CITY UNIVERSITY OF HONG KONG

Adult playfulness and its relationship with humor, subjective happiness and depression: A comparative study of Hong Kong and Mainland China

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LEUNG Chun Lok, Ryan

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Abstract

Playfulness in adult has been shown to be beneficial to different aspects of well-being. Yet, adult playfulness remains an understudied concept, especially in Chinese society. To address this gap in research, this study aimed to investigate adult playfulness and its relationship with humor, subjective happiness and depression among university students from Hong Kong and Guangdong. A total of 325 students were asked to complete a self-administered questionnaire. Results revealed positive correlations between adult playfulness, sense of humor, adaptive humor styles, importance of humor, self humor and subjective happiness. Negative correlation between adult playfulness and self-rating depression was also found. In addition, hierarchical regression analysis showed that the two adaptive humor styles were strong predictors for adult playfulness. Furthermore, the relationship between adult playfulness and subjective happiness was mediated by adaptive humor styles, importance of humor and mother's humor, whereas the relationship between adult playfulness and depression was mediated by adaptive humor styles. This study provided initial details of Chinese playfulness and further confirmed the value of playfulness in psychological well-being. Suggestions for future studies were also discussed.

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"A human being becomes truly human when he plays"

-Friedrich Schiller

1. Introduction and Literature Review

Play – an officially enlisted survival and development right for every child by the United Nations Children's Fund (UNICEF, 2005). There has been little doubt that play has a vital role in the process of human development, especially during one's childhood. Play research investigates play not merely as a pleasurable activity but also discusses the concept behind play, playfulness, which commonly refers to a predisposition to engage in any activity in a more enjoyable manner (Barnett, 2007).

Traditionally, children have been the focus of play and playfulness studies, with less attention being paid to adults. In recent decades, however, an increasing amount of evidence has accumulated and demonstrated the various positive impacts that playfulness has on adults. Highly playful adults have been described as outgoing, humorous and happy (Barnett, 2007). Measurements of adult playfulness have shown to be positively related to indicators of both psychological and physical well-being (Proyer, 2013a) as well as a range of other beneficial outcome variables, such as creativity (Tegano, 1990) and academic achievement (Proyer, 2011). Despite those advantages, playfulness in adults surprisingly remains to be an understudied research area in

psychology (Guitard, Ferland & Dutil, 2005; Proyer, 2012a), and related studies set in Hong Kong or Chinese context in general are even rarer. Therefore, this present study aims to provide details of Chinese adult playfulness, and to seek for further evidence supporting the value of adult playfulness by investigating its relationship with humor, subjective happiness and depression among Hong Kong and Guangdong university students.

1.1 Play and Playfulness in Children

The benefits of play for children have been well-documented. When children are playing, they are interacting with the strange world around them without fear, learning to communicate with other people, building a physically healthy body and developing useful skills to cope with difficulties in life (Ginsburg, 2007). Indeed, decades of researches have demonstrated different forms of play activities as positively related to a child's language abilities (Fekonja, Umek & Kranjc, 2005; Lyytinen, Poikkeus & Laakso, 1997; Tamis-LeMonda & Bornstein, 1994), social competencies (Connolly & Doyle, 1984; Lindsey & Mize, 2000; Newton & Jenvey, 2011), emotional regulations (Lindsey & Colwell, 2013) as well as physical fitness (Pellegrini & Smith, 1998). In addition, Lloyd and Howe (2003) showed that experience of solitary play is related to the ability to think divergently and that, in turn, could facilitate children's coping ability

under stressful situations (Christiano & Russ, 1996).

Not many would argue against the fact that play has the capacity to foster a child's normal development, and in fact, it also has the ability to prevent and improve psychological, behavioral and physical problems (Reddy, Files-Hall & Schaefer, 2005). For instance, play-based intervention has found to be effective in reducing hospital fears (Rae, Worchel, Upchurch, Sanner & Daniel, 1989), darkness phobia (Santacruz, Mendez & Sanchez-Meca, 2006), separation anxiety (Barnett, 1984) and aggressive behaviors (Ray, Blanco, Sullivan, & Holliman, 2009).

While previously mentioned play researches approach play in terms of behaviors or actions, others argue that it is more important to investigate the player's personality characteristic - playfulness, which makes play possible. Playfulness in young children is widely defined as an internal disposition that allows a child to transform any activity into play (Guitard et al., 2005). This is based on the assumption that the child must perceive an activity as play first before he can actually play. Playfulness gives the child the capacity to see a situation or activity as fun and enjoyable, and therefore, play occurs.

Although playfulness is acknowledged for its existence, what qualities constitute such in children has been varied among authors. Lieberman (1965) was one of the pioneers to study playfulness in a group of kindergartners, and she identified five key qualities of playfulness: 1) physical spontaneity - how well a child coordinates and moves his or her body to play; 2) social spontaneity - how a child interacts with others during play; 3) cognitive spontaneity - how well a child is able to use imagination and creativity in play; 4) manifest joy – the child's expressions of enjoyment during play; and 5) sense of humor - generation and appreciation of funny stories or jokes. Barnett (1990) agreed with the inclusion of those five qualities and further developed a valid and reliable measure (Children's Playfulness Scale) for a child's playfulness. Others have proposed different but similar components to develop other measurements. For instance, Ferland (1997) included spontaneity, curiosity, challenge, initiative, pleasure and sense of humor in her assessment of playfulness. Although components differ across authors, pleasure and spontaneity have been suggested to consistently contribute to playfulness in children, while sense of humor and imagination have also been frequently mentioned (Guitard et al., 2005).

Despite the variation of what underlies playfulness in children, the validated measurements of children playfulness have been found to be positively related to a

child's well-being and healthy development. Playfulness allows a child to more easily perceive an activity as play, and it has been revealed that perceiving an activity as play is linked with enhancement in emotional well-being (Howard & McInnes, 2013). Children with high playfulness have been shown to have higher divergent thinking abilities (Lieberman, 1965), more adaptive coping behaviors (Saunders, Sayer & Goodale, 1999), and a confident and imaginative personality (Barnett, 1991). With the evidence showing the positive impact that play and playfulness have on children, one may wonder what becomes of play and playfulness for adults. Does the power of playfulness just disappear when a person gets older?

1.2 Playfulness in Adults

Researches focusing on playfulness in adults are limited. Perhaps it is partially due to the notion that play is a child's occupation (Parham & Primeau, 1997). Indeed, "a man who plays" does not seem to fit our expectations of play as well as "a child who plays" does. It has been suggested that social display of playfulness (or play in general) is more acceptable for children than adults (Lieberman, 1977). In terms of playfulness, however, it has been considered rooted from our personality (Bozionelos & Bozionelos, 1999; Glynn & Webster, 1992) and is relative stable across time (Lieberman, 1977; O'Brien & Shirley, 2001; Proyer, 2013b). As a personality trait, playfulness is likely to

exert its influences in a person's life beyond childhood and one can expect similarities between children and adult playfulness. Solnit (1998) argued that as people grow older, they would give up most of the play activities that they did during childhood and convert these activities into a playful attitude, namely playfulness. Recently, Proyer (2013b) found that playfulness existed in all age groups and demonstrated strong relationship with a list of well-being indicators. Still, adult playfulness remains to be an understudied field in psychology; further investigation on the meaning of playfulness among adults is warranted (Barnett, 2007).

1.3 Conceptualizing and Defining Adult Playfulness

Similar to children playfulness, there has been a lack of consensus when it comes to conceptualizing adult playfulness due to the diversity of related characteristics (Shen, Chick & Zinn, 2014). Barnett (2007) conducted a study with undergraduate focus groups and identified some common qualities between adult and children playfulness. Spontaneity and cheerfulness were found to be descriptors for both children and adult playfulness, but that impulsiveness has been suggested to be the only component shared by the two (Barnett, 2007). In another study, Guitard and associates (2005) found that adult playfulness corresponds greatly to that of children, as it consists of creativity (seen as manifestation of imagination), curiosity, sense of humor, pleasure and spontaneity,

while Glynn and Webster (1992) suggested expressiveness, fun and silliness to be components of adult playfulness.

In spite of differences in what components underlie adult playfulness, its general idea remains consistent across different studies and authors. Adult playfulness is commonly agreed to be an inborn trait that allows individuals to inject enjoyment and entertainment into life situations (Barnett, 2007; Glynn & Webster, 1992; Guitard et al., 2005; Proyer, 2012b). It has been defined as "the predisposition to frame (or reframe) a situation in such a way as to provide oneself (and possibly others) with amusement, humor, and/or entertainment." (Barnett, 2007, p. 955). This working definition provides a basis for later researches and has been applied successfully in developing a well-validated measure as well as investigating the correlates of adult playfulness as a predisposition (e.g. Proyer, 2012b; Proyer, 2013).

Aware of the many characteristics related to adult playfulness in terms of its possible underlying components, current study attempts to assess playfulness globally, instead of dividing it into individual components. In this context, the focus of measurement is on the onset and intensity of playful experiences as well as the frequency of engaging in playful activities (Proyer, 2012b). This approach allows an

overall self-assessment of playfulness, and previous studies that utilized this approach to study adult playfulness and its relationships with a range of outcome variables have shown satisfactory results (e.g., Proyer & Ruch, 2011; Proyer, 2012a; Proyer, 2013a).

1.4 Demographics of Adult Playfulness

In general, there is no gender difference in playfulness among adults across different age groups. Although there is a rare exception reporting inconsistent results (Glynn & Webster, 1992), gender difference cannot be detected in most previous studies (e.g., Bozionelos & Bozionelos, 1999; Glynn & Webster, 1993; Proyer, 2013b). It has been found that playfulness is negatively related to age. For example, Proyer (2012b; 2013b) reported that higher age is linked to decreased overall playfulness.

Therefore, in current study, no gender difference is expected for playfulness, while a minor but significant negative correlation between age and playfulness is anticipated.

1.5 Adult Playfulness and Psychological Well-being

Previous studies consistently revealed that adult playfulness is positively associated with indicators to one's psychological well-being. Barnett (2007) described playful adults as "cheerful" and "happy". Proyer (2013a) found a strong positive

relationship between adult playfulness, life satisfaction and an engaging life. Later, he further demonstrated a positive association between playfulness and happiness across all age groups (Proyer, 2013b). In addition, it has been suggested that playfulness is heavily linked with intrinsic motivation (Amabile, Hill, Hennessey & Tighe, 1994), and through doing things for the doing's sake could lead to more flow experiences (Csikszentmihalyi, 1975). Adult Playfulness has also shown to be positively associated with extraversion and agreeableness (Proyer, 2013a), which are strong predictors for positive affects (DeNeve & Cooper, 1998). Flow experiences (indicator of engagement) and positive affects are two of the core elements for flourishing in the Well-being theory proposed by Seligman (2011), and that suggests a possible link between adult playfulness and flourishing. Furthermore, increasing flow experiences has been suggested to be one of the few ways to induce long-lasting happiness (Lyubomirsky, 2008).

Playfulness has long been linked with experience of pleasure and positive emotions. Chang, Qian and Yarnal (2013) showed that adult playfulness is linked with increased positive emotions and decreased negative emotions. Guitard and colleges (2005) included pleasure as one of the properties of adult playfulness. They suggested that playfulness allows adults to frequently engage in enjoyable situations, and that through

frequent engagement of these situations, they experience the sensation of happiness and well-being. Their participants pointed out that such pleasure allowed them to maintain good mental health and avoid being burnout by stress (Guitard et al., 2005). Also, university students considered more playful were shown to actively seek companionship and to lift up their mood through leisure (Qian & Yarnal, 2011). It implies playful individuals could be having more positive relationships in their lives, and it is worth to note that positive relationship is an element that contributes to flourishing (Seligman, 2011). Lyubomirsky (2008) also regarded investing in social relationship as another happiness inducing activities.

Furthermore, Fredrickson (1998, 2001) emphasized that positive emotions can be facilitated through play and playfulness. With her broaden-and-build theory of positive emotions, she demonstrated those positive emotions can widen one's mindset and, more importantly, build up psychological resources to maintain mental well-being (Fredrickson, 1998, 2001).

Additionally, playfulness is closely related to sense of humor (Barnett, 2007; Guitard et al., 2005; Proyer & Ruch, 2011). Playful individuals encounter humor through jokes and seeing the funnier side of life. When they are exposed to these

humorous stimuli, they are likely to have a boosted positive mood (Szabo, 2003).

The benefit of adult playfulness for psychological well-being can also be seen in terms of coping with stress. Magnuson and Barnett (2013) found that highly playful people tend to perceive a lower level of stress compared to their less playful counterparts. While perceived stress is negatively related with one's happiness (Schiffrin & Nelson, 2010), more playful adults could be more likely to report higher level of happiness due to their lower level of perceived stress. It has also been found that highly playful individuals are more likely to use adaptive coping strategies, and less likely to use avoidant coping (Magnuson & Barnett, 2013). Their higher creativity and tolerance of ambiguity might be contributing to this kind of coping pattern (Tegano, 1990). There findings provided evidence for the role of adult playfulness in resilience and better psychological well-being.

Besides its associations with well-being indictors, adult playfulness is also related to a range of outcome variables that can affect a person's psychological well-being. For instance, adult playfulness has been positively linked to physical fitness (Proyer, 2013a) and academic performance (Proyer, 2011). Finally, adult playfulness has also been suggested to be a key characteristic that a play therapist should possess to maximize the

therapeutic outcome (Schaefer & Greenberg, 1997).

Based on previous studies, adult playfulness was expected to be positively correlated with the measure of happiness. In contrast, measure of depression was predicted to be negatively correlated with playfulness. The reason for including a measurement for depression is that it can be seen as the opposite of happiness. It is widely accepted that depression can be understood as the opposing valence dimension to happiness (e.g., Joseph, Linley, Harwood, Lewis & McCollam, 2004; Watson, Wiese, Vaidya & Tellegen, 1999). Accordingly, happiness should be negatively related to the opposing depression. Given all the evidence supporting the link between playfulness and psychological wellness, negative correlation between playfulness and depression could be expected. Inclusion of both happiness and depression measure can further confirm the positive impact that playfulness has on one's psychological functioning.

1.6 Humor: A Closely Related Construct

To understand the relationship between playfulness and humor, some important background and previous findings of humor have been summarized.

Humor is as difficult to define as playfulness is. Humor can be broadly described

as a concept that consists of cognitive actions to create and perceive amusing stimuli and behavioral tendencies to say or do funny things or make others laugh (Martin, 2007). From a trait perspective, humor studies deal with individual differences in humor, namely sense of humor, which refers to a trait that allows individual to perceive, express and enjoy humorous things (Martin, 2000).

There have been lots of attempts to study the benefits of humor for the well-being. In earlier decades, findings from those attempts were often subjected to criticism due to their inconsistencies across different studies (Martin, 2003). Martin and associates (2003) argued that the major reason for these failed attempts was that most early measurements of humor did not differentiate between its bright, adaptive side and its dark, maladaptive side. Consequently, they further developed Humor Style Questionnaire (HSQ) that measure both positive and negative side of humor. Studies of humor and the well-being have been relatively successful following the development of HSQ (e.g. Ozyesil, 2012; Tümkaya, 2011; Kuiper & McHale, 2009).

Humor Style Questionnaire (Martin et al., 2003) measures the four functions or styles of humor: 1) self-enhancing; 2) affiliative; 3) aggressive; and 4) self-defeating humor. These humor styles represent how an individual uses humor in daily life. A high

score in self-enhancing humor means they often use humor as a coping mechanism and would be able to maintain a humorous outlook in the face of adversity (Martin et al., 2003). As for individuals who score high in affiliative humor, their use of humor is with the aim of developing or fostering social relationships and resolving social tensions (Lefcourt, 2001). In the case of aggressive humor, these individuals are likely using humor to ridicule, offend or downgrade others without caring for others' feelings (Martin et al., 2003). Lastly, people scoring high in self-defeating humor would frequently degrade or put themselves down through jokes in order to amuse others (Martin et al., 2003). Self-enhancing humor and affiliative humor are known as adaptive humor styles due to their beneficial nature to psychological well-being, while aggressive and self-defeating humor are maladaptive humor styles because of their destructive nature (Martin et al., 2003). This categorization and measurement of humor allows researchers to associate a particular type of humor with other well-being indicators, and thus, a better understanding in the role of humor in one's well-being.

Adaptive humor styles have been heavily linked with better psychological well-being. To name a few, they were found to be related to higher subjective well-being (Tümkaya, 2011), higher self-esteem (Ozyesil, 2012), higher cheerfulness and optimism (Martin et al., 2003), higher life satisfaction and more positive affects

(Karou-ei, Doosti, Dehshiri & Heidari, 2009), lower loneliness (Hampes, 2005), lower depression (Kuiper & McHale, 2009), and better life adjustment and resilience (Cheung & Yue, 2012). On the other hand, maladaptive humor styles were mostly related to negative psychological constructs, like higher depression, higher anxiety (Martin et al., 2003), and more negative affects (Karou-ei et al., 2009). According to previous findings, it was predicted that adaptive humor styles (affiliative and self-enhancing humor) would be positively correlated with happiness, and negatively correlated with depression. In contrast, maladaptive humor styles (self-defeating and aggressive humor) would be expected to be negatively correlated with happiness, and positively correlated with depression.

Previous humor and playfulness studies revealed that the two constructs have their similarities in terms of their nature and contribution to a better psychological well-being. But there has been an insufficient amount of studies attempting to investigate how playful individuals use humor in their everyday life. Questions like “do highly playful individuals use significantly more of adaptive humor styles and less of maladaptive ones?” remain unexplored. The broader unresolved issue here is how humor and playfulness relate to each other. Thus, this current study attempts to take the initiative by testing how adult playfulness relates to humor, especially the four humor styles. In

addition, measure for (overall) sense of humor is also included in this study.

1.7 Linking the Two Constructs: Playfulness and Humor

Limited previous studies revealed that playfulness and humor overlap to a great extent but that the two are not identical. In their study focusing on the relation between playfulness and character strengths, Proyer and Ruch (2011) found humor (as a specific character strength) as the strongest predictor to playfulness among all other strengths mentioned by Peterson & Seligman (2004). They further concluded that while some humors do not relate to play, humor should be seen as a special form of play rather than an identical construct (Proyer & Ruch, 2011).

From the theoretical viewpoint, sense of humor is frequently mentioned as one of the core features underlying playfulness, rather than the other way around. Previous literatures included sense of humor as one of the components that underlie playfulness (Guitard et al., 2005; Lieberman, 1977; Schaefer & Greenberg, 1997). McGhee (2010) suggested humor to be the play of ideas and that the prerequisite to humor is a playful mindset. Schaefer and Greenberg (1997) argued that playfulness is a broader construct than humor, and found a moderate positive correlation between playfulness and the measure of sense of humor. Furthermore, it has been suggested that playful individuals

are likely to display their playful behaviors through jokes, teases, clowning and acting silly (Barnett, 2007). Based on previous literatures, it seemed that humor is frequently used by playful individuals in their daily lives, so a positive relationship between adult playfulness and sense of humor is expected in this current study.

An additional measure of humor has also been included in this present study. It involves ratings on the importance of humor, self and parental humor. These ratings have been utilized successfully in previous humor study (Yue, 2011). Since playful individuals are usually described as “humorous” and “funny”, and they are likely to exhibit playful behaviors through different kinds of humorous activities (Barnett, 2007), it is expected that playfulness would be related to higher ratings on self-humor and the importance of humor.

In terms of humor styles, there has been a lack of previous studies directly testing each of their relationship with playfulness. But previous well-being studies have shown that both adaptive humors and playfulness are beneficial to psychological well-being (e.g. Proyer, 2013b; Tümkaya, 2011). With humor being considered as underlying feature of playfulness, it was predicted that adaptive humors would be positively correlated with playfulness due to their similar positive nature in psychological

well-being.

However, a minor but significant positive correlation was also expected between self-defeating humor and playfulness. The reason of such is that playful individuals generally are not afraid to act silly and make fun of themselves. Indeed, playfulness was demonstrated to be related to lesser fear of being laughed at and more joy of being laughed at (Proyer, 2012a). Also, it has been proposed that silliness is a major feature of adult playfulness (Glynn & Webster, 1992). Barnett (2007) further suggested that adults' playful behavior could be manifested through acting silly. Since self-defeating humor involves amusing others by making fun of oneself (e.g. telling embarrassing stories about themselves to make others laugh), a positive relationship between self-defeating humor and playfulness is expected. This relationship should not be robust since evidence shows playfulness to be related to positive psychological functioning.

No relationship was anticipated between aggressive humor and playfulness. Although Proyer (2012a) found positive correlation between the joy of laughing at others and playfulness, others disagreed. For instance, the descriptor "aggressive" has not been found to be relevant to adult playfulness (Barnett, 2007). Sense of humor that involves hurting or being mean to others is not related to playfulness (Guitard et al.,

2005). Therefore, it is believed that playful individuals might only laugh at others through friendly teases instead of actual insulting jokes. So, aggressive humor should not be related to playfulness.

1.8 Humor as a Mediator between Adult Playfulness and Psychological Well-being

Although the link between adult playfulness and psychological well-being indicators has been demonstrated consistently, not many attempted to investigate how their relationships work. For instance, why and how does playfulness link with happiness. As described, adults would transform most of their play behaviors that they had as children into a playful attitude (Solnit, 1998). It means that the variety of play behaviors decreases among adults (e.g. most adults would stop playing with their childhood toys or playing hide-and-seek). Therefore, playful adults are likely to express their playfulness with a different approach. Indeed, according to Barnett (2007), playful adults are likely to display playful behaviors through the means of humor. In other words, it is possible that playful adults manifest their playfulness through humorous displays (e.g. joking around, telling funny stories), and in turn, these humorous displays affect those adults' well-being. To test this, mediation analyses have been conducted to investigate the possible indirect effect from humor variables, explaining the relationship between playfulness, happiness and depression.

1.9 Conceptual Framework and Hypotheses

Adult playfulness is an underexplored research area in contemporary psychology, and Chinese-based studies of this topic are even rarer. Thus, the goal of this study is to investigate the relationship between adult playfulness, humor, happiness and depression among university students in Hong Kong and Guangdong. This investigation not only leads to a better understanding of adult playfulness as a personality construct, but also provides initial details about Chinese playfulness.

This study first describes the pattern of adult playfulness in two groups of Chinese students (Hong Kong and Guangdong). Second, it investigates if playfulness is related to higher subjective happiness and lower depression. Third, relationships between humor variables and playfulness are also examined. The conceptual framework for this study is presented and summarized in Figure 1.

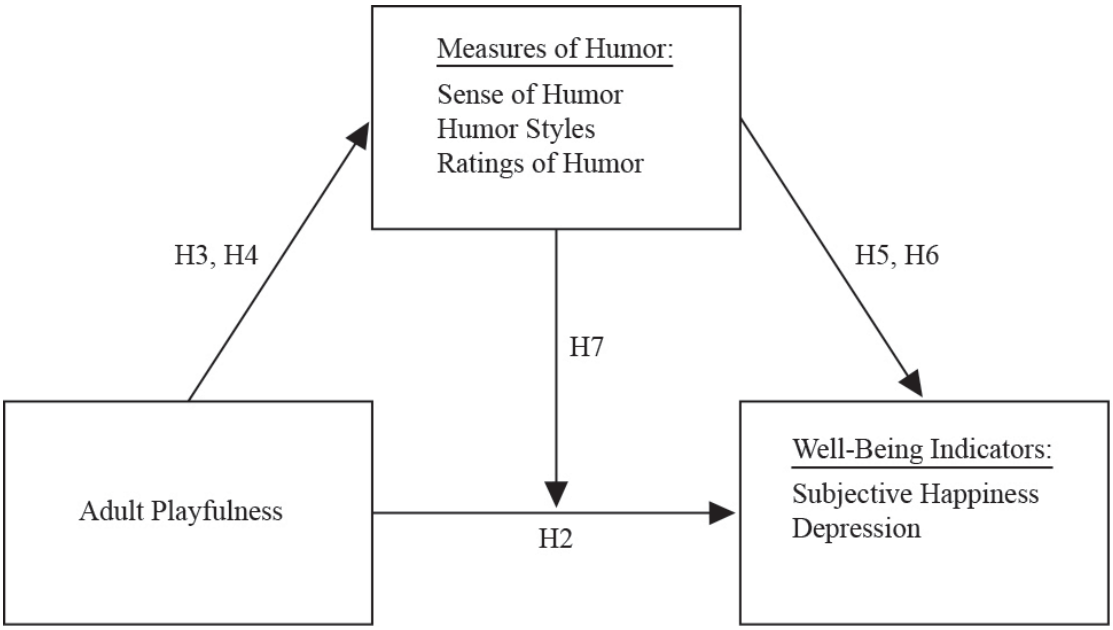


Figure 1. The conceptual framework for this study.

The followings are the hypotheses for this study:

Hypothesis 1: Adult playfulness is negatively correlated with age.

Hypothesis 2: Adult playfulness is positively correlated with subjective happiness and is negatively correlated with depression.

Hypothesis 3: Adult playfulness is positively correlated with the sense of humor, importance of humor and self humor.

Hypothesis 4: Adult playfulness is positively correlated with affiliative humor, self-enhancing humor and self-defeating humor.

Hypothesis 5: Adaptive humor styles are positively correlated with subjective happiness and are negatively correlated with depression.

Hypothesis 6: Maladaptive humor styles are negatively correlated with subjective happiness and are positively correlated with depression.

Hypothesis 7: The relationships between adult playfulness and well-being indicators (subjective happiness and depression) are mediated by measures of humor.

2. Methodology

2.1 Participants

The sample consisted of 166 Hong Kong students (66 males, 39.8%; 100 females, 60.2%) and 159 Mainland Chinese students from Guangdong (48 males, 30.2%; 105 females, 66.0%; 6 did not indicate gender, 3.8%). Their mean age was 20.13 years (*SD* = 1.62) and ranged from 17 to 26 years, while 7 did not provide their age.

All participants were undergraduates, except three from the Hong Kong sample (1 diploma, 1 associate degree and 1 master student). The majority of Hong Kong students was sampled from City University of Hong Kong and smaller proportion from seven other universities located in Hong Kong (The Chinese University of Hong Kong, The University of Hong Kong, Hong Kong Polytechnic University, Hong Kong Shue Yan University, Lingnan University, Hong Kong Baptist University and The Hong Kong Institute of Education). All Mainland Chinese students were sampled from Sun Yat-Sen University in Guangdong.

2.2 Materials/Measures

The data for this present study was collected by the means of self-reported questionnaire. To facilitate better understanding of the items for the two groups, the

questionnaires were printed in traditional Chinese characters for Hong Kong students and simplified Chinese characters for Mainland Chinese students. The questionnaire included three sections with seven individual parts.

In the first section (part 1), participants were first asked to rate on a 10-point Likert scale (1 = lowest, 10 = highest) the importance of humor, their own humor (self humor) and their parents' sense of humor. Then they were required to nominate any three individuals that they considered as "humorous" and three individuals that they saw as "playful". Note that the nomination part was not included in the report due to a large amount of missing data.

The next section (part 2 to part 6) consisted of five scales: Short Measure for Adult Playfulness (SMAP), Multidimensional Sense of Humor Scale (MSHS), Humor Style Questionnaire (HSQ), Self-Rating Depression Scale (SDS) and Subjective Happiness Scale (SHS).

Short Measure for Adult Playfulness (SMAP; Proyer, 2012b) was used to measure the global self-description of playfulness among adults in a time-saving manner. The scale includes five positively keyed items with answers initially given on a 4-point

Likert response format. The scale was then revised to 7-point answer format (1 = strongly disagree, 7 = strongly agree) and translated into Chinese by the author and his colleagues with the content of five items remained unchanged. A sample item is “I frequently do playful things in my daily life”. The latest and translated version of the scale was used in this study. Proyer (2012b) reported high internal consistencies (Cronbach's α ranged from .80-.89) as well as convergent and divergent validity. Note that a brief description of playfulness was given above the scale, so the respondents all gained similar understanding of the term before answering. The Cronbach's α was .82 in this study.

Multidimensional Sense of Humor Scale (MSHS; Thorson & Powell, 1993) was employed to assess the sense of humor. The scale includes 24 items on a 5-point Likert response format ranging from strongly disagree to strongly agree. Possible score ranged from 0 to 96. It measures sense of humor through four factors: 1) humor production or social use of humor; 2) coping humor; 3) negative attitude towards humor; and 4) positive attitude towards humor. Although the scale can be divided into 4 subscales, it has been suggested that using a single total score for analysis is the most appropriate (Martin, 2003). So, the total score was calculated and used in the analysis for this study. A sample item is “Humor helps me cope”. The Cronbach's α reported by Thorson &

Powell (1993) was .92. The Chinese version of the scale translated by Yue (2012) was used in this study and the alpha coefficient was .90.

Humor Style Questionnaire (HSQ; Martin et al., 2003) was utilized to measure individuals' uses of humor. The 32-item scale on a 7-point Likert response format measures the extent to which people use the four types of humor styles in their daily life. The four humor styles measured in the scale are: 1) Affiliative humor; 2) self-enhancing humor; 3) aggressive humor; and 4) self-defeating humor. There are 8 items (4 subscales) for measuring each style. "I laugh and joke a lot with my friends" is a sample item. In this study, the Chinese version of HSQ (Yue, 2012) was employed. Cronach's alpha in this study ranged from .70 to .81, and .78 as a whole.

Zung Self-Rating Depression Scale (SDS; Zung, 1965) was used to assess the level of depression. The scale has been commonly used worldwide and includes 20 items on a 4-point Likert response format (1 = a little of the time, 4 = most of the time). Ten items were positively keyed and the other ten were negative. An example from the scale is "I feel down-hearted and blue". The total score (ranged from 20-80) was used in the analysis. The translated Chinese version of the scale was used in the study with the Cronbach's $\alpha = .85$.

Subjective Happiness Scale (SHS) was developed by Lyubomirsky and Lepper (1999) to measure individuals' happiness level with a subjectivist approach. It consists of 4 items on 7-point Likert scale. All but the fourth item was reverse coded. The authors demonstrated high internal consistency (Cronbach's α ranged .79 to .94) and provided evidence for construct and discriminant validity. The scale was translated into Chinese, and the translated version was used in this study with Cronbach's α = .80.

The last section (part 7) of the questionnaire required participants to provide demographic information like gender, age, place of study, educational level and so on. See Appendix A for the finalized questionnaire.

2.3 Procedure

A pilot test was conducted before the data collection to gather feedback on the designed questionnaire. 10 undergraduate students at City University of Hong Kong were asked to complete the initial version of the questionnaire and provide comments. Based on their comments, the questionnaire was revised and finalized for this study. Information gathered from this pilot test was not included in the analysis.

In this present study, participants were invited to complete the revised

questionnaire on voluntary basis. With their consent, they were given the questionnaire that included the mentioned sections (see *Materials/Measures*), and it took around 10 to 15 minutes to complete. Upon the completion, they were debriefed about the purposes of the study. All completed questionnaires were collected once the participants had finished.

2.4 Statistical Analysis

The collected data was entered into IBM SPSS Statistics 19 for analysis. Independent sample t-tests were used to investigate the possible gender and regional differences in adult playfulness, subjective happiness and self-rating depression. Pearson and partial correlations were computed for the relationships between playfulness, humor variables and well-being variables. Multiple regression was conducted to predict playfulness with humor styles. As for mediation analysis, a SPSS program, PROCESS was employed (Hayes, 2012, 2013). The program used bootstrapping method to test possible indirect, mediating effect from mediators. Note that due to the missing information, the number of participants varied slightly in the analysis.

3. Results

3.1 Descriptive Statistics for Demographic Variables

Table 1 displays the demographic information of the participants in this current study. Among the 325 participants, 35.1% (*n* = 114) were males and 63.1% (*n* = 205) were females, with 1.8% of the total not reporting gender (*n* = 6). The participants aged from 17 to 26 years, with 54.1% (*n* = 176) of them aged 20 or below and 43.7% (*n* = 142) aged 21 or above, with 2.2% (*n* = 7) not indicating age. 51.1% (*n* = 166) of the students were recruited from Hong Kong and 48.9% (*n* = 159) from Guangdong.

Table 1. Demographic Characteristics of Participants (N = 325).

		N	%
Gender	Male	114	35.1
	Female	205	63.1
Age	20 or below	176	54.1
	21 or above	142	43.7
Place of study	Hong Kong	166	51.1
	Guangdong	159	48.9

3.2 Gender Differences in Adult Playfulness, Happiness and Depression

Table 2 presents the gender differences in adult playfulness, subjective happiness and depression. It was revealed that there was no gender difference in adult playfulness among Hong Kong students, $t(163) = .09$, $p = .93$, Guangdong students, $t(150) = .19$, $p = .85$, and all students, $t(315) = .14$, $p = .90$. Although statistically not significant, males generally reported slightly higher playfulness across all comparisons of gender. These

results provided information about Chinese adult playfulness in terms of gender.

Overall, females (M = 4.93, SD = 1.06) rated significantly higher on subjective happiness than males (M = 4.53, SD = 1.16), $t(314) = -3.15$, $p<.01$. For Hong Kong students only, subjective happiness was higher for females (M = 4.83, SD = 1.02) than males (M = 4.40, SD = 1.01), $t(161) = -2.66$, $p<.01$. For Guangdong students only, there was no gender difference in subjective happiness, $t(151) = -1.58$, $p = .12$.

There was no overall gender difference for self-rating depression when all students were included, $t(304) = -.68$, $p = .50$, and same goes for Guangdong students $t(73.54) = .55$, $p = .58$. But interestingly, Hong Kong females (M = 41.43, SD = 7.62) scored significantly higher on depression than Hong Kong males (M = 38.84, SD = 8.56), $t(160) = -2.01$, $p<.05$.

Table 2. Gender Differences in Adult Playfulness, Subjective Happiness and Self-rating Depression among Hong Kong and Guangdong Students

	Hong Kong Students (n = 166)				
	Male (n = 66)		Female (n = 99)		
	Mean	*SD*	Mean	*SD*	*t*-value
SMAP	4.78	1.06	4.77	1.03	.09
SHS	4.40	1.01	4.83	1.02	-2.66**
SDS	38.84	8.56	41.43	7.62	-2.01*
	Guangdong Students (n = 159)				
	Male (n = 48)		Female (n = 105)		
	Mean	*SD*	Mean	*SD*	*t*-value
SMAP	4.88	1.04	4.85	1.15	.19
SHS	4.70	1.32	5.02	1.09	-1.58
SDS	36.91	10.16	35.99	7.85	.55
	Overall Gender Differences (N = 325)				
	Male (n = 114)		Female (n = 203)		
	Mean	*SD*	Mean	*SD*	*t*-value
SMAP	4.83	1.05	4.81	1.09	.14
SHS	4.53	1.16	4.93	1.06	-3.15**
SDS	38.03	9.28	38.72	8.19	-.68

Note: *p<.05, **p<.01; SMAP = Short Measure for Adult Playfulness; SHS = Subjective Happiness Scale; SDS = Zung Self-rating Depression Scale, ranged from 20-80.

3.3 Regional Differences in Adult Playfulness, Happiness and Depression

In order to gain more insight on adult playfulness among Chinese people, regional differences between Hong Kong and Guangdong students were also examined. Table 3 shows that there was no significant difference in adult playfulness between Hong Kong and Guangdong students, $t(321) = -.94$, $p = .35$. It is worth to note that Guangdong students did rate themselves as slightly more playful than Hong Kong students (M = 4.89, SD = 1.10 vs. M = 4.78, SD = 1.04).

There were regional differences in subjective happiness and self-rating depression for these two groups of students. Specifically, Guangdong students (M = 4.94, SD = 1.16) scored higher on subjective happiness than their Hong Kong counterparts (M = 4.66, SD = 1.03), $t(319) = -2.28$, $p<.05$. On the other hand, Hong Kong students (M = 40.41, SD = 8.08) reported significantly higher score for self-rating depression than Guangdong students (M = 36.17, SD = 8.71), $t(309) = 4.45$, $p<.001$.

To summarize, although there was no significant difference in adult playfulness for the two groups of students, Hong Kong students reported lower subjective happiness and higher self-rating depression than Guangdong students.

Table 3. Regional Differences Between Hong Kong and Guangdong Students in Adult Playfulness, Subjective Happiness and Self-rating Depression

	Hong Kong Students (n = 166)		Guangdong Students (n = 159)		
	Mean	*SD*	Mean	*SD*	*t*-value
SMAP	4.78	1.04	4.89	1.10	-.94
SHS	4.66	1.03	4.94	1.16	-.28*
SDS	40.41	8.08	36.17	8.71	4.45***

Note: *$p<.05$, **$p<.01$, ***$p<.001$; SMAP = Short Measure for Adult Playfulness; SHS = Subjective Happiness Scale; SDS = Zung Self-rating Depression Scale, ranged from 20-80.

3.4 Gender Differences in Sense of Humor and Humor Styles

Table 4 shows the gender differences in sense of humor and humor styles. Overall, there was no gender difference in sense of humor ($t[310] = -.75$, $p = .45$), affiliative

humor (t[305] = -1.45, p = .15) and self-enhancing humor (t[313] = -.93, p = .35). Males (M = 28.29, SD = 7.24) scored significantly higher on self-defeating humor than females (M = 26.07, SD = 7.47), t(313) = 2.55, p<.05. Male students (M = 26.11, SD = 7.04) also scored higher on aggressive humor than females (M = 23.66, SD = 6.67), t(314) = 3.08, p<.01 .

Only in Guangdong students, males (M = 28.22, SD = 7.31) reported higher self-defeating humor than females (M = 24.00, SD = 7.36), t(147) = 3.28, p<.01. Also, males from Guangdong (M = 26.11, SD = 7.04) rated higher on aggressive humor than their female counterparts (M = 23.66, SD = 6.67), t(149) = 2.27, p<.05.

As for Hong Kong students only, no gender difference was detected for sense of humor and all humor styles (p>.05).

Table 4. Gender Differences in Sense of Humor and Humor Styles among Hong Kong and Guangdong Students

	Hong Kong Students (n = 166)				
	Male (n = 66)		Female (n = 100)		
	Mean	*SD*	Mean	*SD*	*t*-value
MSHS	65.42	12.25	64.46	8.74	.54
Affiliative	38.82	7.22	39.11	6.19	-.28
Self-enhancing	33.27	6.62	33.17	6.97	.10
Self-defeating	28.33	7.24	28.25	6.96	.07
Aggressive	27.18	6.40	25.62	5.69	1.65
	Guangdong Students (n = 159)				
	Male (n = 48)		Female (n = 104)		
	Mean	*SD*	Mean	*SD*	*t*-value
MSHS	63.40	13.61	66.90	1.43	-1.36
Affiliative	38.00	8.12	40.40	8.42	-1.63
Self-enhancing	34.64	7.60	36.10	7.82	-1.07
Self-defeating	28.22	7.31	24.00	7.36	3.28**
Aggressive	24.65	7.66	21.79	7.01.	2.27*
	Overall Gender Differences (N = 325)				
	Male (n = 114)		Female (n = 203)		
	Mean	*SD*	Mean	*SD*	*t*-value
MSHS	64.60	12.79	65.70	12.09	-.75
Affiliative	38.46	7.57	39.75	7.40	-1.45
Self-enhancing	33.84	7.03	34.65	7.54	-.93
Self-defeating	28.29	7.24	26.07	7.47	2.55*
Aggressive	26.11	7.04	23.66	6.67	3.08**

Note: *p<.05, **p<.01; MSHS = Multidimensional Sense of Humor Scale; Humor styles = HSQ (affiliative, self-enhancing, self-defeating and aggressive humor).

3.5 Regional Differences in Sense of Humor and Humor Styles

Table 5 presents the results of the regional differences in sense of humor and humor styles between Hong Kong and Guangdong students. No regional difference was found for sense of humor between the two groups of students, $t(271.38) = -1.01$, $p = .31$.

Same for affiliative humor, no difference was revealed between the two groups, $t(279.04) = -.93$, $p = .36$. However, significant regional differences were detected for self-enhancing, self-defeating and aggressive humor. For self-enhancing humor, Guangdong students (M = 35.88, SD = 7.74) scored significantly higher than Hong Kong students ($M = 33.21$, $SD = 6.81$), $t(318) = -3.25$, $p<..001$. As for self-defeating humor, Hong Kong students ($M = 28.28$, $SD = 7.05$) reported a higher score than their Guangdong counterparts ($M = 25.29$, $SD = 7.55$), $t(318) = 3.66$, $p<.001$. Lastly, Hong Kong students ($M = 26.24$, $SD = 6.02$) also scored significantly higher on aggressive humor than Guangdong students ($M = 22.67$, $SD = 7.31$), $t(300.64) = 4.77$, $p<.001$.

Mindful of the regional and gender differences in humor, happiness and depression, it was decided to control for gender and the region of study (Hong Kong or Guangdong) in some of the later analyses.

Table 5. Regional Differences Between Hong Kong and Guangdong Students in Sense of Humor and Humor Styles

	Hong Kong Students (n = 166)		Guangdong Students (n = 159)		
	Mean	*SD*	Mean	*SD*	*t*-value
MSHS	64.84	10.25	66.27	14.53	-1.01
Affiliative	38.99	6.60	39.79	8.37	-.93
Self-enhancing	33.21	6.81	35.88	7.74	-3.25***
Self-defeating	28.28	7.05	25.29	7.55	4.77***
Aggressive	26.24	6.02	22.67	7.31	3.66***

Note: *p<.05, **p<.01, ***p<.001; MSHS = Multidimensional Sense of Humor Scale; Humor styles = HSQ (affiliative, self-enhancing, self-defeating and aggressive humor).

3.6 Correlations of Adult Playfulness, Humor, Happiness and Depression

Table 6 demonstrates the correlations among playfulness, measures of humor, subjective happiness and self-rating depression. Contrary to what was predicted, age did not show to be related to playfulness, $r(314) = -.09$, $p = .11$. Thus, Hypothesis 1 was not supported.

As for well-being indicators, adult playfulness was positively correlated with subjective happiness ($r[317] = .37$, $p<.01$), and negatively correlated with self-rating depression ($r[307] = -.22$, $p<.01$). Considering the gender and regional differences in happiness and depression shown in previous sections, partial correlations (not included in tables) were also conducted for playfulness, happiness and depression. The results of the partial correlation produced similar results with playfulness positively correlated

with subjective happiness (r[310] = .37. p<.01) and negatively correlated with self-rating depression (r[300] = -.21, p<.01). Note that a strong negative correlation was found between subjective happiness and self-rating depression (r[306] = -.52, p<.01), and that confirmed their opposing nature. With playfulness positively correlated with happiness and negatively correlated with depression, Hypothesis 2 was fully supported.

Relating playfulness to humor variables, adult playfulness was found to be positively correlated with sense of humor (MSHS; r[313] = .55, p<.01), the importance of humor (r[317] = .26, p<.01) and self humor (r[318] = .45, p<.01). These results provided support for Hypothesis 3.

For humor styles, it was confirmed that affiliative humor (r[308] = .53, p<.01) and self-enhancing humor (r[316] = .40, p<.01) were positively related to playfulness. Self-defeating humor, although being in the predicted direction (positive), was not associated with playfulness (r[316] = .02, p = .75). These findings provided partial support for Hypothesis 4 as playfulness was found to only be positively correlated with affiliative and self-enhancing humor, but not with self-defeating humor. Lastly, there was no significant correlation found between playfulness and aggressive humor (r[317] = -.09, p = .13).

Furthermore, relationships between humor styles and well-being indicators were also investigated. Subjective happiness was positively correlated with affiliative (r[307] = .38, p<.01) and self-enhancing humor (r[315] = .45, p<.01). It was also negatively correlated with aggressive humor (r[316] = -.13, p<.05), but not related to self-defeating humor (r[315] = -.07, p = .22).

As for depression, it was found to be negatively correlated with affiliative (r[300] = -.37, p<.01) and self-enhancing humor (r[306] = -.38, p<.01). It was also found to be positively correlated with self-defeating (r[307] = .20, p<.01) and aggressive humor (r[307] = .38, p<.01). These results gave full support for Hypothesis 5, which predicted that adaptive humor styles are positively correlated with subjective happiness and are negatively correlated with depression. On the other hand, maladaptive humor styles were found to be positively correlated with depression, but only aggressive humor was found to be negatively correlated with subjective happiness. Therefore, Hypothesis 6 was only partially supported.

Additionally, adult playfulness was also positively correlated with father's humor (r[318] = .17, p<.01) and mother's humor (r[317] = .12, p<.05). These results showed that one's playfulness is not only related to one's own sense of humor but beyond it

Table 6. Descriptive Statistics and Correlations among Age, Adult playfulness, Measures of Humor, Subjective Happiness and Self-rating Depression

Variable	Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	20.13	1.62	--												
2. SMAP	4.83	1.07	-.09	--											
3. MSHS	65.53	12.50	-.15*	.55**	--										
4. Affiliative	39.37	7.49	-.08	.53**	.77**	--									
5. Self-enhancing	34.49	7.43	-.13*	.40**	.58**	.46**	--								
6. Self-defeating	26.84	7.44	.20**	.02	.09	-.01	.14*	--							
7. Aggressive	24.50	6.90	.19**	-.09	-.21**	-.20**	-.17**	.42**	--						
8. Importance	8.24	1.37	-.10	.26**	.35**	.38**	.21**	.01	-.10	--					
9. Self humor	6.43	1.70	-.11	.45**	.57**	.53**	.36**	.12-	-.06	.45**	--				
10. Father humor	5.84	2.25	-.13*	.17**	.21**	.16**	.13*	.01	-.14*	.15**	.41**	--			
11. Mother humor	5.58	1.99	.01	.12*	.17**	.05	.10	-.06	.00	.10	.37**	.47**	--		
12. SHS	4.80	1.10	-.08	.37**	.36**	.38**	.45**	-.07	-.13*	.08	.31**	.18**	.21**	--	
13. SDS	38.38	8.64	.20**	-.22**	-.32**	-.37**	-.38**	.20**	.38**	-.13*	-.18**	-.12*	-.06	-.52**	--

Notes: n = 311-323; *p<.05, **p<.01; SMAP = Short Measure for Adult Playfulness; MSHS = Multidimensional Sense of humor Scale, ranged from 0-96; Variable 4 to 7 = Humor styles (affiliative, self-enhancing, self-defeating and aggressive humor); Perception of humor = importance of humor, ratings of self, father's and mother's humor (ranged from 1-10); SHS = Subjective Happiness Scale; SDS = Zung Self-rating Depression Scale, ranged from 20-80.

3.7 Predicting Playfulness with Humor Styles

To further investigate the relationship between humor and adult playfulness, a hierarchical regression analysis was computed (see Table 7). Due to concern about the assumption of multicollinearity among different measures of humor, only the four humor styles were selected as the humor variables to predict playfulness. A three-step hierarchical multiple regression was computed with adult playfulness as the dependent variable. As seen in Table 7, demographic variables (gender, age and region of study) were first entered in the first step to control their possible effects. It was revealed that demographics did not contribute significant to the regression model, $F(3, 302) = .94$, $p = .42$. These demographics accounted for only 0.9% of the variation in playfulness.

In the second step, two adaptive humor styles (affiliative and self-enhancing) were introduced into the model. Along with demographics, the two adaptive humor styles contributed significantly to the model, $F(5, 300) = 27.39$, $p<.001$) and explained an additional 30.4% of the variance in playfulness. The change in R^2 was significant, $F(2, 300) = 66.45$, $p<.001$.

In the third step, two maladaptive humor styles (aggressive and self-defeating) were also included into the analysis. The model was significantly predicting

playfulness (F[7, 298] = 19.59, p<.001), but adding the two maladaptive humors accounted for only 0.2% of the variance in playfulness and the change in R^2 was not significant, $F(2, 298) = .37$, $p = .69$.

Among the four humor styles while controlling for demographics, adaptive humor styles seemed to be the only humor styles that significantly predicted adult playfulness. Specifically, affiliative humor ($\beta = .44$, $p<.001$) was shown to have higher predictive power than self-enhancing humor ($\beta = .21$, $p<.001$).

Table 7. Hierarchical Regression Analysis for Humor Styles Predicting Playfulness

Variable	*B*	SE	β	*t*-value	R^2	ΔR^2
Step 1					.10	.01
Gender	-.08	.13	-.04	-.62		
Age	-.07	.05	-.12	-1.40		
Region	-.02	.16	-.01	-.13		
Step 2					.31***	.30***
Gender	-.16	.11	-.07	-1.43		
Age	-.05	.04	-.08	-1.21		
Region	-.10	.13	-.05	-.78		
Affiliative	.06	.01	.43	8.03***		
Self-enhancing	.03	.01	.20	3.70***		
Step 3					.32***	.00
Gender	-.15	.11	-.07	-1.36		
Age	-.05	.04	-.07	-1.15		
Region	-.09	.14	-.04	-.68		
Affiliative	.63	.01	.44	8.00***		
Self-enhancing	.03	.01	.21	3.75***		
Self-defeating	.01	.01	.05	.81		
Aggressive	-.01	.01	-.03	-.59		

Note: n = 312-325; *p<.05, **p<.01, ***p<.001; Region = Guangdong and Hong Kong; Humor styles = affiliative, self-enhancing, self-defeating and aggressive.

3.8 Humor as a Mediator Between Adult Playfulness and Psychological Well-being

In order to examine the possible mediating effects of humor variables on the relationship between adult playfulness and well-being indicators (subjective happiness and depression), multiple mediation analyses were conducted using a SPSS macros developed by Hayes (2012). It was suggested that mediating effects should be determined with confident intervals produced by bootstrapping (Preacher and Hayes, 2004), and the mediating effect could be claimed as significant if zero was not within the confident interval.

Table 8 presents the results from multiple mediation analysis for the effect of adult playfulness on subjective happiness through humor variables. It was shown that playfulness was significantly related to sense of humor (MSHS; B = 6.20, t = 10.44, p<.001), affiliative humor (B = 3.64, t = 9.99, p<.001) and self-enhancing humor (B = 2.47, t = 6.31, p<.001), importance of humor (B = .34, t = 4.37, p<.001), self humor (B = .73, t = 8.37, p<.001), father's humor (B = .35, t = 2.83, p<.01) and mother's humor (B = .28, t = 2.43, p<.05). Playfulness is again not related to aggressive humor (B = -.44, t = -1.15, p = .25) and self-defeating humor (B = .10, t = .41, p = .80).

Happiness was found to be significant related to sense of humor (B = .03, t = 6.66, p<.001), affiliative humor (B = .05, t = 6.69, p<.001), self-enhancing humor (B = .07, t = 8.53, p<.001), self humor (B = .19, t = 5.32, p<.001), father's humor (B = .07, t = 2.54, p<.01) and mother's humor (B = .11, t = 3.40, p<.001).

In terms of mediating effects, affiliative humor (95%, CI[.00, .18]), self-enhancing humor (95%, CI[.08, .20]), importance of humor (95%, CI[-.02, -.00]) and mother's humor (95%, CI[.00, .06]) significantly mediated the relationship between playfulness and subjective happiness. The total mediating effect of humor variables was also significant (95%, CI[.09, .30]).

Table 9 reports the results of the mediation analysis for the relationship between playfulness and depression through humor variables. It was revealed that depression was related to sense of humor (B = -.19, t = -5.04, p<.001), affiliative humor (B = -.39, t = -6.42, p<.001), self-enhancing humor (B = -.39, t = -6.25, p<.001), aggressive humor (B = .43, t = 6.30, p<.001), self-defeating humor (B = .18, t = 2.74 , p<.001) and self humor (B = -.72, t = -2.53, p<.05).

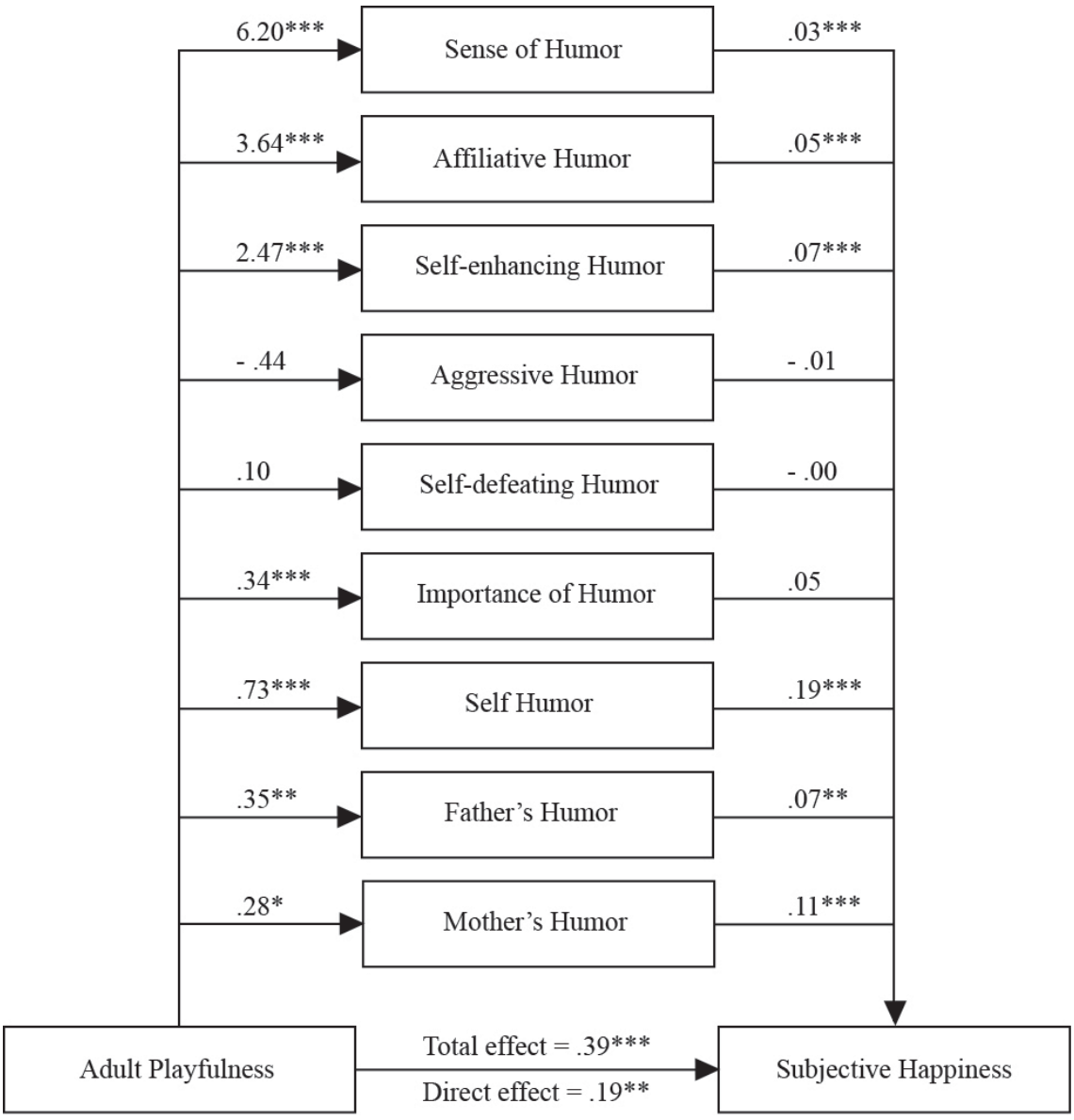
The total mediating effect of humor variables on the relationship between playfulness and depression was significant (95%, CI[-2.41, -.86]). Particularly, affiliative humor (95%, CI[-1.96, -.47]) and self-enhancing humor (95%, CI[-1.24, -.45]) were found to be significant mediators between that relationship.

These results supported Hypothesis 7, which suggested that the relationships between playfulness, subjective happiness and depression are mediated by humor. See *Figure 2* and *Figure 3* for graphic illustration of these relationships.

Table 8. Multiple Mediation Analysis for the Effect of Adult Playfulness on Subjective Happiness Through Humor Variables (5000 bootstraps).

Independent variable	Mediating variable	Dependent variable	Effect of IV on M		Effect of M on DV		Direct effect		Indirect effect: Effect of IV on IV through M			Total effect	
(IV)	(M)	(DV)	*B*	SE	*B*	SE	*B*	SE	*B*	SE	95% CI	*B*	SE
SMAP	MSHS	SHS	6.20***	.59	.03***	.01	.19**	.07	.-.02	.05	-.12 to .07	.39***	.06
	Affiliative		3.64***	.36	.05***	.01			.09[a]	.05	.00 to .18		
	Self-enhancing		2.47***	.39	.07***	.01			.13[a]	.03	.08 to .20		
	Aggressive		-.44	.38	-.01	.01			-.00	.01	-.03 to .00		
	Self-defeating		.10	.41	-.00	.01			-.00	.01	-.02 to .01		
	Importance		.34***	.08	.05	.05			-.03[a]	.02	-.02 to -.00		
	Self humor		.73***	.09	.19***	.04			.02	.04	-.07 to .10		
	Father humor		.35**	.12	.07**	.03			.01	.01	-.02 to .04		
	Mother humor		.28*	.11	.11***	.03			.02[a]	.02	.00 to .06		

Note: *B* = unstandardized coefficient; CI = confident interval; Controlled for age, gender and place of study; [a]significant at least at p<.05; *p<.05, **p<.01, ***p<.001; SMAP = Short Measure for Adult Playfulness; SHS = Subjective Happiness Scale; Humor Styles = Affiliative, Self-enhancing, Aggressive, Self-defeating humor; MSHS = Multidimensional Sense of Humor Scale; Importance = Perceived Importance of humor.



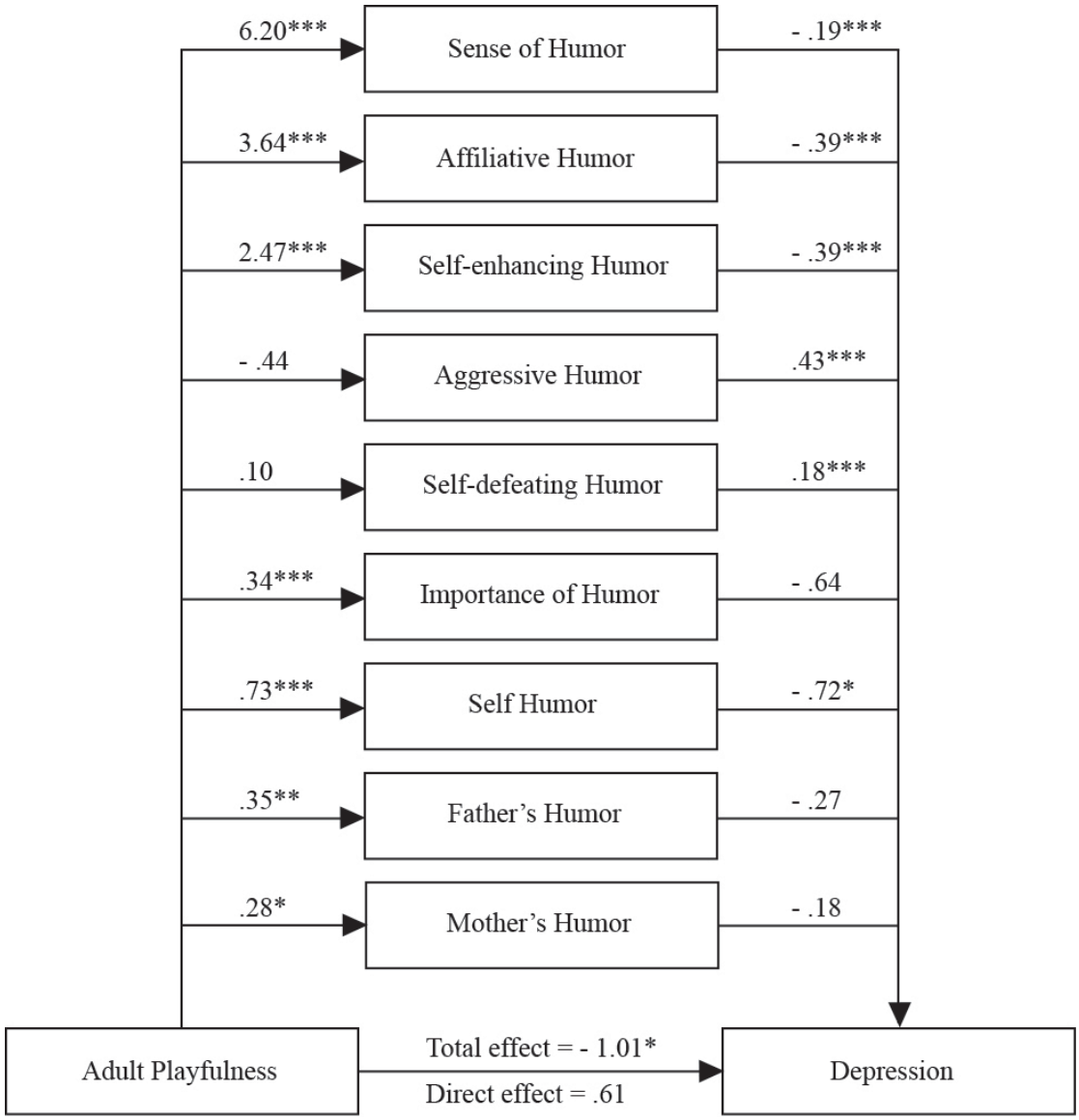
Note: *p<.05, **p<.01, ***p<.001.

Figure 2. Path model for relationships between adult playfulness, humor variables and subjective happiness.

Table 9. Multiple Mediation Analysis for the Effect of Adult Playfulness on Self-rating Depression Through Humor Variables (5000 bootstraps).

Independent variable	Mediating variable	Dependent variable	Effect of IV on M		Effect of M on DV		Direct effect		Indirect effect: Effect of IV on DV through M			Total effect	
(IV)	(M)	(DV)	*B*	SE	*B*	SE	*B*	SE	*B*	SE	95% CI	*B*	SE
SMAP	MSHS	SDS	6.20***	.59	-.19***	.04	.61	.50	..33	.41	-.12 to .07	-1.01*	.45
	Affiliative		3.64***	.36	-.39***	.06			-1.16[a]	.37	-1.96 to -.47		
	Self-enhancing		2.47***	.39	-.39***	.06			-.79[a]	.20	-1.24 to -.45		
	Aggressive		-.44	.38	.43***	.07			-.12	.13	-.43 to .09		
	Self-defeating		.10	.41	.18***	.07			-.04	.06	-.17 to .09		
	Importance		.34***	.08	-.64	.36			.06	.12	-.18 to .32		
	Self humor		.73***	.09	-.72*	.28			.21	.33	-.41 to .90		
	Father humor		.35**	.12	-.27	.22			-.07	.10	-.34 to .07		
	Mother humor		.28*	.11	-.18	.25			-.05	.09	-.31 to .08		

Note: *B* = unstandardized coefficient; CI = confident interval; Controlled for age, gender and place of study; [a]significant at least at p<.05; *p<.05, **p<.01, ***p<.001; SMAP = Short Measure for Adult Playfulness; SDS = Self-rating Depression Scale; Humor Styles = Affiliative, Self-enhancing, Aggressive, Self-defeating humor; MSHS = Multidimensional Sense of Humor Scale; Importance = Perceived Importance of humor.



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

Figure 3. Path model for relationships between adult playfulness, humor variables and depression.

4. Discussion

The present study answered the call from previous authors for further researches in adult playfulness (Barnett, 2007; Proyer, 2012b). It aimed to: 1) describe adult playfulness among Chinese university students; and 2) investigate adult playfulness in relation with humor, happiness and depression. The findings offered initial descriptions of Chinese adult playfulness and provided evidence for its benefits to psychological well-being. The link between playfulness and humor was demonstrated and clarified. This study also served as a pioneer to explore the relationships between playfulness and humor styles.

The results revealed no gender difference in adult playfulness, which has been expected and is consistent with previous studies (Bozionelos & Bozionelos, 1999; Proyer, 2013b). Regional difference in playfulness also could not be detected between Hong Kong and Guangdong students. These findings suggested that adult playfulness can be stable across gender and cultures.

Gender and regional differences in sense of humor and humor styles were examined next. Results showed that there was no gender difference in sense of humor, affiliative humor and self-enhancing humor. But differences were found for the use of

self-defeating and aggressive humor. Overall, male students reported that they used more self-defeating and aggressive humor than female students and this is consistent with previous studies (Martin et al., 2003; Tümkaya, 2011) However, only Guangdong students showed that gender difference in the two maladaptive humor styles, while Hong Kong males and females appeared to use the four humor styles equally. In terms of regional differences, it was found that Guangdong students used more of self-enhancing humor and less of self-defeating and aggressive humor. Although there is no difference in affiliative humor, these results are largely consistent with previous findings that Mainland Chinese used more of adaptive humor styles and less of the two maladaptive humor styles (Yue, Hao & Goldman, 2010).

It was suggested that age was negatively related with adult playfulness (Proyer, 2012b, 2013b), but no significant relationship was found in this present study, therefore Hypothesis 1 was not supported. Possible reason could be that participants were spread across different age groups (from 18 to above 71 years old) in the previous study (Proyer, 2013b), while only university students (ranged from 17 to 26 years old) were recruited in this current study. This smaller age range might explain why age is irrelevant to playfulness. Also, playfulness in general was considered to be a personality characteristic (Glynn & Webster, 1992) and was shown to be stable across

time and age (O'Brien & Shirley, 2001; Proyer, 2013b). So, especially with the age range in this study, the negative correlation between age and playfulness was not found.

A major finding in this present study is that subjective happiness has been found to be positively related to playfulness, and, conversely, depression has been found to be negatively correlated with playfulness. This provides full support for Hypothesis 2 and fits in with previous studies on playfulness and psychological well-being. For example, the current results echo findings from Proyer (2013a; 2013b), which demonstrated positive associations between playfulness, happiness, life satisfaction and an engaging life. In addition, the negative correlation of playfulness and depression further affirmed the value of playfulness on positive psychological functioning. These findings confirmed and provided more evidence for the potential benefits of adult playfulness.

Hypothesis 3 was well-supported as adult playfulness was found to be positively correlated with sense of humor, importance of humor and self humor. The link between sense of humor and playfulness is consistent with previous findings from Schaefer and Greenberg (1997), which suggested playfulness as a broader construct than humor and demonstrated a moderately positive relationship between playfulness and sense of

humor. These findings also converge well with the descriptions of playful individuals like “humorous” and “funny” provided by Barnett (2007). The positive relationship between playfulness and importance of humor also suggests that playful individuals not only tend to have higher sense of humor, but also believe that humor is vital and important.

Moreover, it was shown that playfulness was related to the ratings of parental humor. The positive relationship between mother’s and father’s humor and playfulness may indicate that parents who are more humorous would foster playfulness within an individual. However, it could also indicate that playful people tend to see their parents as funnier. Due to this complication, further studies could extend investigation on this matter.

Hypothesis 4 suggested that adult playfulness is positively correlated with affiliative, self-enhancing and self-defeating humor. Self-defeating humor was predicted to be positively correlated with playfulness because playfulness was found to be related to more joy of being laughed at and less fear of being laughed at in the previous studies (Proyer, 2012a). However, current results showed that only affiliative and self-enhancing humor were positively correlated with playfulness, so Hypothesis 4

was only partially supported.

In Attempt to further investigate the relationship between humor styles and playfulness, a hierarchical regression analysis was also conducted. The results showed that only the two adaptive humors significantly predicted adult playfulness. These findings provided new information regarding how playful individuals tend to use their humor in everyday life. It can be concluded that highly playful people prefer to use affiliative and self-enhancing humor over self-defeating and aggressive humor.

For the relationships between humor styles and well-being indicators, it was revealed that adaptive humor styles are positively correlated with happiness and are negatively correlated with depression. These findings are consistent with other studies and provided very good support for Hypothesis 5. Based on previous literatures, adaptive humor styles were positively related to overall subjective well-being (Tümkaya, 2011), cheerfulness and optimism (Martin et al., 2003), life satisfaction and positive affects (Karou-ei, Doosti, Dehshiri & Heidari, 2009); while lower depression was also linked with the two adaptive humor styles (Kuiper & McHale, 2009). Thus, the current results corresponded to these previous studies.

For maladaptive humor styles, self-defeating and aggressive humor were both positively correlated with depression, but only aggressive humor was negatively correlated with subjective happiness. Therefore, Hypothesis 6 was partially supported. However, these findings were not surprising because of the abundant amount of studies demonstrating that maladaptive humor styles were mostly related to negative psychological constructs like higher depression (Martin et al., 2003).

Hypothesis 7 mentioned that the relationship between adult playfulness and well-being indicators (happiness and depression) are mediated by humor. The rationale behind such is that adults are likely to express playfulness through humor (Barnett, 2007), and thus, the effect of playfulness on one's well-being could be explained by frequent display of humor. In the attempt to understand how humor might have influenced the relationship between playfulness, happiness and depression, two multiple mediation analyses were conducted. It was revealed that the two adaptive humor styles, importance of humor and mother's humor significantly mediated the positive relationship between playfulness and happiness. On the other hand, the two adaptive humor styles also significantly mediated the negative relationship between playfulness and depression. These findings gave good support for Hypothesis 7 and the views that humor should be a component of playfulness (Guitard et al., 2005;

Lieberman, 1977). The implication of these mediating effects is that humor (mostly affiliative and self-enhancing humor) could strengthen the relationship between playfulness and happiness as well as the relationship between playfulness and depression. It means that humor does not only promote happiness for highly playful people, but also allow them to avoid feeling depressed.

4.1 Limitations and Suggestions

There are several limitations in this study. Firstly, participants were recruited through convenient sampling, which did not ensure the balance in gender. Particularly in the Guangdong sample, there were quite a lot more female participants than male ones. Also, many of the participants were asked to fill in the questionnaires after class or around university campus, so their responses might have been affected by the surrounding distractions. A more systematic approach to recruit participants should be employed, and a more controlled environment should be provided to participants when they fill in the questionnaires.

Secondly, all participants in this study were university students, and that might not represent the general picture of adult playfulness as a personality trait among all populations.

Thirdly, this study did not control for possible confounding variables, like family background, social status, and religious beliefs. Future studies should take those into consideration.

Fourthly, this study was a self-reported-based survey study, and it cannot guarantee that participants were not biased or deceiving the accurate information when answering the items in the questionnaire. A combination of different methods of assessments is encouraged for future studies.

Last but not least, this study focused and measured only the global adult playfulness. It could be useful to include other instruments that allow investigation of different facets of playfulness, and to relate these facets to humor variables. If such, it could provide a more in-depth understanding of the relationship between playfulness and humor.

4.2 Conclusion

As problematic as it may appear at this stage, this current study scored itself as a pioneer of its kind in Chinese context. Therefore, the presented findings should pave way for further exploration of the relationship between adult playfulness, humor and psychological well-being in Chinese societies.

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