

## **Adult playfulness and its relationship to humour, subjective happiness and depression: A comparative study of Hong Kong and Mainland China**

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### *Abstract*

Playfulness in adults has been shown to be beneficial to different aspects of well-being, but adult playfulness remains an understudied concept, especially in Chinese society. To address this gap in research, this study investigated adult playfulness and its relationship with humour, 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. The results revealed positive correlations between adult playfulness, sense of humour, adaptive humour styles, the importance of humour, self-humour and subjective happiness. A negative correlation between adult playfulness and self-rating depression was also found. Hierarchical regression analysis also showed that the two adaptive humour styles were strong predictors of adult playfulness. The relationship between adult playfulness and subjective happiness was mediated by adaptive humour styles, the importance of humour and mother's humour, whereas the relationship between adult playfulness and depression was mediated by adaptive humour styles. This study provides initial details of Chinese playfulness and further confirms the value of playfulness in psychological well-being. Suggestions for future studies are also discussed.

### **Introduction and Literature Review**

Play is an officially enlisted survival and development right for every child according to the United Nations Children's Fund (UNICEF, 2005). There is little doubt that play has a vital role in the process of human development, especially during childhood. Play research investigates play not merely as a pleasurable activity but also discusses the concept behind play, playfulness, which commonly involves 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 demonstrates the various positive impact 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 an understudied research area in psychology (Guitard, Ferland & Dutil, 2005; Proyer, 2012a), and related studies set in a Hong Kong or Chinese context in general are even rarer. This study therefore aims to provide details of Chinese adult playfulness, and to seek further evidence supporting the value of adult playfulness by investigating its relationship with humour, subjective happiness and depression among Hong Kong and Guangdong university students.

### ***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). Decades of researches have demonstrated different forms of play activities to be 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) and physical fitness (Pellegrini & Smith, 1998). Lloyd and Howe (2003) showed that the experience of solitary play is related to the ability to think divergently and, 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, behavioural and physical problems (Reddy, Files-Hall & Schaefer, 2005). For instance, play-based intervention has found effective in reducing hospital fears (Rae, Worchel, Upchurch, Sanner & Daniel, 1989), darkness phobia (Santacruz, Mendez & Sanchez-Meca, 2006), separation anxiety (Barnett, 1984) and aggressive behavior (Ray, Blanco, Sullivan, & Holliman, 2009).

The research mentioned above approaches play in terms of behaviours or action, others argue that it is more important to investigate the characteristic personality of players - 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 they can actually play. Playfulness gives children the capacity to see a situation or activity as fun and enjoyable, and therefore, play occurs.

Although the existence of playfulness is acknowledged, the qualities constituting playfulness in children are different according to different authors. Lieberman (1965) was one of the pioneers of studying playfulness in a group of kindergartners, and she

identified five key qualities of playfulness: 1) physical spontaneity - how well a child coordinates and moves their 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 their imagination and creativity in play; 4) manifest joy – the child’s expressions of enjoyment during play; and 5) sense of humour - the generation and appreciation of funny stories or jokes. Barnett (1990) agreed with the inclusion of those five qualities and developed a valid and reliable measure (the 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 a sense of humour in her assessment of playfulness. Although components differ between authors, pleasure and spontaneity have been consistently suggested as contributing to playfulness in children, and a sense of humour and imagination have also been frequently mentioned (Guitard et al., 2005).

Despite the variations in what underlies playfulness in children, the validated measurements of children’s playfulness have been found 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 to an 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 behaviours (Saunders, Sayer & Goodale, 1999), and a confident and imaginative personality (Barnett, 1991). With such 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?

### ***Playfulness in Adults***

Research focusing on playfulness in adults is limited. Perhaps this is partially due to the notion that play is a child’s occupation (Parham & Primeau, 1997). Indeed, “an adult 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 displays of playfulness (or play in general) are more acceptable for children than adults (Lieberman, 1977). In terms of playfulness, however, it is believed to be rooted in our personality (Bozionelos & Bozionelos, 1999; Glynn & Webster, 1992) and to be relatively stable across time (Lieberman, 1977; O’Brien & Shirley, 2001; Proyer, 2013b). As a personality trait, playfulness is likely to exert its influence 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 give up most of their play activities from childhood and convert these activities into a playful attitude, playfulness. Recently, Proyer (2013b) found that playfulness existed in all age groups and demonstrated a strong relationship with a list of well-being indicators. Still, adult playfulness remains an understudied field in psychology; further investigation of

the meaning of playfulness among adults is warranted (Barnett, 2007).

### ***Conceptualising and Defining Adult Playfulness***

As with children's playfulness, there is a lack of consensus when it comes to conceptualising 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's playfulness. Spontaneity and cheerfulness were found to be descriptors for both children and adult playfulness, but impulsiveness has been suggested as 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 a manifestation of imagination), curiosity, sense of humour, pleasure and spontaneity, and Glynn and Webster (1992) suggested that expressiveness, fun and silliness were components of adult playfulness.

In spite of differences in the components that 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 provided a basis for later research 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, the 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 using 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).

### ***Demographics of Adult Playfulness***

In general, there is no gender difference in playfulness among adults across different age groups. Although there is an exception that reports inconsistent results (Glynn & Webster, 1992), gender differences 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 greater age is linked to decreased overall playfulness.

No gender difference is therefore expected for playfulness in the current study, and a minor but significant negative correlation between age and playfulness is anticipated.

### ***Adult Playfulness and Psychological Well-being***

Previous studies have consistently revealed that adult playfulness is positively associated with indicators of 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). It has been suggested that playfulness is strongly linked to intrinsic motivation (Amabile, Hill, Hennessey & Tighe, 1994), and that doing things for 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 of positive affects (DeNeve & Cooper, 1998). Flow experiences (an indicator of engagement) and positive effects are two of the core elements of flourishing in the well-being theory proposed by Seligman (2011), and suggests a possible link between adult playfulness and flourishing. It has been suggested that more flow experiences are one of the few ways to induce long-lasting happiness (Lyubomirsky, 2008).

Playfulness has long been linked with the 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 colleagues (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 in 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 burned out by stress (Guitard et al., 2005). University students also considered more playful were shown to actively seek companionship and to lift their mood through leisure (Qian & Yarnal, 2011). This implies that playful individuals may have more positive relationships in their lives, and it is worth noting that a positive relationship is an element that contributes to flourishing (Seligman, 2011). Lyubomirsky (2008) also saw investing in social relationships as a happiness-inducing activity.

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

Playfulness is also closely related to sense of humour (Barnett, 2007; Guitard et al., 2005; Proyer & Ruch, 2011). Playful individuals encounter humour through jokes and see the funnier side of life. When they are exposed to these humorous stimuli, they are likely to have an increased positive mood (Szabo, 2003).

The benefit of adult playfulness to 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 to happiness (Schiffirin & Nelson, 2010), more playful adults may be more likely to report higher levels of happiness due to their lower levels 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 contribute to this kind of coping pattern (Tegano, 1990). These findings provided evidence of the role of adult playfulness in resilience and better psychological well-being.

In addition to its associations with well-being indicators, 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 as a key characteristic that play therapists should possess in order to maximise the therapeutic outcome (Schaefer & Greenberg, 1997).

Based on previous studies, adult playfulness was expected to be positively correlated with the measure of happiness. Conversely, measures of depression were predicted to be negatively correlated with playfulness. Measurements of depression are included because they 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, a negative correlation between playfulness and depression may be expected. The inclusion of both happiness and depression measures may further confirm the positive impact that playfulness has on psychological functioning.

### ***Humour: A Closely Related Construct***

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

Humour is as difficult to define as playfulness is. Humour can be broadly described as a concept that consists of cognitive actions to create and perceive amusing stimuli and behavioural tendencies to say or do funny things or make others laugh (Martin, 2007). From a trait perspective, humour studies deal with individual differences in humour, the sense of humour, which involves a trait that allows individuals to perceive, express and

enjoy humorous things (Martin, 2000).

There have been many attempts to study the benefits of humour for well-being. In earlier decades, findings from those attempts were often the subject of 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 measures of humour did not differentiate between its bright, adaptive side and its dark, maladaptive side. The Humour Style Questionnaire (HSQ) was thus developed, which measures both the positive and negative side of humour. Studies of humour and well-being have been relatively successful following the development of the HSQ (e.g. Ozyesil, 2012; Tümkaya, 2011; Kuiper & McHale, 2009).

Humour Style Questionnaire (Martin et al., 2003) measures the four functions or styles of humour: 1) self-enhancing; 2) affiliative; 3) aggressive; and 4) self-defeating humour. These humour styles represent how an individual uses humour in daily life. A high score in self-enhancing humour means they often use humour 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 humour, their use of humour is with the aim of developing or fostering social relationships and resolving social tensions (Lefcourt, 2001). In the case of aggressive humour, these individuals are likely using humour to ridicule, offend or downgrade others without caring for others' feelings (Martin et al., 2003). Lastly, people scoring high in self-defeating humour would frequently degrade or put themselves down through jokes in order to amuse others (Martin et al., 2003). Self-enhancing humour and affiliative humour are known as adaptive humour styles due to their beneficial nature to psychological well-being, and aggressive and self-defeating humour are maladaptive humour styles because of their destructive nature (Martin et al., 2003). This categorization and measurement of humour allows researchers to associate a particular type of humour with other well-being indicators, and thus, a better understanding in the role of humour in one's well-being.

Adaptive humour styles have been strongly 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 humour styles were mostly related to negative psychological constructs, such as 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 humour styles (affiliative and self-enhancing humour) would be positively correlated with happiness, and negatively correlated with depression. In contrast, maladaptive humour styles (self-defeating and aggressive humour) were expected to be negatively correlated with happiness, and positively correlated with depression.

Previous humour and playfulness studies revealed that the two constructs have similarities in terms of their nature and contribution to better psychological well-being, but there have been insufficient studies attempting to investigate how playful individuals use humour in their everyday life. Questions such as “do highly playful individuals use significantly more adaptive humour styles and fewer maladaptive ones?” remain unexplored. The broader unresolved issue here is how humour and playfulness are related. This current study thus attempts to take the initiative by testing how adult playfulness relates to humour, especially the four humour styles. A measure for (overall) sense of humour is also included in this study.

### ***Linking the Two Constructs: Playfulness and Humour***

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

From the theoretical viewpoint, a sense of humour is frequently mentioned as one of the core features underlying playfulness, rather than the other way around. Previous literature has included a sense of humour as one of the components that underlie playfulness (Guitard et al., 2005; Lieberman, 1977; Schaefer & Greenberg, 1997). McGhee (2010) suggested humour as a play of ideas and that the prerequisite to humour is a playful mindset. Schaefer and Greenberg (1997) argued that playfulness is a broader construct than humour, and found a moderate positive correlation between playfulness and the measure of sense of humour. It has also been suggested that playful individuals are likely to display their playful behaviour through jokes, teasing, clowning and being silly (Barnett, 2007). Based on previous studies, it seems that humour is frequently used by playful individuals in their daily lives, so a positive relationship between adult playfulness and sense of humour is expected in this current study.

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

In terms of humour styles, there has been a lack of previous studies directly testing each their relationships to playfulness, but previous well-being studies have shown that both adaptive humour and playfulness are beneficial to psychological well-being (e.g. Proyer, 2013b; Tümkaya, 2011). With humour being considered as underlying feature of



playfulness, it was predicted that adaptive humour would be positively correlated with playfulness due to their similar positive nature in psychological well-being.

A minor but significant positive correlation was also expected between self-defeating humour and playfulness. This is because playful individuals generally are not afraid to be silly and make fun of themselves. Indeed, playfulness was demonstrated to be related to less fear of being laughed at and more joy in being laughed at (Proyer, 2012a). It has also been proposed that silliness is a major feature of adult playfulness (Glynn & Webster, 1992). Barnett (2007) further suggested that adults' playful behaviour could manifest through being silly. Since self-defeating humour involves amusing others by making fun of oneself (e.g. telling embarrassing stories about oneself to make others laugh), a positive relationship between self-defeating humour 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 humour and playfulness. Although Proyer (2012a) found a positive correlation between the joy of laughing at others and playfulness, others have disagreed. For instance, the descriptor "aggressive" has not been found to be relevant to adult playfulness (Barnett, 2007). A sense of humour that involves hurting or being mean to others is not related to playfulness (Guitard et al., 2005). It is therefore believed that playful individuals might only laugh at others through friendly teasing instead of actually insulting jokes. Aggressive humour should not be related to playfulness.

### ***Humour 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, few researchers have attempted to investigate how their relationships work. For instance, why and how does playfulness link with happiness? As described, adults transform most of the play behaviour that they had as children into a playful attitude (Solnit, 1998). This means that the variety of play behaviours decreases among adults (e.g. most adults stop playing with their childhood toys or playing hide-and-seek). Playful adults are likely to express their playfulness using a different approach. According to Barnett (2007), playful adults are likely to display playful behaviours through means of humour. 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 adult well-being. To test this, mediation analyses have been conducted to investigate the possible indirect effect of humour variables, explaining the relationship between playfulness, happiness and depression.

**Conceptual Framework and Hypotheses**

Adult playfulness is an underexplored research area in contemporary psychology, and Chinese-based studies of this topic are even rarer. The goal of this study is thus to investigate the relationship between adult playfulness, humour, 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). Secondly, it investigates whether playfulness is related to higher subjective happiness and lower depression. Thirdly, relationships between humour variables and playfulness are examined. The conceptual framework for this study is presented and summarised in Figure 1.

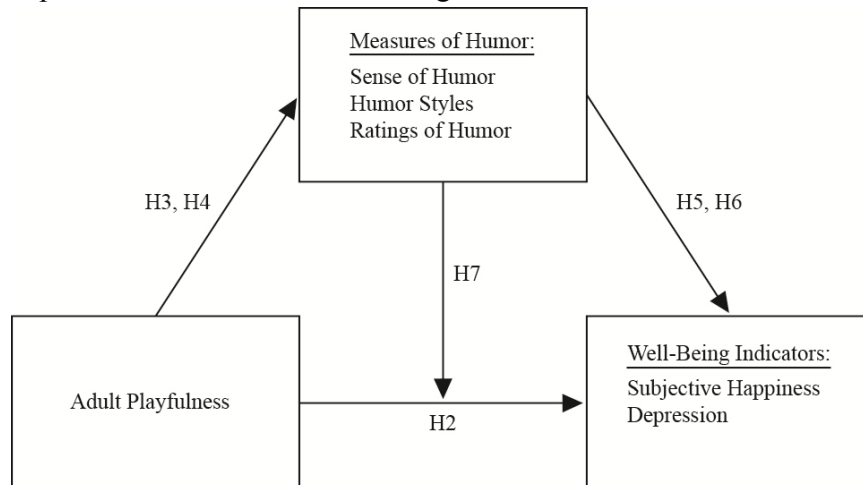


Figure 1. The conceptual framework of this study.

The following are the hypotheses of 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 a sense of humour, the importance of humour and self-humour.
- Hypothesis 4:* Adult playfulness is positively correlated with affiliative humour, self-enhancing humour and self-defeating humour.
- Hypothesis 5:* Adaptive humour styles are positively correlated with subjective happiness and are negatively correlated with depression.
- Hypothesis 6:* Maladaptive humour 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 humour.

## Methodology

### *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's student). The majority of Hong Kong students were sampled from the City University of Hong Kong and a 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.

### *Materials/Measures*

The data for this study was collected by means of self-reported questionnaires. 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 humour, their own humour (self-humour) and their parents' sense of humour. They were then required to nominate any three individuals that they considered "humorous" and three individuals that they saw as "playful". Note that the nomination section 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: the Short Measure for Adult Playfulness (SMAP), Multidimensional Sense of Humour Scale (MSHS), Humour Style Questionnaire (HSQ), Self-Rating Depression Scale (SDS) and Subjective Happiness Scale (SHS).

***The 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 in a 4-point Likert response format. The scale was then revised to a 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 remaining 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 consistency (Cronbach's  $\alpha$  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 had similar understanding of the term before answering. The Cronbach's  $\alpha$  was .82 in this study.

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

**The Humour Style Questionnaire** (HSQ; Martin et al., 2003) was used to measure individuals' uses of humour. The 32-item scale in a 7-point Likert response format measures the extent to which people use the four styles of humour in their daily life. The four humour styles measured in the scale are: 1) affiliative humour; 2) self-enhancing humour; 3) aggressive humour; and 4) self-defeating humour. 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. Cronbach's alpha in this study ranged from .70 to .81, and .78 as a whole.

**The Zung Self-Rating Depression Scale** (SDS) (Zung, 1965) was used to assess levels of depression. The scale has been commonly used worldwide and includes 20 items in 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 (ranging from 20-80) was used in the analysis. The translated Chinese version of the scale was used in this study, with the Cronbach's  $\alpha = .85$ .

**The Subjective Happiness Scale** (SHS) was developed by Lyubomirsky and Lepper (1999) to measure individuals' happiness level with a subjectivist approach. It consists of four items on 7-point Likert scale. All but the fourth item were reverse coded. The authors demonstrated high internal consistency (Cronbach's  $\alpha$  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  $\alpha = .80$ .

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

### ***Procedure***

A pilot test was conducted before the data collection to gather feedback on the designed questionnaire. Ten undergraduate students at the 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 finalised 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 a voluntary basis. With their consent, they were given a questionnaire that included the mentioned sections (see *Materials/Measures*), and took around 10 to 15 minutes to complete. Upon the completion, they were debriefed about the purpose of the study. All completed questionnaires were collected once the participants had finished.

### ***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, humour variables and well-being variables. Multiple regression was conducted to predict playfulness with humour styles. An SPSS programme, PROCESS was employed for mediation analysis (Hayes, 2012, 2013). The programme used the bootstrapping method to test possible indirect, mediating effects. Note that due to missing information, the number of participants varied slightly in the analysis.

## **Results**

### ***Descriptive Statistics for Demographic Variables***

Table 1 displays the demographic information of the participants in this current study. Of 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 were aged from 17 to 26 years, with 54.1% ( $n = 176$ ) 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

***Gender Differences in Adult Playfulness, Happiness and Depression***

Table 2 presents the gender differences in adult playfulness, subjective happiness and depression. No gender difference in adult playfulness was demonstrated 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,  $t(304) = -.68, p = .50$ , or for Guangdong students  $t(73.54) = .55, p = .58$ . 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 ( <i>n</i> = 166)				
	Male ( <i>n</i> = 66)		Female ( <i>n</i> = 99)		<i>t</i> -value
	Mean	<i>SD</i>	Mean	<i>SD</i>	
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 ( <i>n</i> = 159)				
	Male ( <i>n</i> = 48)		Female ( <i>n</i> = 105)		<i>t</i> -value
	Mean	<i>SD</i>	Mean	<i>SD</i>	
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 ( <i>N</i> = 325)				
	Male ( <i>n</i> = 114)		Female ( <i>n</i> = 203)		<i>t</i> -value
	Mean	<i>SD</i>	Mean	<i>SD</i>	
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.

**Regional Differences in Adult Playfulness, Happiness and Depression**

In order to gain more insight into 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 noting 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 scores for self-rating depression than Guangdong students ( $M = 36.17$ ,  $SD = 8.71$ ),  $t(309) = 4.45$ ,  $p < .001$ .

To summarise, 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 ( $n = 159$ )		t-value
	Mean	SD	Mean	SD	
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 Humour and Humour Styles

Table 4 shows the gender differences in sense of humour and humour styles. Overall, there was no gender difference in sense of humour ( $t[310] = -.75$ ,  $p = .45$ ), affiliative humour ( $t[305] = -1.45$ ,  $p = .15$ ) or self-enhancing humour ( $t[313] = -.93$ ,  $p = .35$ ). Males ( $M = 28.29$ ,  $SD = 7.24$ ) scored significantly higher on self-defeating humour 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 humour than females ( $M = 23.66$ ,  $SD = 6.67$ ),  $t(314) = 3.08$ ,  $p < .01$ .



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

No gender difference was detected in Hong Kong students for sense of humour or any humour style ( $p > .05$ ).

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

Hong Kong Students ( <i>n</i> = 166)					
	Male ( <i>n</i> = 66)		Female ( <i>n</i> = 100)		<i>t</i> -value
	Mean	<i>SD</i>	Mean	<i>SD</i>	
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 ( <i>n</i> = 159)					
	Male ( <i>n</i> = 48)		Female ( <i>n</i> = 104)		<i>t</i> -value
	Mean	<i>SD</i>	Mean	<i>SD</i>	
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 ( <i>N</i> = 325)					
	Male ( <i>n</i> = 114)		Female ( <i>n</i> = 203)		<i>t</i> -value
	Mean	<i>SD</i>	Mean	<i>SD</i>	
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 Humour Scale; Humour styles = HSQ (affiliative, self-enhancing, self-defeating and aggressive humour).

**Regional Differences in Sense of Humour and Humour Styles**

Table 5 presents the results of the regional differences in sense of humour and humour styles between Hong Kong and Guangdong students. No regional difference was found for sense of humour between the two groups of students,  $t(271.38) = -1.01, p = .31$ . This was also true for affiliative humour; no difference was revealed between the two groups,  $t(279.04) = -.93, p = .36$ . Significant regional differences were detected for self-enhancing, self-defeating and aggressive humour, however. For self-enhancing humour, Guangdong students ( $M = 35.88, SD = 7.74$ ) scored significantly higher than Hong Kong students ( $M = 33.21, SD = 6.81$ ),  $t(318) = -3.25, p < .001$ . Hong Kong students ( $M = 28.28, SD = 7.05$ ) reported a higher score for self-defeating humour 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 humour than Guangdong students ( $M = 22.67, SD = 7.31$ ),  $t(300.64) = 4.77, p < .001$ .

Mindful of the regional and gender differences in humour, 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 Humour and Humour Styles

	Hong Kong Students ( <i>n</i> = 166)		Guangdong Students ( <i>n</i> = 159)		<i>t</i> -value
	Mean	<i>SD</i>	Mean	<i>SD</i>	
MSSH	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: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ; MSSH = Multidimensional Sense of Humour Scale; Humour styles = HSQ (affiliative, self-enhancing, self-defeating and aggressive humour).

**Correlations of Adult Playfulness, Humour, Happiness and Depression**

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

In 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 the tables)

were also conducted for playfulness, happiness and depression. The partial correlations 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 ( $r[306] = -.52, p < .01$ ), which confirmed their opposing nature. With playfulness positively correlated with happiness and negatively correlated with depression, Hypothesis 2 was fully supported.

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

For humour styles, it was confirmed that affiliative humour ( $r[308] = .53, p < .01$ ) and self-enhancing humour ( $r[316] = .40, p < .01$ ) were positively related to playfulness. Self-defeating humour, although 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 humour, but not with self-defeating humour. Lastly, there was no significant correlation found between playfulness and aggressive humour ( $r[317] = -.09, p = .13$ ).

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

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

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

Table 6.  
*Descriptive Statistics and Correlations among Age, Adult Playfulness, Measures of Humour, 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	-	-	-	.42**	--						
8. Importance	8.24	1.37	-.10	.26**	.35**	.38**	.21**	.17**	.01	-.10	--				
9. Self-humour	6.43	1.70	-.11	.45**	.57**	.53**	.36**	.12-	-.06	.45**	--				
10. Father humour	5.84	2.25	-.13*	.17**	.21**	.16**	.13*	.01	-.14*	.15**	.41**	--			
11. Mother humour	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**	-	-	-	-	.20**	.38**	-.13*	-	-.12*	-.06	-	--
				.22**	.32**	.37**	.38**				.18**			.52**	

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

### ***Predicting Playfulness with Humour Styles***

To further investigate the relationship between humour and adult playfulness, a hierarchical regression analysis was computed (see Table 7). Due to concern about the assumption of multicollinearity among different measures of humour, only the four humour styles were selected as humour 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 entered in the first step, to control their possible effects. It was revealed that demographics did not contribute significantly 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 humour styles (affiliative and self-enhancing) were introduced into the model. Along with demographics, the two adaptive humour 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 humour styles (aggressive and self-defeating) were also included in the analysis. The model significantly predicted playfulness ( $F[7, 298] = 19.59, p < .001$ ), but adding the two maladaptive humours 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 humour styles and controlling for demographics, adaptive humour styles seemed to be the only humour style that significantly predicted adult playfulness. Specifically, affiliative humour ( $\beta = .44, p < .001$ ) was shown to have higher predictive power than self-enhancing humour ( $\beta = .21, p < .001$ ).

Table 7.  
*Hierarchical Regression Analysis for Humour Styles Predicting Playfulness*

Variable	B	SE	$\beta$	t-value	R <sup>2</sup>	$\Delta R^2$
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; Humour styles = affiliative, self-enhancing, self-defeating and aggressive.

***Humour as a Mediator Between Adult Playfulness and Psychological Well-being***

In order to examine the possible mediating effects of humour variables on the relationship between adult playfulness and well-being indicators (subjective happiness and depression), multiple mediation analyses were conducted using 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 humour variables. It was shown that playfulness was significantly related to sense of humour (MSHS;  $B = 6.20, t = 10.44, p < .001$ ), affiliative humour ( $B = 3.64, t = 9.99, p < .001$ ) and self-enhancing humour ( $B = 2.47, t = 6.31, p < .001$ ), the importance of humour ( $B = .34, t = 4.37, p < .001$ ), self humour ( $B = .73, t = 8.37, p < .001$ ), father’s humour ( $B = .35, t = 2.83, p < .01$ ) and mother’s humour ( $B = .28, t = 2.43, p < .05$ ). Playfulness was again not related to aggressive humour ( $B = -.44, t = -1.15, p = .25$ ) or self-defeating humour ( $B = .10, t = .41, p = .80$ ).

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

In terms of mediating effects, affiliative humour (95%, CI[.00, .18]), self-enhancing humour (95%, CI[.08, .20]), importance of humour (95%, CI[-.02, -.00]) and mother's humour (95%, CI[.00, .06]) significantly mediated the relationship between playfulness and subjective happiness. The total mediating effect of humour 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 humour variables. It was revealed that depression was related to sense of humour ( $B = -.19, t = -5.04, p < .001$ ), affiliative humour ( $B = -.39, t = -6.42, p < .001$ ), self-enhancing humour ( $B = -.39, t = -6.25, p < .001$ ), aggressive humour ( $B = .43, t = 6.30, p < .001$ ), self-defeating humour ( $B = .18, t = 2.74, p < .001$ ) and self humour ( $B = -.72, t = -2.53, p < .05$ ).

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

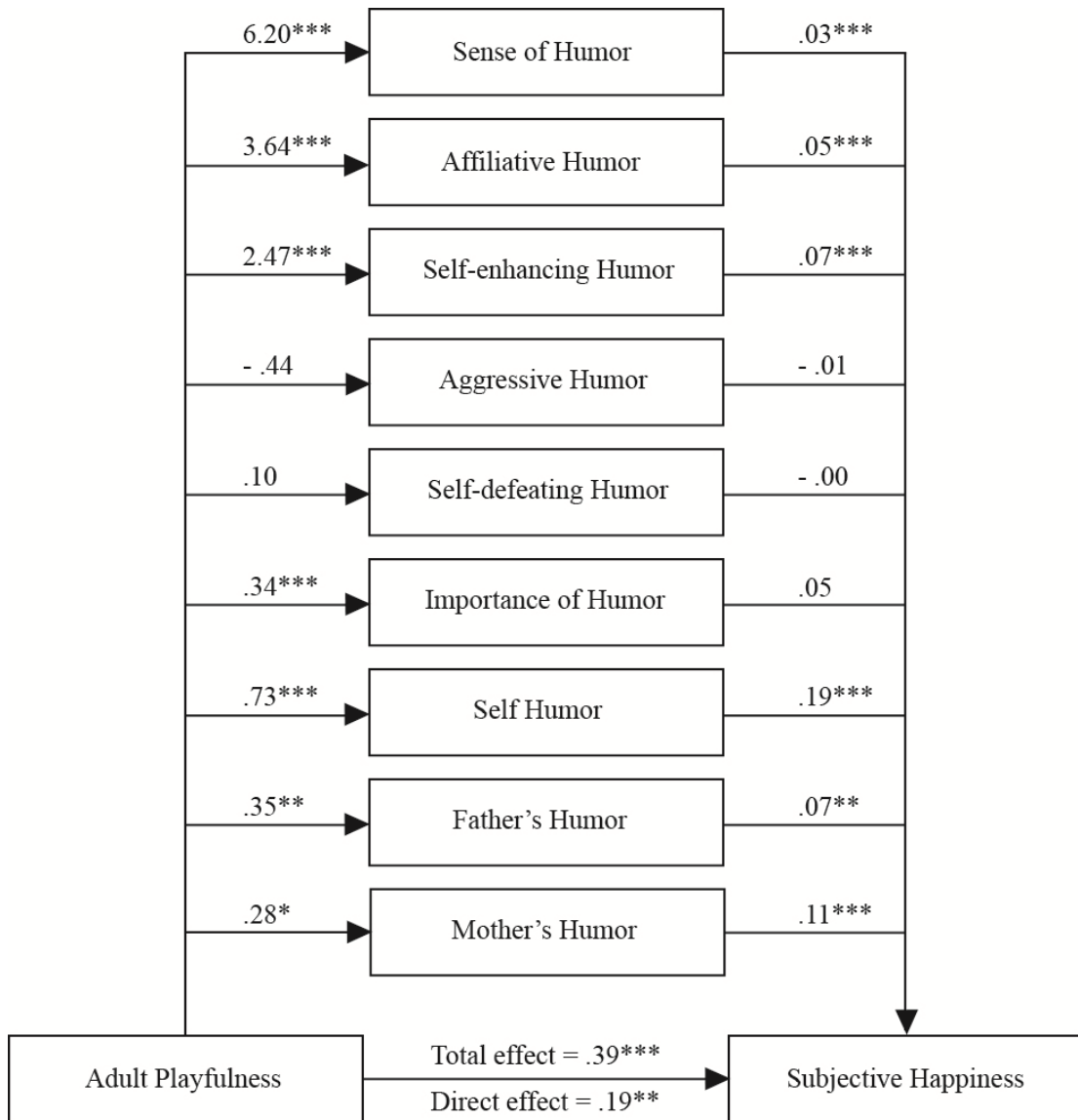
These results supported Hypothesis 7, which suggested that the relationships between playfulness, subjective happiness and depression are mediated by humour. See *Figure 2* and *Figure 3* for a graphic illustration of these relationships.



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

Independent variable (IV)	Mediating variable (M)	Dependent variable (DV)	Effect of IV on M		Effect of M on DV		Direct effect		Indirect effect: Effect of IV on IV through M			Total effect	
			<i>B</i>	SE	<i>B</i>	SE	<i>B</i>	SE	<i>B</i>	SE	95% CI	<i>B</i>	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 <sup>a</sup>	.05	.00 to .18		
	Self-enhancing		2.47***	.39	.07***	.01			.13 <sup>a</sup>	.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 <sup>a</sup>	.02	-.02 to -.00		
	Self humour		.73***	.09	.19***	.04			.02	.04	-.07 to .10		
	Father humour		.35**	.12	.07**	.03			.01	.01	-.02 to .04		
Mother humour		.28*	.11	.11***	.03			.02 <sup>a</sup>	.02	.00 to .06			

Note: *B* = unstandardised coefficient; CI = confident interval; controlled for age, gender and place of study; <sup>a</sup>significant at least at  $p < .05$ ; \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ; SMAP = Short Measure for Adult Playfulness; SHS = Subjective Happiness Scale; Humour Styles = Affiliative, Self-enhancing, Aggressive, Self-defeating humour; MSHS = Multidimensional Sense of Humour Scale; Importance = Perceived Importance of Humour.



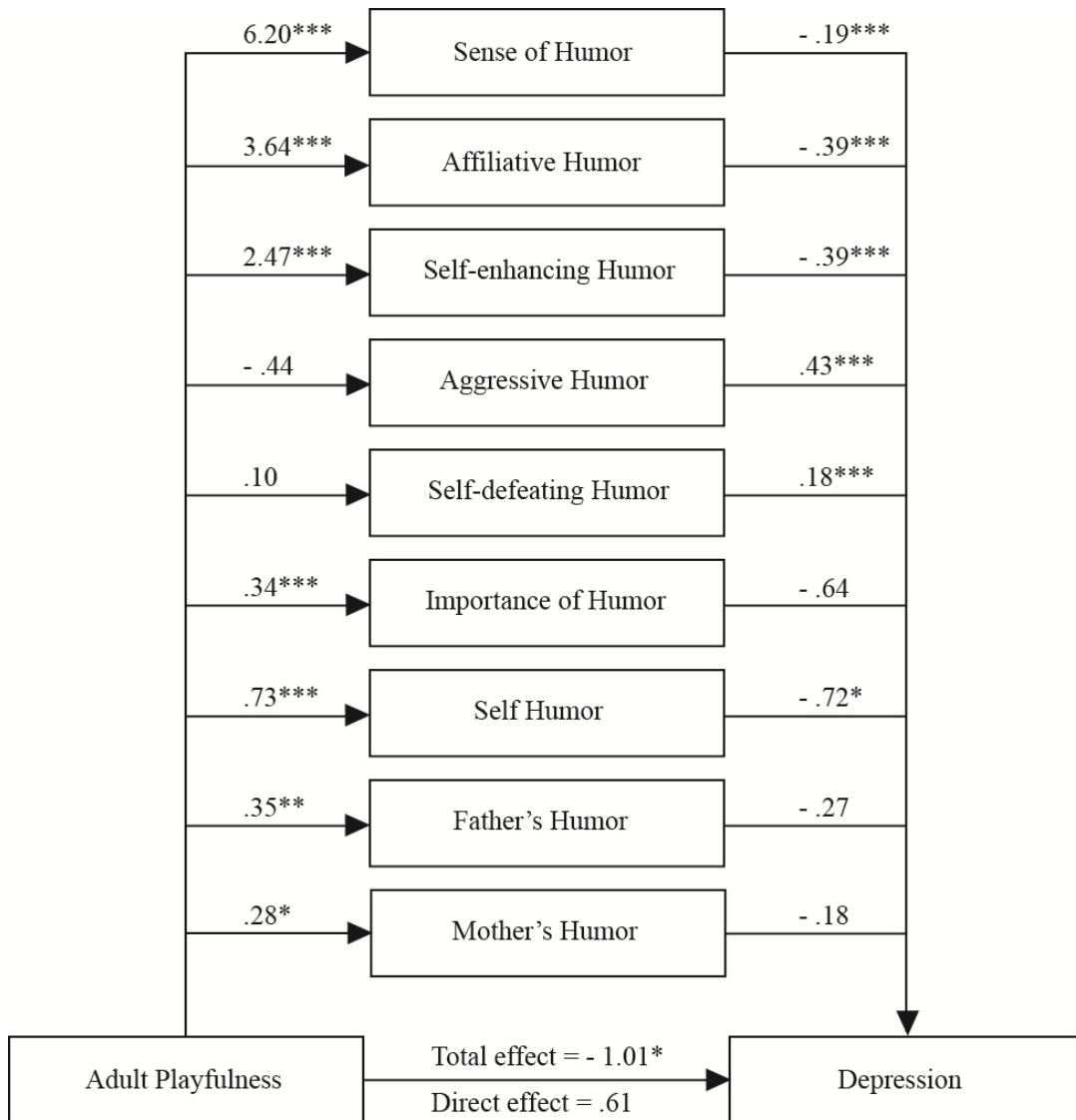
Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

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

Table 9. Multiple Mediation Analysis for the Effect of Adult Playfulness on Self-rating Depression Through Humour 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	
			<i>B</i>	SE	<i>B</i>	SE	<i>B</i>	SE	<i>B</i>	SE	95% CI	<i>B</i>	SE
(IV)	(M)	(DV)											
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 <sup>a</sup>	.37	-1.96 to -.47		
	Self-enhancing		2.47***	.39	-.39***	.06			-.79 <sup>a</sup>	.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 humour		.73***	.09	-.72*	.28			.21	.33	-.41 to .90		
	Father humour		.35**	.12	-.27	.22			-.07	.10	-.34 to .07		
	Mother humour		.28*	.11	-.18	.25			-.05	.09	-.31 to .08		

Note: *B* = unstandardised coefficient; CI = confident interval; Controlled for age, gender and place of study; <sup>a</sup>significant at least at  $p < .05$ ; \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ; SMAP = Short Measure for Adult Playfulness; SDS = Self-rating Depression Scale; Humour Styles = Affiliative, Self-enhancing, Aggressive, Self-defeating humour; MSHS = Multidimensional Sense of Humour Scale; Importance = Perceived Importance of Humour.



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

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

## Discussion

The present study answers the call from previous authors for further research 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 to humour, 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 humour was demonstrated and clarified. This study also served a pioneering role in exploring the relationships between playfulness and humour styles.

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

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

It was suggested that age was negatively related to adult playfulness (Proyer, 2012b, 2013b), but no significant relationship was found in this present study, therefore Hypothesis 1 was not supported. A possible reason for this could be that participants were spread across different age groups (from 18 to above 71 years old) in the previous study (Proyer, 2013b), and 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). Especially in the age range in this study, the negative correlation between age and playfulness was not found.

A major finding of this present study was 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 of 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. The negative correlation of playfulness and depression further confirmed the value of playfulness in 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 humour, importance of humour and self-humour. The link between sense of humour and playfulness is consistent with previous findings from Schaefer and Greenberg (1997), which suggested playfulness as a broader construct than humour and demonstrated a moderately positive relationship between playfulness and sense of humour. These findings also converge well with the descriptions of playful individuals as “humorous” and “funny” provided by Barnett (2007). The positive relationship between playfulness and the importance of humour also suggests that playful individuals not only tend to have stronger senses of humour, but also believe that humour is vital and important.

It was also shown that playfulness was related to the ratings of parental humour. The positive relationship between mother’s and father’s humour and playfulness may indicate that parents who are more humorous 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 would be helpful to extend investigation of this matter.

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

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

For the relationships between humour styles and well-being indicators, it was revealed that adaptive humour styles are positively correlated with happiness and negatively correlated with depression. These findings are consistent with other studies and provided very good support for Hypothesis 5. Based on previous studies, adaptive humour styles were positively related to overall subjective well-being (Tümekaya, 2011), cheerfulness and optimism (Martin et al., 2003), life satisfaction and positive affects

(Karou-ei, Doosti, Dehshiri & Heidari, 2009); and lower depression was also linked to the two adaptive humour styles (Kuiper & McHale, 2009). The current results thus correspond to these previous studies.

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

Hypothesis 7 suggested that the relationship between adult playfulness and well-being indicators (happiness and depression) is mediated by humour. The rationale behind this is that adults are likely to express playfulness through humour (Barnett, 2007), and thus, the effect of playfulness on one's well-being could be explained by frequent displays of humour. In the attempt to understand how humour might have influenced the relationship between playfulness, happiness and depression, two multiple mediation analyses were conducted. It was revealed that the two adaptive humour styles, importance of humour and mother's humour significantly mediated the positive relationship between playfulness and happiness. On the other hand, the two adaptive humour styles also significantly mediated the negative relationship between playfulness and depression. These findings gave good support for Hypothesis 7 and the view that humour is a component of playfulness (Guitard et al., 2005; Lieberman, 1977). The implication of these mediating effects is that humour (mostly affiliative and self-enhancing humour) could strengthen the relationship between playfulness and happiness as well as the relationship between playfulness and depression. It means that humour not only promotes happiness for highly playful people, but also allows them to avoid feeling depressed.

### **Limitations and Suggestions**

There are several limitations in this study. Firstly, participants were recruited through convenient sampling, which did not ensure a balance in gender. Particularly in the Guangdong sample, there were more female participants than male. 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 surrounding distractions. A more systematic approach to recruiting participants should be employed, and a more controlled environment should be provided for participants when they fill in the questionnaires.

Secondly, all participants in this study were university students, which 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, such as family background, social status, and religious beliefs. Future studies should take these into consideration.

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 assessment is encouraged for future studies.

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

### **Conclusion**

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

### **Biographic Note**

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