prominent related studies as a way to inspire new directions for this thesis and future research. These new directions, as well as classical theory concepts, provide the rationale for this study's hypotheses and research questions. The next chapter will describe the methodology of the current study.

Chapter 3: Methodology

This chapter provides an overview of the research method, explains reasons for the selection of key variables, and introduces the research process in detail. This research employs a quantitative survey method to study relationships between playing dating sims, parasocial relationships with game characters and avatars, gender attitudes toward sexual relationships, and romantic beliefs among female players. Surveys are a common method in cultivation studies to test whether television viewing or other media usage might affect people's perceptions and beliefs (Morgan & Shanahan, 2010). It can generalize empirical results from participants to the entire population of dating sims gamers (Creswell & Creswell, 2017).

Procedure

This study ran a 10-minute online survey to test hypotheses and research questions. The survey was powered by a professional online questionnaire platform wjx.com, which is a popular online paid survey platform in China. A pretest survey with 45 participants was used to examine the reliability of measurements. A formal survey was conducted three weeks later after the pretest and ran from March 20th to March 24th, 2019.

Potential participants read a brief description of the study at recruitment platforms and went to the survey at wjx.com through an attached link. They first read an informed consent form, and unqualified respondents were directed to the end of the survey. Qualified respondents could engage with the remainder of the survey instrument, which included dating sims experience, measurements of PSR with favorite game characters and avatars, perceptions of romantic beliefs and gender attitudes, and finally demographic information. At the end of survey was a debriefing question to check again their willingness about using their data in the study. After finishing the survey, qualified respondents received a QR code from

wjx.com to collect an incentive in WeChat. A sample questionnaire is attached in Appendix B. The software SPSS was employed to analyze the data collected from the survey.

Sampling and Recruitment

A purposive and convenience sampling method was utilized in the recruitment process. This study sought female adult respondents who had played female-oriented dating sims during the month prior to the survey. Respondents recorded their favorite female-oriented games and characters in the questionnaire. Additionally, players were required to have at least one-year playing experience. A sample size of approximately 300 participants in China was planned to be recruited for the formal study, and 45 participants were planned to be recruited for the pretest.

There were three recruitment sites Weibo, Baidu Tieba, and QQ which offer online female-oriented dating sims communities. Weibo is a popular Chinese microblogging website, similar to Twitter. Baidu Tieba is the largest Chinese online communication platform. It uses forums as a place for users with the same interest, which can be an idol, a program, or a game, to socially interact. Weibo and Baidu Tieba are both open online forums that are accessible for recruitment. On Weibo, the researcher posted a recruitment statement with “#otome game(#乙女游戏)” “#female-oriented dating sims (#女性向游戏)” and asked gaming posters to repost it in order to reach more players. Three Baidu Tieba forums were selected, which are the female-oriented dating sims forum (乙女向游戏吧), the otome game forum (乙女游戏吧), and the otome ukiyoe forum (乙女浮世绘吧). QQ is an instant messaging software service in China. Fans can generate private groups to talk about their hobbies. Recruitment information was posted in two QQ groups with over 500 members, where members needed to answer female-oriented dating sims related questions to join in. In

QQ groups and the Baidu Forum, the researcher had acquired the approval from the administrator before recruiting.

Qualified participants in both the pretest and formal study received about \$1.7 (¥ 12) as an incentive for an approximately 10-minute survey.

IRB and Pretest

This study was approved by the Institutional Review Board (IRB) on January 10th, 2019. An amendment of the sample size and recruitment statement was approved on February 5th, 2019. The data collection for the pretest was conducted on February 13th, 2019 through the researcher's WeChat friend circle with a sample of 45 respondents who consisted of mobile dating sims users. Pretest data was analyzed by SPSS, and all the scales reached satisfactory levels (i.e., Cronbach $\alpha > .70$), the lowest scale was the player-avatar relationship (PAR) scale with a Cronbach $\alpha = .785$. Reliabilities were checked again with the actual survey data and again reached satisfactory levels. Based on the feedbacks from the pretest participants, research revised one statement's translation in PAR scale. Additionally, a trick question was added in the gender attitudes scale to ensure that participants carefully read every statement.

Measurements

Dating Sims Exposure: Player's dating sims exposure is measured by years of playing dating sims and average playing hours per week separately. Respondents answered three time-related questions in the survey: "How many years have you been playing female-oriented dating sims?", "How many hours do you play female-oriented dating sims in one

day?”, and “How many hours do you play female-oriented dating sims in a week?”. The researcher multiplied the hours and days to measure the average playing hours per week.

Parasocial Relationship between Players and Male Characters (PCR):

Tukachinsky’s (2010) PSR Scale (see Appendix A) was adapted to measure the parasocial relationship between players and in-game male characters. It contains 24 items on four dimensions: love-physical attraction (e.g. “I find X very attractive physically”), love-emotional response (e.g. “For me, X could be the perfect romantic partner”), friend-support (e.g. “If X was a real person, I could have disclosed negative things about myself honestly and fully(deeply) to him/her”), and friend-communication (e.g. “If X was a real person, I would give him/her emotional support”). The researcher dropped half of the items because they had the lowest factor loading or were similar to others in order to shorten the length of the questionnaire. As a result, 12 core items were left, among which four items were reverse coded (see Appendix B). All questions employed a seven-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree.”

Parasocial Relationship between Players and Female Avatars (PAR): Player-avatar relationship is measured with a player avatar identification scale (Van Looy, Courtois, De Vocht, & De Marez, 2012; see Appendix A). The original scale has 17 items with three subscales, which are similarity identification (e.g. “I identify with my character”), embodied presence (e.g. “When I am playing, it feels as if I am my character”), and wishful identification (e.g. “I would like to be more like my character”). Similar to the PSR scale, in each subscale, three items were selected, and one item was reversed to build a shortened scale (see Appendix B); in total 8 redundant items with the lowest measurement weights were dropped. The questions also employ seven-point Likert scales ranging from “Strongly Disagree” to “Strongly Agree.”

Gender Attitudes on Sexual Relationships: Gender attitudes on sexual relationships were measured with a female sexual initiative scale from the Gender Attitude Inventory (Ashmore, Del Boca, & Bilder, 1995), which includes 11 items (e.g. “I approve of a woman taking the first step to start a relationship with a man”; see Appendix A). Due to cultural differences, one permissive item was dropped, and other items were also modified after translation. There are three items reversed in the scale (see Appendix B). The questions use a seven-point Likert scale ranging from “Strongly Disagree” to “Strongly Agree.”

Romantic Beliefs: The romantic beliefs scale is a short version of Sprecher and Metts’s (1989) 15-item romantic beliefs scale (see Appendix A). There are eight items selected in four original subscales to measure respondents’ beliefs in idealized relationships, three items from “Love Finds a Way” (e.g. “If I love someone, I know I can make the relationship work, despite any obstacles”), two items from “Love at First Sight” (e.g. “When I find my ‘true love’ I will probably know it soon after we meet”), two items from “Idealization” (e.g. “The relationship I will have with my ‘true love’ will be nearly perfect.”), and one was from “The One and Only” (“I believe that to be truly in love is to be in love forever”). All statements (see Appendix B) use seven-point Likert scales ranging from “Strongly Disagree” to “Strongly Agree.”

All the items were translated into Chinese by the researcher, a native speaker, and presented randomly in the questionnaire.

Chapter 4: Results

This chapter presents the results of data cleaning, a demographic description of respondents, data analyses, and the conclusion. Four analytical methods, including bivariate correlation test, t-test, ANOVA, and hierarchical linear regression, were used to test the hypotheses and research questions.

Data cleaning

There were two questions at the beginning of the instrument to ensure participants were adult dating sims players. Unqualified participants could not continue the survey, and their data was automatically removed by wjx.com. Meanwhile, respondents' responses about their favorite female-oriented dating sims (see Table 6) and the favorite character were referred to so as to confirm their familiarity with the game.

A total number of 301 valid respondents who are 18 years old or above and had recently played female-oriented dating sims participated in this study and received the incentive. To ensure the data quality, two participants who finished survey in less than 100 seconds were dropped from the analysis. Because it is unrealistic to finish the questionnaire within 100 seconds and these two respondents provided habitual answers. The average time for respondents finishing the survey is 453.18 seconds. Because this study focuses on female players, nine male respondents were dropped. In addition, six respondents reported playing more than six hours of female-oriented dating sims per day, which fell into the last two percentile. After careful examinations, patterns of recklessness or habitual answers were

identified among them. Therefore, the researcher excluded these six outliers. A final sample size of 284 was used in the following data analysis.

Among the 284 respondents, two people reported “other” according to education and another two people reported “other” according to occupation status. They only account for .7% in the sample size and cannot be analyzed as an independent group. However, there is no other reason to simply remove their responses. It is possible that these respondents selected “other” because they do not want to reveal their education and occupation status. Therefore, they were put into the majority group of four-year degree and students respectively in the following analyses.

Descriptive Data

There were 284 female respondents, who range from 18 to 32 years old (mean=21.49, SD=3.47). They are all female-oriented dating sims players who have been playing between one to 10 years (mean=3.26, SD=2.14). In the questionnaires, all the respondents reported that they have played female-oriented dating sims in during the past month. On average, they play 4.60 days (SD=1.85) per week and 2.12 (SD=1.19) hours per day. This study measures game exposure by playing years (mean=3.26, SD=2.14) and playing hours per week (mean=10.29, SD=8.15) separately.

Among the 284 respondents, 68.3% people are single, 70.4% of them are students, 62.4% have a four-year college degree, 66.2% are earning less than 3,000 Yuan (approximately \$445) per month, and 38.4% are heavy internet users who spend more than

six hours online every day. Details of participant demographic information are presented in Table 1. It shows that the sample is predominated single young students who have a low monthly income. It may indicate the characteristics in income, education, and relationship status of this special group who play female-oriented dating sims.

Key variables were each measured with a seven-point Likert scale. Respondents reported a mean score of 4.68 (SD=1.14) for the player-avatar relationship and 5.71 (SD=.95) for the player-character relationship, indicating they strongly agree that they have parasocial relationships with game characters. Respondents' average score of 5.87 (SD=.78) on gender attitudes means they strongly agree with female initiative in sexual relationships. There is a mean score of 5.07 for romantic beliefs, illustrating respondents strongly agree with the ideology of romanticism.

Bivariate Analysis

The reliability of scales was checked for four variables, and all measures of PAR, PCR, gender attitudes, and romantic beliefs have a Cronbach's alpha exceeding .70, which indicates the evidence of scale reliability (see alpha details in Table 2). The reliability of subscales from three main scales of PAR, PCR, and romantic beliefs was also checked. However, these subscales did not reach satisfactory levels (i.e., Cronbach $\alpha > .70$), thus, they were not analyzed separately. Because all six core variables were measured in interval or ratio level, a bivariate correlation test was employed to test H1 to H8.

H1: Female-oriented dating sims playing years (a) and average playing hours per week (b) will positively correlate with PAR.

H2: Female-oriented dating sims playing years (a) and average playing hours per week (b) will positively correlate with PCR.

H1 and H2 examine the game exposure's effects on parasocial relationships which are player-avatar relationship and player-character relationship. Female-oriented dating sims average playing hours per week positively correlate with both PAR ($r=.19$, $p=.001$) and PCR ($r=.20$, $p=.001$). However, playing years have a negative relationship with PAR ($r=-.15$, $p<.05$). Therefore, H1b and H2b are supported, while H1a and H2a are not supported.

H3: Female-oriented dating sims playing years (a) and average playing hours per week (b) will positively correlate with gender attitudes on equal sexual relationships.

H4: Female-oriented dating sims playing years (a) and average playing hours per week (b) will positively correlate with romantic beliefs.

H3 and H4 examine the second-order cultivation effects, which predicted that higher game exposure correlates with a higher endorsement for an equal or female-initiative sexual relationship and idealized romantic relationships. Results show that participants who play more years are more likely to agree with equal gender attitudes on sexual relationships ($r=.16$, $p<.01$) and disagree with the ideology of romance ($r=-.19$, $p<.01$). The average weekly playing hours are positively correlated to the endorsement of romantic beliefs ($r=.17$, $p<.01$). And there is no significant correlation between playing hours and gender attitudes. Thus, for H3 and H4, only H3a and H4b are supported.

Playing year is an important indicator in cultivation studies, however, only one of the four hypotheses was supported. To better understand the relationships between playing years and the dependent variables, the researcher ran an analysis of variance to compare the means of different playing year groups. Participants were set into three groups, which are one year to two years (43.7%), three to four years (31.3%), and five to 10 years (25%). The results show that, among the three groups, there are significant differences on the means of PAR ($df=2$, $F=6.17$, $p<.01$), PCR ($df = 2$, $F = 8.37$, $p<.001$), and romantic beliefs ($df=2$, $F=11.75$, $p<.001$), and the differences on gender attitudes nearly meet statistical significance ($df=2$, $F=2.82$, $p=.06$). But there is no significant difference on average playing hours per week. As shown in Figure 3, participants with three to four years playing experience have the highest PAR, PCR, and romantic beliefs, while participant with five to 10 years playing experience have the highest agreement on equal gender attitudes.

H5: PAR will positively correlate with gender attitudes on equal sexual relationships.

H6: PCR will positively correlate with gender attitudes on equal sexual relationships.

H7: PAR will positively correlate with romantic beliefs.

H8: PCR will positively correlate with romantic beliefs.

H5 to H8 explore parasocial relationship's influence on attitudes change. PCR has a positive relationship with both gender attitudes ($r=.21$, $p<.001$) and romantic beliefs ($r=.49$, $p<.001$), while PAR was only positively associated with romantic beliefs ($r=.58$, $p<.001$). In addition, there is a statistically significant relationship between PAR and PCR ($r=.53$, $p<.001$). Accordingly, H6, H7, and H8 are supported.

In conclusion, among the first eight hypotheses, more than half are supported. The bivariate correlation results are presented in Table 2. Average game playing hours per week, romantic beliefs, and PAR/PCR correlate with each other.

RQ3: How do individual differences (age, education, income, relationship status) relate to the game exposure, PSR, gender attitudes, and romantic beliefs?

To address the research question of how individual difference affects the core variables, a bivariate correlation test and an independent-samples t-test were employed. According to the results, as participants' ages increase, they have better relationship with their game avatars ($r=.18, p<.01$) and are more likely to believe in romantic ideology ($r=.16, p<.01$), but are less likely to approve equal sexual relationships ($r=-.18, p<.01$). Participants' income was associated with player-avatar relationships ($r=.27, p<.001$) and romantic beliefs ($r=.19, p<.01$) in a positive way, while education correlated with an equal gender attitudes on sexual relationships ($r=.18, p<.01$).

More than half of the respondents in the sample are single or students, thus, the relationship status was recoded into a single group and non-single group who are in a relationship or married, and occupation status was recoded into a student group and non-student group who are employed and unemployed. A two-tailed t-test was employed to analyze the mean difference between these two dichotomous variables. The single group has significantly weaker player-avatar relationships (mean single=4.49, mean non-single=5.08, $t=-4.18, df=282, p<.001$) and is less likely to believe in romantic ideology (mean single=4.86, mean non-single=5.53, $t=-4.35, df=282, p<.001$) than the non-single group. The student

group has significantly weaker player-avatar relationships (mean student=4.52, mean non-student=5.05, $t=-3.66$, $df=282$, $p<.001$), fewer romantic beliefs (mean student=4.88, mean non-student=5.53, $t=-4.08$, $df=282$, $p<.001$), and higher endorsement of equal gender attitudes (mean student=5.97, mean non-student=5.61, $t=3.67$, $df=282$, $p<.001$) than the non-student group. However, none of the demographic variables relate to both independent variables and dependent variables. Thus, no control variable was added in the latter hierarchical linear regression models.

Multivariate Analysis

RQ1: How do PSRs affect the relationships between female-oriented dating sims exposure and gender attitudes on equal sexual relationships?

Based on the previous correlation test and t-test, game exposure does not relate to gender attitudes and PSR at the same time. However, linear regression models with all variables that significantly correlate with gender attitudes were built to better predict participants' endorsement of equal gender attitudes. As shown in Table 3, in the Model 3, education ($\beta = .18$, $p < .01$), playing years ($\beta = .14$, $p < .05$), and PCR ($\beta = .21$, $p < .001$) predict gender attitudes in a positive way. The fully specified model is statistically significant ($F=9.74$, $p<.001$) and explains 15% of the variance of gender attitudes (see Table 3.).

RQ2: How do PSRs affect the relationships between female-oriented dating sims exposure and romantic beliefs?

The researcher further explored the effects of PAR and PCR between weekly playing hours and romantic beliefs through a hierarchical linear regression analysis.

In the total sample, average playing hours per week ($\beta = .17, p < .01$) is significantly associated with players' romantic beliefs in Model 1. But it only explains 3% of the variance in romantic beliefs. In Model 2, PAR ($\beta = .57, p < .001; \Delta R^2 = .22, p < .001$) and PCR ($\beta = .48, p < .001; \Delta R^2 = .22, p < .001$) are significantly associated with romantic beliefs and changed R-squared values. When PAR was added, the standardized coefficient of playing hours decreased to .06; when PCR was added, the standardized coefficient of playing hours decreased to .07. The slope of average playing hours per week is no longer significant in Model 2, which indicates that both PAR and PCR fully mediate the relationship between playing hours and romantic beliefs (see Table 4. and Table 5.).

Further analyses divided respondents into two groups of new players with one to two years playing experience and experienced players with three or more years playing experience. Among experienced players, however, playing hours do not relate to the romantic beliefs, thus the mediation effects cannot be tested. In the new players group, average playing hours per week ($\beta = .26, p < .01$) is a significantly predictor players' romantic beliefs in Model 1. In Model 2, PAR ($\beta = .69, p < .001; \Delta R^2 = .45, p < .001$) and PCR ($\beta = .57, p < .001; \Delta R^2 = .29, p < .001$) are significantly associated with romantic beliefs and changed R-squared values. When adding PAR or PCR in Model 2, the standardized coefficient of playing hours decreased and is no longer significant (see Table 4. and Table 5.). Thus, the mediation effects of PAR and PCR still exist.

Based on the relationship status, this study splits the sample into single group and non-single group including people who are in a relationship or married. Among single respondents, the standardized coefficient of playing hours decreased from .15 to .08 in PAR's model and .04 in the PCR model. Adding PAR ($\beta = .53, p < .001; \Delta R^2 = .28, p < .001$) and PCR ($\beta = .47, p < .001; \Delta R^2 = .21, p < .001$) in Model 2 significantly improves the R-squared values. Among people who are not single, in PAR models, the standardized coefficient of playing hours decreased from .23 to .04, and PAR ($\beta = .58, p < .001; \Delta R^2 = .30, p < .001$) is an important predictor of romantic beliefs. However, in PCR models, playing hours are significantly associated with romantic belief in both Model 1 ($\beta = .23, p < .01$) and Model 2 ($\beta = .20, p < .05$). Compared to Model 1, playing hours per week has a smaller coefficient with romantic beliefs in Model 2 and PCR ($\beta = .48, p < .001; \Delta R^2 = .23, p < .001$) significantly changed R-squared value. Therefore, PCR partially mediated the relationship between playing hours per week and romantic beliefs.

Summary

The survey results show that playing years only relate to gender attitudes on sexual relationships. Meanwhile, the variable average playing hours per week is associated with PAR, PCR, and romantic beliefs, which is consistent with the hypotheses. However, contrary to the researcher's assumptions, players who play more years have a weaker relationship with their game avatar and are less likely to believe in idealized romance. PCR predicts both gender attitudes and romantic beliefs and PAR predicts romantic beliefs. Additionally,

weekly playing hours no longer significantly correlate with romantic beliefs when adding PAR and PCR in the hierarchical linear regression models. As for other individual difference, age correlates with PAR, gender attitudes, and romantic beliefs; income relates to PAR and romantic beliefs, and education predicts gender attitudes on sexual relationships.

Chapter 5: Discussion

This study has investigated the relationships between dating sims exposure, parasocial relationships (PSR) including player-avatar relationship (PAR) and player-character relationship (PCR), gender attitudes on sexual relationships, and romantic beliefs among female players. This chapter discusses the contributions, implications, limitations, and future studies based on the current findings.

Implications and Contributions

Developments in Cultivation Theory

This study aims to test second-order cultivation effects of female-oriented dating sims. Gerbner and Gross (1976) compared cultivation effects between heavy users and light users. Later, the survey-based research developed cultivation studies and examined the relationships between media consumptions and the reported attitudes or beliefs among participants (Morgan, Shanahan, & Signorielli, 2015). In these studies, media exposure was commonly measured by amount of time of media usage in a certain period (Ivory, 2013; MoeVan Mierlo & Van den Bulck, 2004; Yang, Salmon, Pang, & Cheng, 2015; etc.). However, the proposed relationships were weak or even disconfirmed in many studies (Morgan & Shanahan, 1999; Potter, 2010). This study also failed to associate gender attitudes on sexual relationships with female-oriented dating sim's consumption. Though playing hours per week positively correlated with the endorsement of romantic beliefs, which was not found in the previous

study (Song & Fox, 2016), this relationship is no longer significant when taking parasocial relationships into account. These results may indicate that the difference between heavy and light users is not only the gap in the quantity of time investment but also how deeply they involve in the virtual media world. It means that heavy users will have higher level of media involvements, which are “cognitive, affective, and behavioral participation during, and because of, media exposure” (Rubin & Perse, 1987, p. 246).

Brown (2015) listed PSR as an important indicator of audience involvement with media persona. In this study, two mediators of parasocial relationships, player-avatar relationships and player-character relationships, were added between playing hours per week and romantic beliefs, and they explain 32% and 22% of the variance in participants’ romantic beliefs respectively. This finding verifies the former assumption that heavy users should have both higher levels of consumption and more media involvement than light users, and thus, their attitudes are more likely to change during the cultivation process.

Gerbner and his colleagues (1976) insisted that the cultivation effect is a consequence of a long-term, cumulative exposure to the total symbolic media. Therefore, this study also collected data of the number of years that participants have been exposed to female-oriented games. As posited, playing years positively correlated with an equal gender attitudes on sexual relationships in this study. These results indicate that long-term players might be affected by female-oriented dating sims. It is also possible that people who support gender equality might be more loyal to the game. Based on the current research and analytical method, however, it is hard to tell whether participants’ attitudes lead them to play this kind

of game or whether game exposure formed their attitudes. However, this finding is consistent with cultivation theory because “cultivation is a continual, dynamic, ongoing relationship, not a unidirectional flow of influence from television to viewers.” (Morgan, Shanahan, & Signorielli, 2015, p.682).

It is unexpected that playing years negatively correlated with romantic beliefs, and players with medium playing experience have the most romantic ideology. In addition, among experienced players with more than two years of game experience, weekly game consumption does not correlate significantly with romantic beliefs or parasocial relationships. According to these results, new players are more likely to be affected by game consumption than experienced players, even if they have a similar amount of weekly playing hours. Gerbner and his colleagues (1980) suggested that cultivation effects override any other factors among heavy users, which is known as the “mainstreaming” effect. One important assumption in their study is that media present a coherent virtual world, which is “mean world syndrome” (Gerbner et al., 1980). In the new media age, however, people rarely view or share the same media contents in the digital environment (Bennett, & Iyengar, 2008). Just one decade later after the “mainstreaming” assumption, one study found that the content themes and cultivation effects varied among different media platforms (Perse, Ferguson, & McLeod, 1994). In line with many other studies (Ellithorpe, Brookes, & Ewoldsen, 2016; Good, 2009; Singer, 2018), the current findings challenge the idea of “mainstreaming” and suggests that there are more important factors than media consumption that affect users’ perceptions and attitudes.

Given the weak evidence and limitations of the traditional cultivation theory, scholars brought a cognitive perspective to help interpret cultivation effects:

we all learn the values, norms, and stereotypes disseminated by television primarily by growing up and living in this specific culture; heavy viewing, then, does not involve any “new learning” of these beliefs and outlooks, but instead provides “the repeated instantiation of some stereotypes by their exemplars” (Hawkins, Pingree, & Adler, 1987, p.575)

They did not deny the media effects of heavy exposure, but viewers’ cognitive learning ability including “self-organizing, proactive, self-reflecting, and self-regulating” (Bandura, 2010), as well as their social environment, should be considered when assessing cultivation effect. Later, several studies examined the cognitive process in the cultivation mechanism. For example, through an experiment, Shrum (2010) found that cultivation effects were confirmed in heuristic information processing but eliminated in a systematic information processing. It may help to explain the current results, because experienced players, who have more game experience than new players, may view game content more critically and process game information differently, and therefore game consumption may have less influence on them.

In conclusion, some results here are consistent with the cultivation theory. Additionally, the researcher invited media involvements and a cognitive perspective to explain the unanticipated results and develop cultivation studies. It is a tendency of moving into micro (Potter, 2014) that a number of cultivation studies have moved to a specific genre of media (Morgan & Shanahan, 2010), a deviation from Gerbner’s (1976) original intention to study the macrolevel media effects of a systematic virtual world. Therefore, more indicators should

be controlled for when examining viewers' perceptions, beliefs, or attitudes from a single medium exposure. Based on the current findings, PSR is a more important contributor than game consumption in predicting players' attitudes and beliefs. The researcher suggests focusing on media involvements when testing media effects. Furthermore, the cognitive mechanism can be employed to understand unsupported hypotheses and future cultivation studies.

Developments in PSR Theory

This study applied the PSR theory to examine how players' relationships with in-game avatars and characters relate to their attitudes and beliefs. It was found that both PAR and PCR associate positively with an endorsement of romantic beliefs and explain a high degree of variance. PCR also correlated with gender attitudes on sexual relationships as predicted. Even among experienced players whose romantic beliefs are not significantly predicted by game exposure, there are still significant associations between PSRs and romantic beliefs. These findings are in accordance with previous studies (Bond & Drogos, 2014; Kistler & Lee, 2009; Song & Fox, 2016;) and might provide support for the assumption that PSR has an impact on attitudes and behavioral changes (Hoffner & Cohen, 2012; Schiappa, Gregg, & Hewes, 2005). Though causality cannot be verified due to the nature of cross-sectional survey in this study, these correlations suggest that playing female-oriented dating sims have benefits by reducing the traditional social norm that men should always initiate sexual relationships and PCR may promote an equal gender attitude.

Further, a possible mediation effect of PSRs on the relationship between weekly game consumption and romantic beliefs was found. First, weekly playing hour as an independent variable correlated with both PSRs and romantic beliefs; second, there was a significant link between PSRs and romantic beliefs; third, weekly playing hour no longer predicted romantic beliefs when controlling PSRs in the hierarchical linear regression models. These findings are consistent with Baron and Kenny's (1986) suggestions of testing mediation effects, though the directions among three variables were not tested in the current data analysis. PSRs had a greater impact than weekly game exposure in predicting romantic beliefs, among which PAR explained the most variance with the highest standardized coefficient beta. This result can be explained with the social learning theory that people learn through modeling and observation (Bandura & Walters, 1977). In this study, the female-oriented dating sim is an observational learning site of dating, and in-game characters are models. Similarity identification and wishful identification are two subscales to measure player-avatar relationship. Thus, participants who got higher score in PAR scale are more likely to "merge with the character" (Cohen, 1999, p.329) and perceive the avatar as their model. And PCR as an imaginary friendship or even romantic relationship (Mikulincer & Shaver, 2007; Tukachinsky, 2010) can also be imitated in players' real lives. The in-game avatar believes in true love and characters are perfect partners, which corresponds with the ideology of romance; notably, significant associations were found between romantic beliefs and PSRs. From this perspective, the researcher suggests that scholars can also integrate PSR theory with social learning theory, as well as cultivation theory, to better understand media effects.

This study also extends the PSR theory by investigating PSRs with virtual in-game characters and placing them into the two categories of PAC and PCR. The results confirmed that human beings can build relationships with virtual characters, which may affect their attitudes and beliefs. Overall, participants got a higher score on PCR than PAR. Besides, some differences were found between PAR and PCR based on the participant's relationship status. Single players have lower PAR than those players in a relationship. PCR was not found significantly different between the two groups, but it did not fully mediate game exposure's effect on romantic beliefs in the non-single group. Additionally, PCR correlated with gender attitudes, while PAR was negatively predicted by playing years. Both identifications in PAR (Hoffner, 1996; Cohen, 2001) and attachments in PCR (Greenwood & Long, 2011;) have been discussed in previous PSR studies (Brown, 2015; Klimmt, Hartmann, & Schramm, 2006), however, most of them picked only one perspective and did not distinguish the two types of PSR. On the other hand, though PAR and PCR are different, they are significantly correlated in this study. This correlation may be explained by the Proteus Effect, which indicates that players' self-representation in the virtual world will affect their behaviors (Yee & Bailenson, 2007). It is possible that when players get a high PAR, they are more likely to identify with the representation of the game avatar, thus affecting their interactions with other game characters, and PCR increases as a result. Future studies can test whether PAR will have a prior effect on PCR. Due to the confirmed differences and correlations in the current study, there is a need to make a clear boundary between PAR and PCR, as well as studying their relationships and their impacts on media users.

Video Games: Educational-Entertainment Media

This study examined two attitudes among female players of dating sims. The first one is the gender attitudes on the female initiative in dating, which represents an equal gender attitude compared to traditional male-dominated sexual relationships. Based on the current data, respondents with higher education are more likely to support an equal gender attitude, and young generations have stronger agreement on female initiative in sexual relationships than elder generations in China. It was anticipated that playing years and PCR related to higher level of support for the female initiative in sexual relationships. Though there is still a concern about the media's negative effects of presenting traditional sexism (Gill, 2002), the media's function to promote gender equality has been discussed in some studies, such as reducing sexual prejudice toward gay men (e.g., Schiappa, Gregg, & Hewes, 2006) and improving positive attitudes or behaviors toward women (e.g., Greitemeyer, Hollingdale, & Traut-Mattausch, 2015). This study only focused on a sub-genre of equal gender attitudes, but there are possibilities to explore more educational and beneficial influences on overall gender equality generated from female-oriented video games.

The second tested attitude was romantic beliefs, which represents a player's endorsement of an idealized romantic relationship. Romanticism was found to be positively correlated with relationship quality including love, satisfaction, and commitment (Sprecher & Metts, 1999). Consistently, this study found that single players have a significant lower romantic belief than non-single players. Playing female-oriented dating sims and in-game

relationships also was associated with higher levels of romanticism. It is possible that dating sims play an entertainment role through virtual satisfied dating experience.

The survey shows that 25% of participants play female-oriented games every day and mobile phone is the most popular device with 85.6% occupancy. Women, in the current society, are also yearning to be visible and actively seek a prominent role in the video game culture (Harvey & Fisher, 2015). The emerging female-oriented games, including dating sims, play an important entertainment role in women player's life, as well as advance gender diversity and gender equality in the gaming culture.

Limitations

Although several significant results were found, this study is not without limitations. First, though the participants were recruited from three different platforms, there was a relatively small sample size which is dominated by young single students. On the one hand, it may disclose some characteristics of the players in female-oriented dating sims. On the other hand, the lack of diversity in demographics may affect the results. Second, the researcher deleted some items from the original scales measuring PAR, PCR, romantic belief, and gender attitudes on sexual relationships. Even though the employed shortened scales' alphas exceeded the reliability level, some useful information might be lost. Third, the causality cannot be verified based on the nature of cross-sectional survey method; thus, this study cannot determine attitude changes during the cultivation process. Future studies could run a longitudinal survey and experiments to test the cultivation effects in female-oriented dating

sims. Fourth, the current analytical method is not powerful enough to test mediation effects, because hierarchical linear regression cannot tell the directions of effects among independent variables, control variables, and dependent variables. The current findings show that PSR plays an important role in the relationships between game exposure and romantic beliefs, and therefore, future research can run the path analysis or structural equation model to demonstrate the mediation effects.

In the end, there is shortage of empirical evidence from content analysis of female-dating oriented dating sims to show that the proposed attitudes and beliefs are consistent with game contents. Gerbner and Gross (1976, p.180) suggested that “we cannot presume consequences without the prior investigation of content, as the conventional research paradigm tends to do.” Therefore, this study is still an incomplete project from a cultivation perspective. The researcher suggests future studies to fill this research gap.

Future Studies

The researcher suggests some directions for future studies based on the current findings and limitations. This study found an unexpected result that weekly game exposure did not relate to any variables of PSRs, gender attitudes, and romantic beliefs among experienced players with more than two years of game experience. Future studies could conduct an in-depth interview with members of this group to more fully understand how they engage with romantic media. It is also important to conduct a content analysis of dating sims to depict this virtual world with empirical evidence. Male-oriented games were ignored in this study, and

future research could compare the contents and impacts among dating sims with a clear gender target. A cross-gender study may disclose the different preferences, emotions and relationships toward games and virtual characters, and how they vary by genders. At last but not least, as “cultivation analysis is ideally suited to multinational and cross-cultural comparative study” (Gerbner et al., 2002, p. 58), scholars may investigate the cultivation effects of romantic media in eastern and western cultures. In general, western culture is different from Asians in gender attitudes and romantic beliefs (Chia, Moore, & Lam, 1994; Shi & Scharff, 2011; Gao, 2001). The social distance among western players and Asian culture-based games might be a prominent indicator of cultivation effects.

Tables

Table 1
Participant Profile for the Study (n =284)

Sample Characteristics	Valid N	Valid %
	Sample	Sample
Age	284	100%
Mean = 21.49; SD = 3.47		
Education	284	100%
Undergraduate	31	10.9
2-year degree	59	20.8
4-year degree	176	62.0
Graduate degree	16	5.6
Other	2	.7
Monthly Income	284	100.0%
¥3,000 or under	188	66.2
¥3,000.1 to ¥6,000	58	20.4
¥6,000.1 to ¥9,000	19	6.7
¥9,000.1 to ¥12,000	8	2.8
¥12,000.1 to ¥15,000	6	2.1
¥15,000.1 and higher	5	1.8
Relationship Status	284	100%
Single	194	68.3
In a Relationship	79	27.8
Married	11	3.9
Employment Status	284	100%
Student	200	70.4
Unemployed	76	26.8
Employed	6	2.1
Other	2	.7
Internet Usage Per Day	284	100%
1 hour to 3 hours	46	16.2
4 hours to 6 hours	127	44.7
7 hours to 9 hours	71	25.0
More than 9 hours	38	13.4
Other	2	.7

Table 2

Correlation Table (n = 284)

	M	SD	α	1	2	3	4	5	6
1. Playing years	3.26	2.14		1					
2. Playing hours per week	10.29	8.15		-.01	1				
3. Player-Avatar relationships	4.68	1.14	.85	-.15*	.19**	1			
4. Player-Character relationships	5.71	.95	.88	-.00	.20**	.53***	1		
5. Gender Attitudes	5.87	.78	.83	.16**	.03	.08	.21***	1	
6. Romantic Beliefs	5.07	1.25	.91	-.19**	.17**	.58***	.49***	.04	1

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Table3
 Linear Regression Models Predicting Gender Attitudes (n = 284)

	Model1		Model2		Model3		
	b	S.E.	b	S.E.	b	S.E.	β
<i>Block 1: Demographics</i>							
-Age	-.03	.02	-.04	.02	-.03	.02	-.14
-Education	.22***	.06	.20**	.06	.19**	.06	.18
-Occupation Status ^d (ref. = student)	-.18	.15	-.16	.15	-.21	.15	-.12
<i>Block 2: Game exposure</i>							
Playing years			.05*	.02	.05*	.02	.14
<i>Block3: Player-Character Relationship</i>							
Player-Character Relationship					.17***	.05	.21
F	9.05**		8.38***		9.74***		
R ²	.088		.11		.15		
R ² _{adj}	.079		.095		.13		

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

^d Dummy variable. Occupation Status (Student: 0, Non-student: 1).

Table 4

Hierarchical Regression Model predicting Romantic Beliefs by Playing hours per week and PAR (n =284)

	Total Sample (n=284)		New Players (n=124)		Single (n=194)		Non-Single (n=90)	
	Model1	Model2	Model1	Model2	Model1	Model2	Model1	Model2
<i><u>Block1: Game Exposure</u></i>								
Playing hours per week	.17**	.06	.26**	.08	.15*	.08	.23*	.04
<i><u>Block2: Player-Avatar Relationship</u></i>								
PAR		.57***		.69***		.53***		.58***
ΔR^2	.03**	.32***	.07**	.45***	.02*	.28***	.06*	.30***
Total R^2_{adj}		.34***		.50***		.30***		.34***

Note: Entries are standardized regression coefficients.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 5

Hierarchical Regression Model predicting Romantic Beliefs by Playing hours per week and PCR (n = 284)

	Total Sample (n=284)		New Players (n=124)		Single (n=194)		Non-Single (n=90)	
	Model1	Model2	Model1	Model2	Model1	Model2	Model1	Model2
<u><i>Block1: Game Exposure</i></u>								
Playing hours per week	.17**	.07	.26**	.07	.15*	.04	.23*	.20*
<u><i>Block2: Player-Character Relationship</i></u>								
PCR		.48***		.57***		.47***		.48***
ΔR^2	.03**	.22***	.07**	.29***	.02*	.21***	.06*	.23***
Total R^2_{adj}		.24***		.35***		.22***		.27***

Note: Entries are standardized regression coefficients.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 6

Frequency of respondents' favorite female-oriented dating sims (n = 284)

Female-oriented Dating sims	N
love and producer 恋与制作人	70
Hakuoki 薄桜鬼	18
100 sleeping princes & the kingdom of dreams 梦 100	15
Diabolik Lovers 魔鬼戀人	15
AMNESIA 失憶症	14
Chounodoku Hananokusari 蝶の毒 華の鎖	10
KenGaKimi 剣が君	9
Alice in the Country of Hearts ハートの国のアリス	8
Orange Light 橙光游戏	6
Collar x Malice	5
Mystic Messenger 수상한메신저	5
Meiji Tokyo Renka 明治東京恋伽	5
Wand of Fortune ワンド オブ フォーチュン	4
Uta no Prince-sama うたの☆プリンスさまっ♪	3
MakeS 早安我的少年 Sei	3
OZMAFIA!!	3
Jooubachi no Oubou 女王蜂の王房	3
Refrain 被囚禁的掌心	3
Jujian Love 遇见逆水寒	3

-ricordo- ピオフィオーレの晩鐘	3
Ensemble Stars 偶像梦幻祭	3
Under the Moon 月下绮谭	3
Code: Realize 創世的公主	2
Libra of Nil Admirari 冷然的天秤	2
Starry☆Sky 星座彼氏	2
Juuzo Engi: Engetsu Sangokuden 十三支演义	2
Getsuei no Kusari 月影の鎖	2
NORN9	2
Fashion Cloudy 云裳羽衣	2
Tokimemo 心跳回忆	2
WIND BOYS！ ウインドボーイズ！	1
Scared Rider Xechs	1
A3!	1
ICHU 偶像进行曲	1
World of Love 恋世界	1
Meng Fu Deng 梦浮灯	1
Meng Jian Ji 梦间集	1
Shinigami to Shoujo 死神与少女	1
Clock Zero 终焉之一秒	1
A beast piece 灰鷹のサイケデリカ	1

Brothers Conflict 兄弟战争	1
Prince of Stride 疾走王子	1
Black Wolves Saga	1
Asaki Yume Mishi 晨曦时梦见兮	1
Primo Passo 金色琴弦	1
Shiei no Sona-Nyl ~what a beautiful memories~ 紫影的索纳尼尔	1
First Boyfriend 初彼	1
Hana Awase 華アワセ	1
Re:BIRTHDAY SONG 死神彼氏	1
Boy Kira 临时男友	1
Sangoku Rensenki 三国恋戦記	1
Sengoku Night Blood 战刻夜想曲	1
Akazukin to Mayoi No Mori 赤ずきんと迷いの森	1
La storia della Arcana Famiglia 聖靈家族	1
Geten no Hana 下天之華	1
Bara ni Kakusareshi Verite 薔薇に隠されしヴェリテ	1
Ture or lie? 誰にでも裏がある	1
Hiiro no Kakeru 緋色の欠片	1
Touken Ranbu 刀劍亂舞	1
Bad Apple Wars	1
Haruka: Beyond the Stream of Time 遙遠時空	1

Other	26
total	284

Figures



Figure 1. Example of female-oriented dating sims: *Love and Producer*



Figure 2. Example of female-oriented dating sims: *Alice in the Country of Hearts*



Figure 3. Example of female-oriented dating sims selections: *Philosophic Love*



Figure 4. Example of female-oriented dating sims gameplay: *Touken Ranbu Online*



Figure 5. Example of VR female-oriented dating sims: *Refrain*



Figure 6. Example of game avatar: *Amnesia*



Figure 7. Example of game avatar: *Love and Producer*



Figure 8. The First Female-Oriented Dating sim in 1994: Angelique

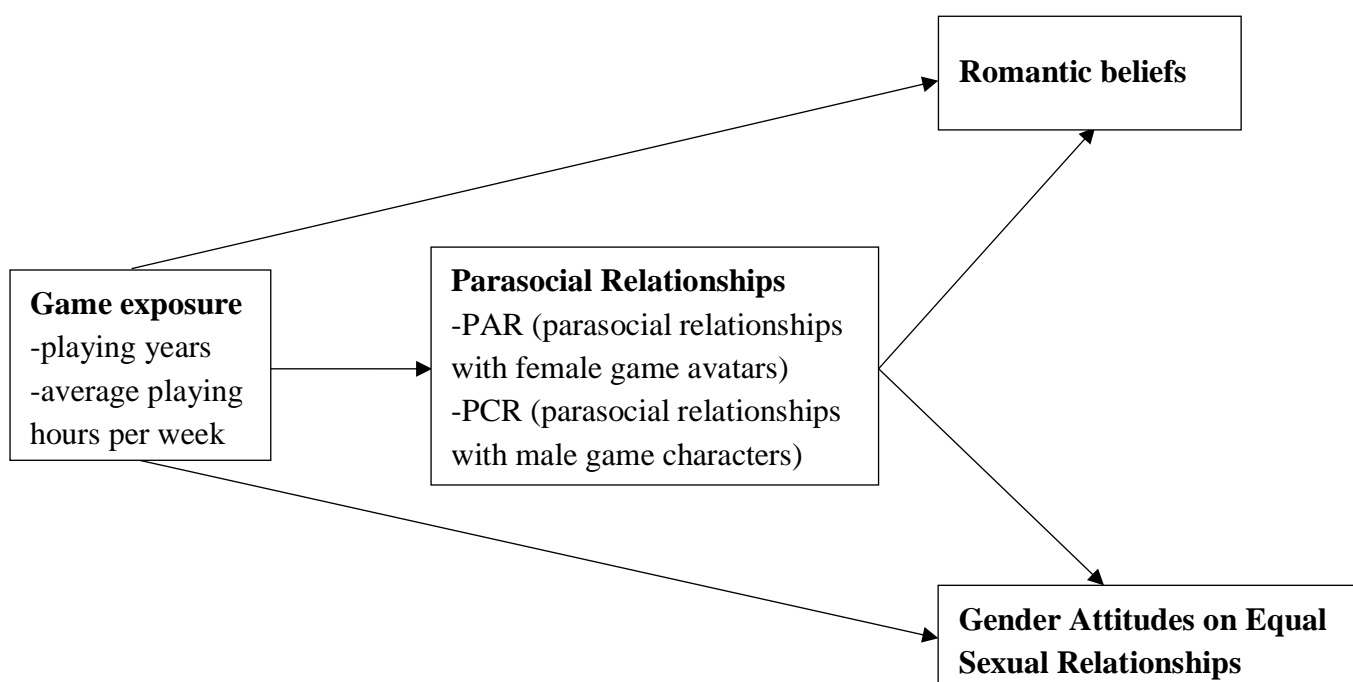


Figure 9. Conceptual Model

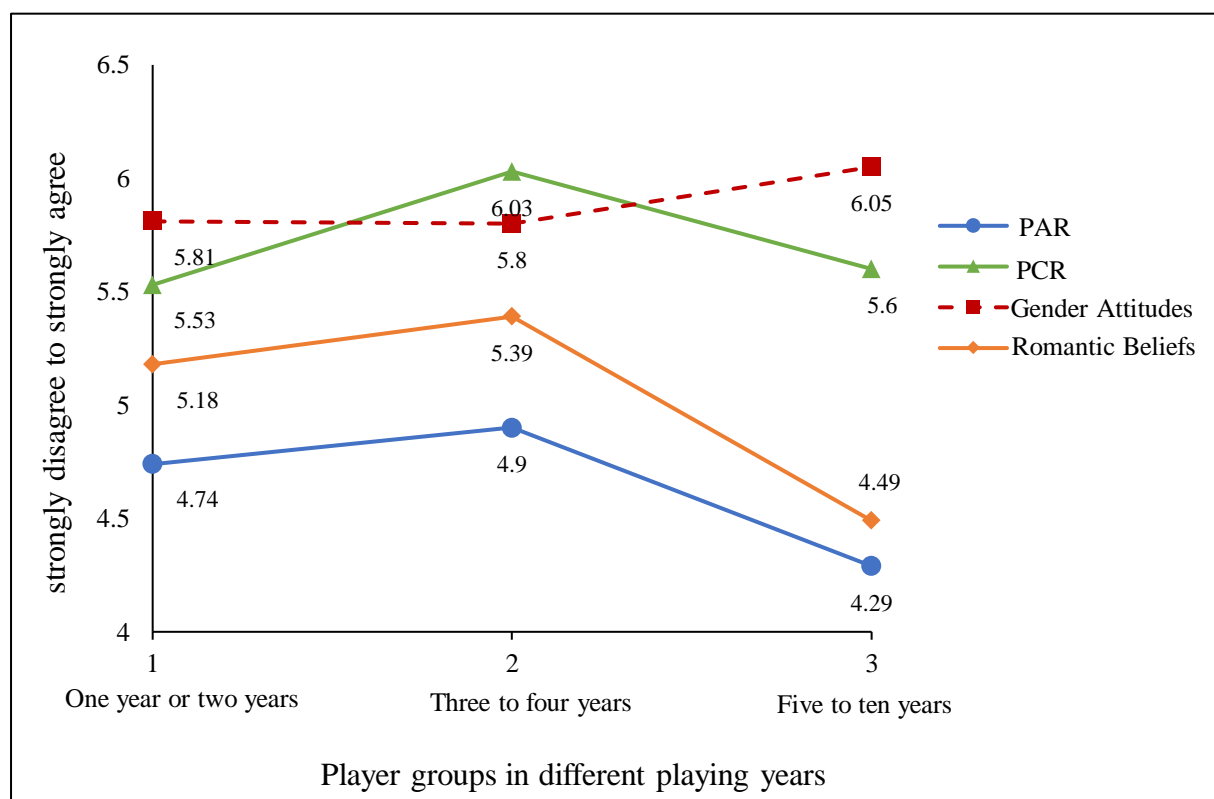


Figure 3. Differences among playing year groups

Appendix A Instruments

Parasocial Relationship Scale (Tukachinsky,2010):

Please indicate your agreement with the following statements, with 1 being “Strongly Disagree” and 7 being “Strongly Agree.”

1. If X was a real person, I could have disclosed negative things about myself honestly and fully (deeply) to him/her.
2. If X was a real person, I could have disclosed a great deal of things about myself to X.
3. Sometimes, I wish I knew what X would do in my situation.
4. If X was a real person, I could have disclosed positive things about myself honestly and fully (deeply) to him/her.
5. Sometimes, I wish I could ask X for advice.
6. I think X could be a friend of mine.
7. I find X very attractive physically
8. I think X is quite handsome/pretty.
9. X is very sexy looking.
10. X fits my ideal standards of physical beauty/handsomeness.
11. I want X physically, emotionally, and mentally.
12. For me, X could be the perfect romantic partner.
13. Sometimes I think that X and I are just meant for each other.
14. I wish X could know my thoughts, my fears, and my hopes.
15. X influences my mood.
16. I adore X
17. I idealize X
18. If X was a real person I would be able to count on X in times of need.
19. If X was a real person I would give him/her emotional support.
20. If X was a real person he/she would able to count on me in times of need.
21. If X was a real person I would will to share my possessions with him/her.
22. If X was a real person I could trust him/her completely.
23. If X was a real person I could have a warm relationship with him/her.
24. I want to promote the well-being of X.

Player Avatar Identification Scale (Van Looy, Courtois, De Vocht, & De Marez, 2012):

Please indicate your agreement with the following statements, with 1 being “Strongly Disagree” and 7 being “Strongly Agree.”

Similarity Identification

1. My character is like me in many ways
2. My character resembles me
3. I identify with my character
4. My character is an extension of myself
5. My character is similar to me
6. I resemble my character

Embodied Presence

7. When I am playing, it feels as if I am my character
8. I feel like I am inside my character when playing
9. In the game, it is as if I become one with my character
10. When I am playing I am transported into my character

11. When playing, it feels as if my character's body becomes my own
12. In the game, it is as if I act directly through my character

Wishful Identification

13. If I could become like my character, I would
14. I would like to be more like my character
15. My character is an example to me
16. My character is a better me
17. My character has characteristics that I would like to have

Gender role attitudes on sexual relationships (Ashmore, Del Boca, & Bilder, 1995):

Please indicate your agreement with the following statements, with 1 being "Strongly Disagree" and 7 being "Strongly Agree."

1. I approve of a woman taking the first step to start a relationship with a man.
2. The man should always be the one to initiate sex with a woman. (R)
3. I approve of a woman calling a man she is interested in.
4. The initiative in asking for a date should come either from the man or the woman.
5. In a relationship, the woman as well as the man should be free to initiate sexual activity.
6. I approve of a woman taking the aggressive role during sexual intercourse relationship.
7. Women should be free to express themselves sexually.
8. The initiative in dating should come from the man.
9. Women should take the passive role in courtship.
10. A woman should allow the man to take charge of their sexual relationship.
11. Women should have the same sexual freedom as men.

Romantic Beliefs Scale (Sprecher & Metts, 1989):

Please indicate your agreement with the following statements, with 1 being "Strongly Disagree" and 7 being "Strongly Agree."

1. I need to know someone for a period of time before I fall in love with him or her.
2. If I were in love with some, I would commit myself to him or her even if my parents and friends disapproved of the relationship.
3. Once I experience 'true love', I could never experience it again, to the same degree, with another person.
4. I believe that to be truly in love is to be in love forever.
5. If I love someone, I know I can make the relationship work, despite any obstacles.
6. When I find my 'true love' I will probably know it soon after we meet.
7. I'm sure that every new thing I learn about the person I choose for a long-term commitment will please me.
8. The relationship I will have with my 'true love' will be nearly perfect.
9. If I love someone, I will find a way for us to be together regardless of the opposition to the relationship, physical distance between us or any other barrier.
10. There will be only one real love for me.

11.If a relationship I have was meant to be, any obstacle (e.g. lack of money, physical distance, career conflicts) can be overcome.

12.I am likely to fall in love almost immediately if I meet the right person.

13.I expect that in my relationship, romantic love will really last; it won't fade with time.

14.The person I love will make a perfect romantic partner; for example, he/she will be completely accepting, loving, and understanding.

15.I believe if another person and I love each other we can overcome any differences and problems that may arise.

Appendix B Questionnaire

Consent form

Did you play female-oriented dating sims last month? (Quit the survey if choosing No)

Yes No

Did you reach 18 years old today? (Quit the survey if choosing No)

Yes No

Dating sim experiences

How many years have you been playing female-oriented dating sims?

About how many hours per day do you spend playing female-oriented dating sims?

About how many days per week do you spend playing female-oriented dating sims?

On which platform, do you play the female-oriented dating sims?

game console (e.g. PS4) Computer Mobile Phone Other _____

How many female-oriented dating sims have you been played?

1-3 4-6 7-9 more than 9

How many main characters do you prefer in the female-oriented dating sims?

1-3 4-6 7-9 more than 9

How many hours would you like to devote on each female-oriented dating sim?

1-5 6-10 11-15 16-20 more than 20 _____

1. What type of main characters do you like?

2. What is your favorite female-oriented dating sims?

3. Who is your favorite male character in female-oriented dating sims?

(For the following section, items will be randomly presented in each section)

Parasocial Relationship

Please indicate your agreement with the following statements, with 1 being “Strongly Disagree” and 7 being “Strongly Agree.”

Communication

1. If my favorite game character was a real person, I could have disclosed negative things about myself honestly and fully to him/her.
2. If my favorite game character was a real person, I could have disclosed a great deal of things about myself to my favorite game character.

- Sometimes, I wish I could ask my favorite game character for advice.

Physical attraction

- I find my favorite game character very attractive physically.
- My favorite game character does not fit my ideal standards of physical beauty/handsomeness.

Love emotion

- I want my favorite game character physically, emotionally, and mentally.
- For me, my favorite game character could be the perfect romantic partner.
- I do not adore my favorite game character.

Support

- If my favorite game character was a real person, I would be able to count on my favorite game character in times of need.
- If my favorite game character was a real person, I would not give him/her emotional support.
- If my favorite game character was a real person, he/she would be able to count on me in times of need.

Player Avatar Identification

Please indicate your agreement with the following statements, with 1 being “Strongly Disagree” and 7 being “Strongly Agree.”

Similarity identification

- I identify with my avatar
- My avatar is similar to me
- I do **not** resemble my avatar

Embodied presence

- When I am playing, it feels as if I am my avatar
- I feel like I am inside my character when playing
- When I am playing, I am **not** transported into my character

Wishful identification

- If I could become like my character, I would
- I would like to be more like my character
- My character is **not** an example to me

Romantic Beliefs

Please indicate your agreement with the following statements, with 1 being “Strongly Disagree” and 7 being “Strongly Agree.”

Love finds a way

- If I love someone, I know I can make the relationship work, despite any obstacles.
- If I love someone, I will find a way for us to be together regardless of the opposition to the relationship, physical distance between us or any other barrier.

One and only

- I **do not** believe that to be truly in love is to be in love forever.
- I expect that in my relationship, romantic love will really last; it won't fade with time.

Idealization

- The relationship I will have with my ‘true love’ will be nearly perfect.
- The person I love will **not** make a perfect romantic partner.

Love at first sight

- When I find my ‘true love’ I will probably know it soon after we meet.
- I am **not** likely to fall in love almost immediately if I meet the right person.

Gender attitudes toward sexual relationship

Please indicate your agreement with the following statements, with 1 being “Strongly Disagree” and 7 being “Strongly Agree.”

1. I approve of a woman taking the first step to start a relationship with a man.
2. The man should always be the one to initiate sex with a woman.
3. I approve of a woman calling a man she is interested in.
4. The initiative in asking for a date should come either from the man or the woman.
5. In a relationship, the woman as well as the man should be free to initiate sexual activity.
6. I approve of a woman taking the aggressive role during sexual relationship.
7. Women should be free to express themselves sexually.
8. The initiative in dating should come from the man.
9. A woman should allow the man to take charge of their sexual relationship.
10. Women should have the same sexual freedom as men.

Demographics

Please answer the following demographic questions honestly and to the best of your ability:

How old are you as of today? _____

With which gender do you identify?

- Female Male Other _____

What is your current relationship status?

- Single In a relationship Married Divorced Other _____

What is your employment status?

- Employed Unemployed Student Other _____

What is your monthly income? (change the answers)

- Less than ¥3000 ¥3000 - ¥6000 ¥6000.1 - ¥9000
 ¥9000.1 - ¥12000 ¥12000.1 - ¥15000 More than ¥15000

What is the highest level of education you have completed?

- Less than High School High School Some college
 2-year degree 4-year degree Graduate degree

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EDUCATION

Syracuse University Master of Arts in Media Studies Aug 2017– Jun 2019

China Youth University of Political Studies

Bachelor of Arts in Journalism Sep 2013 - July 2017

SKILLS AND LANGUAGE

Software: SPSS, STATE, NVivo, R studio, PS, PR, AU,

English: TOEFL: 105 (R28+L27+S23+W27) GRE: 330 (V160+Q170+AW3.5)

RESEARCH INTEREST AND PROJECTS

Interest: Interactive media, Video game effect, Japanese Animation

Projects:

- An Analysis of the We-chat Account Operation of Legal Report
- News game: The Advanced Practice of Media Convergence
- Interactivity and individual's attention with pet videos on YouTube (co-author)
- Why People Play Traveling Frog: Chinese Anxiety and The Relationship with Virtual Characters
- The Effect of Gender on Perceptions of Twitch Streamer Competence (co-author)

INTERNSHIP EXPERIENCE

Research Assistant in Newhouse, Syracuse University 09/2018-12/2018

Working for Dr. Joon Soo Lim

Intern in New Media, China Central Television (CCTV) | Beijing, China 05/2016-07/2016;12/2016-03/2017

Legal Report, CCTV-1-The most famous legal dissemination column

- Produced news articles, small videos, gave out presents to increase flow rate
- Articles achieved more than 20000 hits and established a successful operation pattern for the Account.

Intern Journalist, Zhejiang Radio & TV Group | Hangzhou, China

07/2014-08/2014

Ranked 1st in Zhejiang Province, 5th in the whole nation

- Conducted on-site interviews and wrote news reports concerned about elevator problems, water conservancy, traffic accidents and temperature forecast, etc.

Intern Website Editor, Self Magazine | Beijing, China

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Co-founded by Conde Nast Publications Inc. and Women of China