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# The structure and validity of directional measures of appearance social comparison among emerging adults in China<sup>☆</sup>



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#### ABSTRACT

We evaluated the structure and validity of the Upward Appearance Comparison Scale (UPACS) and Downward Appearance Comparison Scale (DACS) (O'Brien et al., 2009) in Chinese samples. In Study 1, principal component analysis on an initial sample (427 women, 123 men) and confirmatory factor analysis on another sample (447 women, 121 men) found that a 15-item, two component model had the best overall fit. Derived components had moderate correlations with most conceptually related measures and low correlations with less conceptually related indices. Study 2 participants (310 women, 201 men) completed the UPACS and DACS as well as measures of disordered eating, fatness concern, and negative affect; they were re-assessed one year later. Baseline UPACS scores predicted changes in disordered eating for women and fatness concerns for men, independent of initial disturbances, but DACS responses were not related to outcomes. Findings highlighted the potential utility of derived UPACS and DACS within a Chinese context.

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#### Introduction

Social comparison is a possibly innate process that helps people to understand ambiguous circumstances and evaluate their attitudes, attributes and abilities with those of others (e.g., Buunk & Gibbons, 2007; Festinger, 1954; Wood, 1996). While "similar" others are often sought as targets of social comparisons, "downward" comparisons with less skilled or less fortunate others may be made to improve perceptions of one's self or circumstances (Wills, 1981) and "upward" comparisons with more skilled or more fortunate others can reflect a desire to improve one's status or skills (Collins, 1996).

Appearance social comparisons have had a central role in recent theory and research on body image disturbances. For example, frequent physical appearance comparisons with other people and media images have been linked to body dissatisfaction, weight regulation, and disordered eating (e.g., Jones, 2001, 2004; Keery, Van den Berg, & Thompson, 2004; Shroff & Thompson, 2006; Thompson, Coovert, & Stormer, 1999; van den Berg, Thompson,

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Obremski-Brandon, & Coovert, 2002), as well as explicit and implicit anti-fat attitudes (O'Brien, Hunter, Halberstadt, & Anderson, 2007).

Recently, O'Brien et al. (2009) developed directional measures to evaluate the potentially distinct effects of upward and downward appearance comparisons on attitudes and functioning among Australian university students (60% women). Principal components analyses (PCA) resulted in a 10-item Upward Physical Appearance Comparison Scale (UPACS) that assesses comparisons of oneself with more physically attractive others and an eight-item Downward Physical Appearance Comparison Scale (DACS) that reflects comparisons of oneself with others judged to be less physically attractive. The scales were found to have satisfactory internal consistency, stability over two weeks, and construct validity. For example, relative to DACS scores, UPACS scores had stronger relations to negative appearance evaluations and eating problems. Conversely, DACS scores had stronger links with anti-fat attitudes. Subsequently, Vartanian and Dey (2013) reported that both the UPACS and DACS have high alphas, modest correlations with age and body mass index (BMI), and moderate associations with a media ideal internalization scale among university-age Australian women.

Although each measure has promise, O'Brien et al. (2009) acknowledged the scales should be evaluated more fully in diverse samples. Because research on the UPACS and DACS has been limited to Australian samples, it is not clear whether they are structurally equivalent and valid in other cultures. Appearance comparisons

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are highly relevant in collectivist nations such as China where sensitivity to standards within one's social network are important to self-definitions, useful for achieving personal ends, and crucial for gaining social approval (Jung & Lee, 2006). Notably, body dissatisfaction and disordered eating have become increasingly common in Chinese samples (e.g., Chen & Jackson, 2008; Chen, Jackson, & Huang, 2006; Jackson & Chen, 2010b), and frequent appearance comparisons correlate reliably with such concerns (Chen, Gao, & Jackson, 2007; Chen & Jackson, 2012; Jackson & Chen, 2007, 2008c, 2008d, 2010b). Hence, the utility of directional appearance comparison scales warrants consideration in this cultural milieu.

Another issue of note regarding the UPACS and DACS was their high correlation with one another (r=.66) in O'Brien et al.'s (2009) sample. This correlation indicated people who made frequent upward appearance comparison also made more downward comparisons. As a result, unique correlates of elevations in upward versus downward comparisons may be obscured by substantial overlaps the scales have with appearance comparison frequency. While brief situational effects of appearance comparison direction can be illuminated through experimental manipulations involving exposure to upward or downward comparison targets (e.g., Galioto & Crowther, 2013), identifying and comparing subgroups reporting predominant upward versus predominant downward appearance comparison tendencies is a strategy that may clarify less contextually bound correlates of each tendency.

On one hand, the tendency to make upward comparisons with more physically attractive others should correspond to valuing unrealistic attractiveness ideals and heightened body image/eating disturbances (e.g., Keery et al., 2004; Leahey, Crowther, & Mickelson, 2007; Myers, Ridolfi, Crowther, & Ciesla, 2012), while downward comparison tendencies might correlate with positive self-concept (Wills, 1981). On the other hand, downward comparisons with the less fortunate are sometimes made by overwhelmed people to protect self-esteem or bolster optimism about their circumstances, while upward comparisons with "better-off" peers are more likely to be made, among people whose self-esteem is secure, to improve skills or strive for growth (see Collins, 1996). Assessing differences between groups with stronger upward versus stronger downward appearance comparison tendencies may help to clarify experiences unique to each tendency.

Finally, prospective studies have identified frequent appearance comparisons as a risk factor for later increases in body image and eating concerns (e.g., Chen & Jackson, 2009a, 2009b; Jackson & Chen, 2008a, 2011; Jones, 2004). However, to our knowledge, prospective effects of appearance comparison direction have been limited to intervals of several days rather than months or years (e.g., Leahey et al., 2007; Myers et al., 2012). For example, Leahey et al. (2007) found that American college women who compared themselves to more attractive reference group members experienced more negative affect, body dissatisfaction, and thoughts of exercising over one week, while downward appearance comparisons with others perceived as less attractive predicted decreases in negative affect and body dissatisfaction. Extensions are needed to assess long-term ramifications of upward and downward appearance comparison on these outcomes.

Based on this overview, two studies evaluated the UPACS and DACS in Chinese samples. Study 1 assessed the structure of UPACS and DACS items via PCA and confirmatory factor analysis (CFA) on independent samples as well as the construct validity of derived components. In addition, differences between subgroups with predominant upward versus predominant downward appearance comparison tendencies were explored on demographic and psychosocial measures common to both samples. In Study 2, we evaluated the status of responses on derived UPACS and DACS as risk factors for exacerbations in eating disturbances, fatness concerns, and negative affect over 12 months in a third sample.

#### Study 1

Following from O'Brien et al.'s (2009) findings, we hypothesized that the structure of UPACS and DACS items would reflect moderately correlated, distinct upward and downward appearance comparison components. Furthermore, based on the premise that derived appearance comparison components should correlate with theoretically related constructs from the same content domains (i.e., body image influences/outcomes or social comparison processes), it was hypothesized that UPACS, in particular, and DACS, to a lesser extent, would have significant positive correlations with other measures of appearance comparisons, pressure, and investment, disturbances in eating and body image, and selfesteem contingent on friendship quality (e.g., Patrick, Neighbors, & Knee, 2004). Given that preferences for attractiveness ideals reflect upward comparisons, UPACS scores were expected to have positive relations with thin feminine ideal preferences while DACS scores were not.

Conversely, based on O'Brien et al. (2009), UPACS scores were expected to have a weaker positive correlation with anti-fat attitudes than DACS scores would. Appearance comparison components were also expected to have weaker correlations with sociodemographics (age within emerging adulthood, household income) and general psychological constructs (e.g., individual selfworth, coping strategies used for non-specific stressors, positive affect) that lie outside the domains of body image and social comparison. The exception to this premise was negative affect which was expected to have moderate correlations with both UPACS and DACS scores due to its inclusion in models of disordered eating (Stice, 2001) and moderate relations to other sociocultural measures and eating problems in Chinese adolescents (e.g. Jackson & Chen, 2011).

#### Method

#### Participants.

**PCA sample.** Participants were first year students (427 women, 123 men) attending Southwest University (SWU), Chongqing. They ranged in age between 16 and 24 years (M = 19.35 years, SD = 1.04) and were predominantly of Han majority ethnicity (84.73%), or members of Zhuang (3.09%), Miao (2.90%), Tujia (2.72%), or one of 12 other ethnic minorities. The sample had a mean body mass index (BMI) of 19.97 (SD = 2.15; M = 19.68, SD = 2.01 for women; M = 20.97, SD = 2.31 for men); 8.5% had a BMI over 23, the level at which risk for obesity-related diseases is elevated in Asia-Pacific samples (WHO, 2000).

**CFA sample.** An independent sample of first year SWU students (447 women, 121 men) between 15 and 23 years of age (M=19.30 years, SD=1.02) participated. For ethnicity, 85.7% were Han, 4.05% were Tujia, 1.76% were Miao, and 8.49% were from 16 other minorities. In this sample, 11.44% of participants had a BMI over 23 (M=20.12, SD=2.24 overall; M=19.77, SD=2.00 for women; M=21.39, SD=2.60 for men). The sample did not differ from the PCA sample on age, F(1, 1116)=1.78, p=.221,  $\eta$ =.04, ethnicity,  $\chi^2$ (18)=0.15, p=.735 or average BMI, F(1, 1116)=0.46, p=.265,  $\eta$ =.03.

#### Measures.

**Demographics.** Age, sex, ethnicity, and estimated monthly household income (below 1000 Yuan, 1000–2999 Yuan, 3000–4999 Yuan, 5000 Yuan or above) were assessed. BMI was calculated from self-reported height and weight which correlates highly with objective BMI measurement (e.g., Gorber, Tremblay, Moher, & Gorber, 2007).

Upward Physical Appearance Comparison Scale (UPACS) and Downward Physical Appearance Comparison Scale (DACS). The

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