A Four-Culture Study of Self-Enhancement and Adjustment Using the Social Relations Model: Do Alternative Conceptualizations and Indices Make a Difference?

A. Timothy Church and Marcia S. Katigbak
Washington State University

Rina Mazuera Arias and Brigida Carolina Rincon
Catholic University of Táchira

José de Jesús Vargas-Flores and
Joselina Ibáñez-Reyes
National Autonomous University of Mexico

Lei Wang
Peking University

Juan M. Alvarez and Congcong Wang
Washington State University

Fernando A. Ortiz
Gonzaga University

In the self-enhancement literature, 2 major controversies remain—whether self-enhancement is a cultural universal and whether it is healthy or maladaptive. Use of the social relations model (SRM; Kenny, 1994) might facilitate resolution of these controversies. We applied the SRM with a round-robin design in both friend and family contexts in 4 diverse cultures: the United States ($n = 399$), Mexico ($n = 413$), Venezuela ($n = 290$), and China ($n = 222$). Results obtained with social comparison, self-insight, and SRM conceptualizations and indices of self-enhancement were compared for both agentic traits (i.e., egoistic bias) and communal traits (i.e., moralistic bias). Conclusions regarding cultural differences in the prevalence of self-enhancement vs. self-effacement tendencies, and the relationship between self-enhancement and adjustment, varied depending on the index of self-enhancement used. For example, consistent with cultural psychology perspectives, Chinese showed a greater tendency to self-efface than self-enhance using social comparison and self-insight indices, particularly on communal traits in the friend context. However, no cultural differences were observed when perceiver and target effects were controlled using the SRM indices. In all cultures, self-enhancement indices were moderately consistent across friend and family contexts, suggesting traitlike tendencies. To a similar extent in all 4 cultures, self-enhancement tendencies, as measured by the SRM indices, were moderately related to self-rated adjustment, but unrelated, or less so, to observer-rated adjustment.

Keywords: self-enhancement, culture, social relations model, adjustment

Self-enhancement bias refers to the tendency to view oneself in an overly positive manner. Cross-cultural researchers have investigated a variety of such biases (Heine & Hamamura, 2007; Sedikides, Gaertner, & Vevea, 2007b), but two major controversies remain—whether self-enhancement biases are cultural universals and whether they are healthy or maladaptive. We investigated both questions in four diverse cultures using a social relations analysis (Kenny, 1994) and alternative ways of conceptualizing and measuring self-enhancement. We focused specifically on self-enhancement bias in the description or evaluation of one's personality traits.

Is Self-Enhancement a Cultural Universal?

Relativistic Perspectives

The question of whether self-enhancement biases are exhibited in all cultures has been vigorously debated (Heine & Hamamura, 2007; Heine, Kitayama, & Hamamura, 2007; Sedikides, Gaertner, & Vevea, 2005, 2007a, 2007b). Adopting a relativistic perspective, some cultural psychologists have proposed that these biases may be limited to Western or individualistic cultures (Heine & Hamamura, 2007; Heine, Lehman, Markus, & Kitayama, 1999), where

A. Timothy Church and Marcia S. Katigbak, Department of Educational Leadership, Sport Studies, and Educational/Counseling Psychology, Washington State University; Rina Mazuera Arias and Brigida Carolina Rincon, Office of the Dean for Research and Graduate Studies, Catholic University of Táchira; José de Jesús Vargas-Flores and Joselina Ibáñez-Reyes, Iztacala National School of Professional Studies, National Autonomous University of Mexico; Lei Wang, Department of Psychology, Peking University; Juan M. Alvarez, Department of Educational Leadership, Sport Studies, and Educational/Counseling Psy-
chology, Washington State University; Congcong Wang, Department of Teaching and Learning, Washington State University; Fernando A. Ortiz, Counseling Center, Gonzaga University.

Correspondence concerning this article should be addressed to A. Timothy Church, Department of Educational Leadership, Sport Studies, and Educational/Counseling Psychology, Cleveland Hall, Washington State University, Pullman, WA 99164-2136. E-mail: church@mail.wsu.edu

internal attributes—and their expression and confirmation—are more central to one's identity. In contrast, in Eastern or collectivistic cultures, "being a good self" may involve modesty, identifying shortcomings, and striving for self-improvement (Brown & Kobayashi, 2002; Cai et al., 2011; Heine, 2001, 2005; Kurman, 2002). Self-enhancement differences involving East Asian cultures might also be attributed to dialecticism, a system of thought rooted in Eastern philosophical traditions and characterized by acceptance of contradiction, expectations of complexity and change, and holistic thinking (Peng & Nisbett, 1999; Spencer-Rodgers, Williams, & Peng, 2010). For example, Spencer-Rodgers et al. argued that dialecticism causes individuals to attend to both positive and negative aspects of the self and thus experience greater evaluative ambivalence in their self-appraisals.

Universalistic Perspectives

Other theorists have argued that self-enhancement biases are cultural universals with an evolutionary basis (Sedikides & Gregg, 2008). Supportive evidence comes from studies that reveal self-enhancement tendencies in a variety of cultures, including those in East Asia (Brown, 2012; Brown & Cai, 2010; Brown & Kobayashi, 2002; Gaertner, Sedikides, & Chang, 2008; Sedikides, Gaertner, & Toguchi, 2003; Tam et al., 2012). In addition, although Asian samples typically score lower than Western samples on explicit measures of self-esteem (Bond & Cheung, 1983; Heine et al., 1999), Asians do exhibit positive self-views on implicit measures (Kitayama & Karasawa, 1997; Kobayashi & Greenwald, 2003; Yamaguchi et al., 2007).

Sedikides and colleagues (Cai et al., 2011; Sedikides et al., 2003) proposed a tactical self-enhancement model, which posits that self-enhancing tendencies are cultural universals, but exhibited tactically in accordance with situational, normative, and societal constraints. One proposed tactic is to self-enhance on personally important attributes, while self-enhancing less, or even self-effacing, on less important attributes. From this perspective, we might predict that people in individualistic cultures will self-enhance more on individualistic or agentic attributes that involve personal effectiveness and social dominance, whereas people in collectivistic cultures will self-enhance more on collectivistic or communal attributes that concern social connection and harmony (Paulhus & John, 1998; Sedikides, Gaertner, & Toguchi, 2003; Sedikides, Gaertner, & Vevea, 2007a). Indeed, Paulhus and John (1998) distinguished egoistic and moralistic biases, linking egoistic bias to agentic values and self-enhancing tendencies for extraversion and openness traits, and moralistic bias to communion values and self-enhancing tendencies for agreeableness and conscientiousness traits. In combination with cultural psychology theory linking individualistic and collectivistic cultures to agentic and communal values, respectively (Markus & Kitayama, 1991), Paulhus and John's model predicts self-enhancement on extraversion and openness (i.e., agentic) traits in individualistic cultures and self-enhancement on agreeableness and conscientiousness (i.e., communal) traits in collectivistic cultures. A number of studies have supported tactical self-enhancement perspectives (Brown, 2012; Brown & Cai, 2010; Brown & Kobayashi, 2002; Gaertner et al., 2008; Kurman, 2001; Sedikides et al., 2003; Tam et al., 2012), whereas other studies have revealed nonsupportive or mixed results (Heine et al., 2007; Heine & Lehman, 1995; Silvera & Seger,

2004; Yik, Bond, & Paulhus, 1998). Sedikides et al. (2007a) noted that support is most evident in studies that validated the individualistic (agentic) and collectivistic (communal) attributes or when the personal importance of the attributes was directly assessed.

Much of the universality debate has centered on the question of which methods are relevant in investigating self-enhancement. Most frequently used—particularly in tests of the tactical self-enhancement model—is the social comparison method, in which participants judge whether they are better than the average other (Heine & Hamamura, 2007; Kobayashi & Brown, 2003; Sedikides et al., 2005). However, debate continues on whether this method provides a valid measure of a motive to present oneself in a positive manner or whether it is confounded by cognitive biases such as the tendency to rate single individuals more favorably than the average of a group of people (Brown, 2012; Heine & Hamamura, 2007; Gaertner, Sedikides, & Cai, 2012). Accordingly, in the present study, we investigated cultural differences in self-enhancement tendencies for agentic and communal traits (i.e., egoistic and moralistic bias) using multiple methods and indices.

How Does Self-Enhancement Relate to Adjustment?

The universalistic perspective predicts that self-enhancement tendencies will be associated with greater adjustment in all cultures. In contrast, the relativistic perspective predicts that such tendencies will benefit adjustment in Western or individualistic cultures, but not Eastern or collectivistic cultures. Even in Western cultures, however, the relationship between self-enhancement and adjustment remains controversial (Asendorpf & Ostendorf, 1998; Colvin & Block, 1994; Paulhus, 1998; Taylor & Brown, 1994; Taylor, Lerner, Sherman, Sage, & McDowell, 2003). Kwan, John, Kenny, Bond, and Robins (2004) attributed the inconsistent findings to the application of two different conceptions of self-enhancement. They observed that studies using the social comparison approach, in which self-perceptions are compared with the target's perceptions *of* others, almost always reveal a positive relationship between self-enhancement and adjustment. In contrast, studies that use the self-insight approach, in which self-perceptions are compared with perceptions *by* others or some other observable reality, rarely reveal a positive relationship between self-enhancement and adjustment, and about half of the studies have revealed a negative relationship. Indeed, in a rare study comparing the two approaches, Kurt and Paulhus (2008) found that the relationship between self-enhancement and adjustment differed for the two conceptualizations.

The enhancement–adjustment relationship may also depend on whether self-enhancement is exhibited for agentic or communal traits (Kurt & Paulhus, 2008), or for personally important versus less valued traits (Brown & Cai, 2010; Gaertner et al., 2008), consistent with the tactical self-enhancement model. For example, in a Canadian sample, Kurt and Paulhus (2008) found that agentic but not communal self-enhancement was generally negatively related to both personal and interpersonal adjustment. In an experimental study, O'Mara, Gaertner, Sedikides, Zhou, and Liu (2012) found that Americans and Chinese showed equivalent increases in well-being after self-enhancing (but not after self-effacing) on a personally important trait.

Finally, the relationship between self-enhancement and adjustment may depend on who evaluates the adjustment outcomes. In cross-cultural studies, a positive relationship has usually been

found between self-enhancement and self-rated adjustment (Church et al., 2006; Hamamura, Heine, & Takemoto, 2007; Kobayashi & Brown, 2003; Kurman, 2002; Kurman & Sriram, 1997; Silvera & Seger, 2004; Yik et al., 1998). However, the merits of self-report indicators of adjustment can be debated. On the one hand, shared method variance may inflate the relationship between self-enhancement and adjustment when self-ratings are used (Kim, Schimmack, & Oishi, 2012; Kurt & Paulhus, 2008). For example, Kim et al. found that general evaluative biases predicted self-ratings, but were only weakly related to informant ratings, of targets' life satisfaction. On the other hand, some aspects of adjustment are probably best assessed by target individuals, who are better positioned to evaluate their phenomenological experiences (Kurt & Paulhus, 2008). Furthermore, to the extent that self-enhancement biases provide a genuine mechanism for maintaining subjective well-being, the relationship between self-enhancement and self-rated adjustment may be substantively meaningful rather than artifactual (Kurt & Paulhus, 2008; Taylor & Brown, 1988). Such considerations suggest the value of assessing adjustment from both self- and observer perspectives, as we do in the present study. On the basis of previous research, we expected to find moderate convergent validity between self- and observer ratings of adjustment (Kim et al., 2012; Schneider & Schimmack, 2009).[1]

Aside from the various factors that may moderate the relationship between self-enhancement and adjustment, Kwan et al. (2004) pointed out an important methodological problem with social comparison and self-insight indices of self-enhancement—both are confounded with irrelevant sources of variance. In the terminology of the social relations model (SRM; Kenny, 1994), social comparison indices are confounded by target effects, which index the extent to which self-raters actually are superior to others on the rated traits, as viewed by a consensus of observers. Similarly, the self-insight index is confounded by perceiver effects, or the tendency of a self-rater to see people in general (including oneself) in a positive light (i.e., a general person-positivity effect). Recently, these concerns were echoed by Kim et al. (2012), who used structural equations modeling to separate self-enhancement biases from more general evaluative biases and halo effects. The SRM provides an alternative means to disentangle these confounding effects, and the present study is apparently the first to apply the SRM in a cross-cultural study of self-enhancement.

The SRM and Alternative Indices of Self-Enhancement

Kenny (1994) developed the SRM as a means to partition the various components that can impact trait judgments in research designs that involve reciprocal trait judgments. Such judgments can be obtained, for example, using round-robin designs, in which each member of a group rates each other member of the group. In the SRM, perceiver i's rating of target j on a particular trait can be decomposed as follows:

$$X_{ij} = \mu + \alpha_i + \beta_j + \gamma_{ij} + \varepsilon_{ij}, \qquad (1)$$

where μ is the overall mean level of ratings on the trait in a round-robin group; α_i is the mean rating that person i gives to members of the round-robin group (i.e., the perceiver effect); β_j is

the mean rating that person j receives (i.e., the target effect); γ_{ij} is the rating deviation due to person i's unique perception of person j (i.e., the relationship effect); and ε_{ij} represents error of measurement (Kenny, 1994).

Kwan et al. (2004) extended the SRM to depict self-perception as a special case of interpersonal perception in which the perceiver and target are the same person (i.e., the self). Adapting Equation 1, we can decompose self-perceptions as follows:

$$X_{ss} = C_s + P_s + T_s + R_{ss}, \qquad (2)$$

where X_{ss} is the self-rating of person s, C_s is a constant (i.e., the mean of all the self-ratings), P_s and T_s are the perceiver and target effects for person s, and R_{ss} (the relationship effect) is the unique component of the person's self-rating that cannot be explained by perceiver and target effects. Kwan et al. pointed out that R_{ss} provides an index of self-enhancement that is unconfounded by perceiver and target effects. Ignoring the constant, C_s, leads to the following index of self-enhancement:

$$R_{ss} = X_{ss} - P_s - T_s. \qquad (3)$$

That is, the SRM index of self-enhancement is obtained by subtracting from the self-rating the perceiver and target effects estimated for the individual by the SRM. Kwan et al. (2004) noted that the traditional social comparison and self-insight indices of self-enhancement can also be computed using the ratings from a round-robin design. The social comparison index can be computed by subtracting from the target person's self-rating the mean of his or her ratings of the other individuals in the round-robin group. The self-insight index can be computed by subtracting from the target person's self-rating the mean of the other individuals' ratings of the target.

In two round-robin studies in American samples, Kwan et al. (2004) and Kwan, John, Robins, and Kuang (2008) found that (a) the social comparison, self-insight, and SRM indices were only moderately correlated; (b) the social comparison and self-insight indices were indeed confounded with target and perceiver effects, respectively; (c) individuals' target effects, which correlated positively with self-esteem and peer-rated task performance, provide a good index of genuine (rather than illusory) adjustment; and (d) the SRM index—which the researchers viewed as the most valid and unconfounded measure of self-enhancement—was positively correlated with self- and observer ratings of narcissism; negatively related to observer ratings of initiative, energy, and oral communication skills; and negatively related to academic grade-point average. Overall, these results are consistent with the view that self-enhancers exhibit good intrapsychic adjustment (e.g., high self-esteem), but poor adjustment as rated by others.

---

[1] The inconsistent findings between self-enhancement and adjustment across studies might also be reconciled by taking into account various contextual variables. For example, self-enhancement biases may be healthy or functional when appraising relatively mild, but not severe, negative experiences (Bonanno, Field, Kovacevic, & Kaltman, 2002; McNulty, O'Mara, & Karney, 2008; O'Mara, McNulty, & Karney, 2011). Such findings suggest that the implications of self-enhancement tendencies for adjustment may not be inherently positive or negative, but may depend on the context in which they occur.

John and Robins (1994) proposed another limitation of the traditional social comparison and self-insight indices. Both indices are based on difference scores, which tend to be less reliable, and the indices can be confounded with the self- and peer ratings upon which they are based. Therefore, to obtain a self-insight index, John and Robins recommended that researchers instead regress targets' self-ratings onto the mean ratings by peers of the target to obtain a standardized residual index that should be uncorrelated with the mean level of the peer ratings. In this conceptualization, the ratings by peers provide an estimate of behavioral reality, and the residual scores indicate the relative degree and direction of the bias that remains in the self-ratings after the behavioral reality component has been partialed out. Analogously, by regressing targets' self-ratings onto their mean ratings of their peers, a standardized residual version of the social comparison index can be obtained. Of interest is whether these residual indices will be related to adjustment differently than are the traditional social comparison and self-insight indices based on difference scores.

Finally, Kenny and West (2010) proposed a more general form of Kwan et al.'s (2004) SRM model of self-perception, as follows:

$$X_{ss} = C_s + k \times P_s + q \times T_s + R_{ss}, \qquad (4)$$

where k refers to the degree to which the perceiver effect from the target's ratings of others is reflected in the target's self-ratings (i.e., assumed similarity), and q measures the degree to which the target effect derived from the ratings of the target by others is reflected in the target's self-ratings (i.e., the self-other correlation). K and q can be derived in a multiple regression analysis in which perceiver and target effects are the predictors and self-ratings are the criterion (Kenny, 1994). Kwan et al.'s formulation assumes that k and q are one, but Kenny and West (2010) computed average values for k ($M = .79$, $SD = .40$) and q ($M = .64$, $SD = .57$) across 24 round-robin studies that were less than one. Accordingly, Kenny and West (see also Kenny, 1994) suggested that a better index of self-enhancement within the SRM would be the following:

$$R_{ss} = X_{ss} - k \times P_s - q \times T_s. \qquad (5)$$

In this index, the perceiver and target effects that are subtracted from self-ratings are weighted by k and q, respectively.

Overview of the Present Study

The goal of this study was to help resolve controversies regarding the universality of self-enhancement tendencies and their relationship to adjustment. We applied the SRM and a round-robin design, in which participants in four cultures—the United States, Mexico, Venezuela, and China—rated their own and others' personality traits. In doing so, we were able to estimate social comparison, self-insight, and SRM indices of self-enhancement in each culture and examine whether they relate differently to adjustment. A summary of the six alternative self-enhancement indices derived in the study is shown in Table 1. For each index, the table describes its computation, interpretation, and expected relationship (i.e., degree of confounding) with perceiver and target effects.

For a few reasons, we computed the alternative self-enhancement indices in both friend and family round-robin groups, which shared one target participant. First, whereas many self-enhancement studies have examined self-enhancement biases with less close acquaintances (e.g., classmates who became acquainted by working together on a group

project), Kwan et al. (2008) recommended that researchers examine the impact of self-enhancement with close friends and family members, suggesting that self-enhancers may do well in these contexts "as long as their close friends and family members think highly of them" (p. 1075). Second, although studies relating self-enhancement tendencies to narcissism suggest a traitlike quality, there is little research on the extent to which self-enhancement biases are consistent across interpersonal contexts. Third, we did not propose any a priori hypotheses regarding differences in self-enhancement tendencies between the friend and family contexts. However, it is possible that modesty norms, which can impact self-enhancement tendencies, will operate differently in the two contexts, particularly in collectivistic cultures (Brown & Kobayashi, 2002; Cai et al., 2011; Kurman, 2002).

Our first two hypotheses addressed the comparability and consistency of the alternative self-enhancement indices. First, we hypothesized that in all cultures, the social comparison, self-insight, and SRM indices would be only moderately related and thus not interchangeable (Hypothesis 1). Second, we hypothesized that in all cultures, target participants who self-enhance with friends will also tend to do so with family members, suggesting a traitlike tendency (Hypothesis 2). Our remaining hypotheses, described below, addressed the universal versus relativistic nature of self-enhancement and its relation to self- and observer-rated adjustment using these alternative indices.

The vast majority of cross-cultural studies of self-enhancement have only compared North American and East Asian cultures (Heine & Hamamura, 2007; Sedikides et al., 2003), so our a priori hypothesis about cultural differences addressed our U.S. and Chinese samples. However, to strengthen the case for cultural universals, it is important to extend self-enhancement research to additional cultures. The cultures in the present study were selected to vary along the dimensions of individualism–collectivism and dialecticism, the two dimensions that have been linked by cultural psychologists to possible self-enhancement differences. Hofstede (2001) ranked 53 countries and regions on individualism based on a cross-national study of values. The United States ranked 1st, Mexico 32nd, and Venezuela 50th. China was not included, but Taiwan (43rd) and Singapore (40th) were ranked as collectivistic. Dialecticism has been linked primarily to Asian countries, particularly those in East Asia such as China (Peng & Nisbett, 1999; Spencer-Rodgers, Peng, Wang, & Hou, 2004). Thus, we viewed the United States as individualistic and nondialectical, Mexico and Venezuela as relatively collectivistic and nondialectical, and China as collectivistic and dialectical. By including this combination of cultures, we hoped to discern whether differences in individualism–collectivism or dialecticism best accounted for any cultural differences in self-enhancement.[2]

Drawing on the tactical self-enhancement model and the proposal that agentic and communal traits are more valued in individualistic and collectivistic cultures, respectively (Grimm, Church, Katigbak, & Reyes, 1999; Markus & Kitayama, 1991; Paulhus & John, 1998), we hypothe-

---

[2] The cross-cultural samples in this study were used in a previous study of cross-observer agreement that did not examine self-enhancement or its relationship to adjustment (Katigbak et al., 2013). In that study, mean scores of the American and Chinese samples on measures of self-construals and dialecticism supported the view of the United States as individualistic and nondialectical and China as collectivistic and dialectical. The Mexican and Venezuelan samples were similar to the United States and lower than China on dialecticism, but their status on the individualism-collectivism dimension was less definitive.

Table 1
Summary of Alternative Self-Enhancement Indices

Index	Computation	Interpretation	Relation to perceiver and target effects
Social comparison indices			
Difference score	Target's self-rating minus the mean of target's ratings of others	The extent to which individuals rate themselves more positively (self-enhancement) or negatively (self-effacement) than they rate others	Confounded by target effects (i.e., how positively or negatively individuals are evaluated on the rated traits by a consensus of others)
Residual	Residual after regressing targets' self-ratings onto their mean ratings of others	The extent to which individuals' self-ratings diverge in the positive (relative self-enhancement) or negative (relative self-effacement) direction from what would be predicted from how they rate others	Confounded by target effects (i.e., how positively or negatively individuals are evaluated on the rated traits by a consensus of others)
Self-insight indices			
Difference score	Target's self-rating minus the mean of the ratings of the target by others	The extent to which individuals rate themselves more positively (self-enhancement) or negatively (self-effacement) than they were rated by others	Confounded by perceiver effects (i.e., how positively or negatively individuals evaluate people in general, including themselves, on the rated traits)
Residual	Residual after regressing targets' self-ratings onto the mean ratings of the targets by others	The extent to which individuals' self-ratings diverge in the positive (relative self-enhancement) or negative (relative self-effacement) direction from what would be predicted from how they were rated by others	Confounded by perceiver effects (i.e., how positively or negatively individuals evaluate people in general, including themselves, on the rated traits)
SRM indices			
Unweighted (Kwan et al., 2004)	Target's self-rating minus the perceiver and target effects estimated for the individual by the SRM	An individual's unique component of self-perception, either positive (self-enhancement) or negative (self-effacement), that cannot be accounted for by the individual's general perception of others (i.e., perceiver effects) and the perception others have of the individual (i.e., target effects)	Unconfounded by perceiver and target effects
Weighted (Kenny & West, 2010)	Target's self-rating minus the k-weighted perceiver effects and q-weighted target effects estimated for the individual by the SRM	An individual's unique component of self-perception, either positive (self-enhancement) or negative (self-effacement), that cannot be accounted for by the individual's general perception of others (i.e., perceiver effects) and the perception others have of the individual (i.e., target effects), where perceiver and target effects are weighted by the extent to which they are reflected in self-ratings	Unconfounded by perceiver and target effects

Note. SRM = social relations model; k = the degree to which the perceiver effect from the target's ratings of others is reflected in the target's self-ratings (i.e., assumed similarity); q = the degree to which the target effect derived from the ratings of the target by others is reflected in the target's self-ratings (i.e., self–other correlation).

sized that egoistic bias (i.e., self-enhancement on extraversion and openness traits) would be prevalent in the U.S. sample, and moralistic bias (i.e., self-enhancement on agreeableness and conscientiousness traits) would be prevalent in the Chinese sample (Hypothesis 3). Individuals with larger SRM target effects are viewed more positively on the respective traits, providing a genuine basis for adjustment (Kwan et al., 2004). Therefore, we hypothesized that in all cultures, target effects for both agentic and communal traits would be positively related to both self-rated and observer-rated adjustment (Hypothesis 4). On the basis of Kim et al.'s (2012) findings, we hypothesized that SRM perceiver effects (which are analogous to general evaluative bias) would be positively associated with self-rated adjustment but not observer-rated adjustment (Hypothesis 5). Finally, we predicted that in all cultures, self-enhancement, when assessed with the unconfounded SRM indices, would be positively related to

self-rated adjustment, but unrelated or negatively related to observer-rated adjustment (Church et al., 2006; Kurt & Paulhus, 2008; Paulhus & John, 1998) (Hypothesis 6).

Method

Participants

Target participants were college students, and they were asked to recruit three friends who knew the target and the other friends well, plus three family members who knew the target and the other family members well. Complete friend and family round-robin groups were not obtained for all target participants due to the demanding nature of round-robin designs. Usable round-robin data

were obtained from 66% to 71% of the targets in the United States, Venezuela, and China, and from 83% of the targets in Mexico. Reasons for nonusable data included nonreturn of surveys by friends or family members despite reminders; recruited friends reporting that they did not know each other well; and overlap between different friend groups.

In the United States, there were 399 final respondents, including 57 target participants (22 men, 35 women; M age = 20.53, SD = 1.34) at Washington State University, 171 of their friends (72 men, 99 women; M age = 20.91, SD = 4.51), and 171 of their family members (72 men, 99 women; M age = 41.98, SD = 16.07). Self-reported ethnic backgrounds were as follows: European American, 86%; Latino, 5%; biracial, 3%, Asian, 2%; American Indian or Alaskan Native, 1%; African American, 1%, and other or not reporting, 2%. These respondents constituted 57 friend and 57 family round-robin groups.[3] In Mexico, there were 413 final respondents, including 59 target participants (26 men, 33 women; M age = 20.07, SD = 2.12) at the National Autonomous University of Mexico at Iztacala, 177 of their friends (73 men, 104 women; M age = 20.72, SD = 3.40), and 177 of their family members (72 men, 105 women; M age = 39.06, SD = 13.30). Self-reported ethnic backgrounds were as follows: Mestizo, 77%; Indigenous, 11%; Spanish, 5%; Central American, 1%; "other," 2%; and not reporting, 4%. These respondents constituted 59 friend and 59 family groups. In Venezuela, there were 290 final respondents, including 47 target participants (17 men, 30 women; M age = 20.60, SD = 3.62) at the Catholic University of Táchira, 127 of their friends (43 men, 84 women; M age = 22.27, SD = 5.79), and 116 of their family members (42 men, 74 women; M age = 33.62, SD = 11.79). Self-reported ethnic backgrounds were as follows: Mestizo (Criollo), 70%; Indigenous, 10%; European, 9%; African, 1%; "other," 2%; and not reporting, 8%. These respondents constituted 45 friend groups and 41 family groups. In China, there were 222 final respondents, including 36 target participants (12 men, 24 women; M age = 21.61, SD = 1.66) at Peking University in Beijing, 90 of their friends (42 men, 48 women; M age = 21.90, SD = 2.20), and 96 of their family members (44 men, 52 women; M age = 36.97, SD = 12.20). Han Chinese comprised 94% of the sample, and there were 1% or less of each of the remaining ethnic groups (Zhuang, Manchu, Miao, Tujia, Mongol, and multiracial). These respondents constituted 33 friend groups and 35 family groups. The number of round-robin groups and total sample sizes in each culture compare very favorably with the numbers in previous studies (Kenny, 1994, Appendix A; Kenny & West, 2010).

In the United States and Mexico, all round-robin groups were composed of four members. For Venezuela and China, we also retained some round-robin groups with three rather than four members (about 18% of the groups in Venezuela, 25% in China), which is acceptable because the SRM analyses revealed no dyadic reciprocity effects in the ratings (Kenny, 1994, p. 34). Friends and family members rated how well they knew each other on a 5-point scale (1 = *not at all*, 2 = *slightly*, 3 = *fairly well*, 4 = *very well*, 5 = *extremely well*). We found cultural differences in acquaintance ratings for friends using an analysis of variance, $F(3, 2211)$ = 26.16, $p < .01$. However, on average, friends in all four cultures indicated that they knew each other fairly well to very well: United States, M = 4.01; Mexico, M = 3.68; Venezuela, M = 3.86; and China, M = 3.53. Similarly, there were cultural differences in

acquaintance ratings for family members, $F(3, 2194)$ = 78.66, $p <$ .01, but family members in all four cultures indicated that they knew each other very well to extremely well, on average: United States, M = 4.57; Mexico, M = 3.95; Venezuela, M = 4.33; and China, M = 3.98.

Instruments

Translation and measurement equivalence. Back-translation was used to translate all instruments from English into Spanish (for Mexico and Venezuela) and Chinese. Minor modifications to the translations were made as necessary. Using multigroup confirmatory factor analysis, Church et al. (2012) found acceptable cross-cultural measurement equivalence for the trait rating form used in the present study. Tests of the measurement equivalence of the self-enhancement and adjustment measures are reported later.

Trait rating form. Self-enhancement has frequently been assessed using trait adjectives (e.g., Brown & Cai, 2010; Gaertner et al., 2008; Kurman, 2001; Kobayashi & Brown, 2003; Kwan et al., 2004, 2008). We sought a representative set of trait adjectives, so we selected previously established indicators of each of the Big Five traits (Goldberg, 1992; Saucier, 1994). At the same time, a relatively brief measure was required because in our round-robin design, target participants would be rating the traits eight times (i.e., for themselves in two contexts and for three friends and three family members). Recruited friends and family members would be rating the traits of four individuals. Therefore, we had participants rate themselves and others on 15 trait adjectives, three for each Big Five dimension, including some reverse-keyed (r) traits: for Extraversion, *energetic*, *extraverted*, and *quiet* (r); for Agreeableness, *kind*, *helpful*, and *selfish* (r); for Conscientiousness, *disciplined*, *organized*, and *lazy* (r); for Emotional Stability, *relaxed*, *calm*, and *moody* (r); for Openness to Experience, *imaginative*, *intelligent*, and *shallow* (r). Participants in the friend groups first rated how accurately each trait describes them when they are with their friends and then rated each of the other members of their friend group on the 15 traits, one friend at a time. Ratings were made on a 5-point scale that ranged from 1 (*Not at all accurate or descriptive*) to 5 (*Extremely accurate or descriptive*). The analogous procedure was used in the family groups. Only the target participants were members of both a friend and family group.

Following Paulhus and John (1998), we formed a composite of agentic traits by combining the Extraversion and Openness traits, and a composite of communal traits by combining the Agreeableness and Conscientiousness traits. The agentic and communal traits were also similar to those used in previous studies (Brown & Cai, 2010; Church et al., 2006; Gaertner et al., 2008; Sedikides et al., 2003; Yik et al., 1998). Preliminary reliability analyses revealed that the reverse-keyed *shallow* adjective had low item-total correlations, so it was dropped from the agentic trait composite. Across the four cultures and the friend and family contexts, alpha reli-

---

[3] Inclusion of the ethnic minority participants (i.e., non-European Americans) in the U.S. sample could contribute a modest degree of cultural heterogeneity to the sample, which can complicate cross-national comparisons. However, we retained all participants because exclusion of participants could lead to discarding entire round-robin groups. Given the small number of ethnic minority participants in each cultural sample, it is unlikely that the results of the study were significantly impacted by retaining all participants.

abilities ranged from .46 to .79 ($M = .60$) for the agentic traits and from .49 to .73 ($M = .63$) for communal traits. In most analyses, the agentic and communal traits were grouped into item parcels and used as observed indicators of latent variables in structural equations modeling (SEM) analyses, which correct for unreliability of measurement. We derived separate indices of egoistic and moralistic bias by averaging the self-enhancement indices for the agentic and communal traits, respectively (Paulhus & John, 1998). Computation details for the self-enhancement indices are presented later. The Emotional Stability traits were used as an indicator of adjustment, as described in the next section.

Measures of Adjustment

Self-rated adjustment. All participants rated three aspects of their own adjustment. Participants rated their overall satisfaction with their lives on a 5-point scale: $1 = $ *not at all*, $2 = $ *slightly*, $3 = $ *moderately*, $4 = $ *very*, and $5 = $ *extremely*. In addition, they rated how *happy* they are in the relevant interpersonal context (i.e., with friends or family members) on a 5-point scale that ranged from 1 (*Not at all accurate or descriptive*) to 5 (*Extremely accurate or descriptive*). For the target participants, cross-context consistency correlations for the self-ratings of happiness ranged from moderate to high in the four cultures: United States, $r = .77$; Mexico, $r = .43$; Venezuela, $r = .80$; and China, $r = .39$ (all ps $< .01$). Finally, we used participants' ratings of their emotional stability (the composite of *moody* [reversed scored], *calm*, and *relaxed*) in the relevant contexts as a third adjustment indicator. Across the four cultures and the friend and family contexts, coefficient alpha estimates for the emotional stability indicator ranged from .39 to .66 ($M = .52$) (in the Chinese sample only, *relaxed* was deleted from the composite because of low item-total correlations). For the target participants, cross-context consistency correlations for the self-ratings of emotional stability were moderate to high in all four cultures: United States, $r = .75$; Mexico, $r = .52$; Venezuela, $r = .86$; and China, $r = .59$ (all ps $< .01$). The three adjustment measures were used as observed indicators of self-rated adjustment in SEM analyses, which correct for unreliability of measurement.

Observer-rated adjustment. In the friend and family round-robin groups, the happiness and emotional stability of each participant was rated by the other members of the round-robin group. By averaging these ratings across observers, we obtained observer-rated indices of happiness and emotional stability for each participant in both the friend and family contexts. Observers judged how *happy* a participant was using a 5-point scale that ranged from 1 (*Not at all accurate or descriptive*) to 5 (*Extremely accurate or descriptive*). Observers judged others' emotional stability using the adjectives *moody* (reversed scored), *calm*, and *relaxed*, which were rated on the same 5-point scale and averaged to obtain a single composite score. For the target participants, the cross-context correlations between the observers' mean ratings for happiness were moderate in size in Venezuela ($r = .32$, $p < .05$) and China ($r = .36$, $p < .01$), but not statistically significant in the United States ($r = .16$, $p > .05$) and Mexico ($r = .13$, $p > .05$). Across the four cultures and the friend and family context, coefficient alpha estimates for the emotional stability composite ranged from .44 to .78 ($M = .60$) (in the Chinese sample only, *relaxed* was again deleted from the composite because of low item-total correlations). For the target participants, the cross-context correlations

for emotional stability, as rated by friends and family members, were moderately high in the United States ($r = .53$, $p < .01$) and Venezuela ($r = .61$, $p < .01$), but nonsignificant in Mexico ($r = .05$, $p > .05$) and China ($r = .27$, $p > .05$). Observer-rated happiness and emotional stability (divided into two item parcels) were used as indicators of observer-rated adjustment in SEM analyses.

Overall, we found generally moderate consistency of the adjustment indicators across the friend and family contexts, as well as some context specificity. Accordingly, we examined the relationship between self-enhancement and adjustment separately within the friend and family contexts.

Procedure

Target participants were recruited in classes or research participant pools and provided the first name and e-mail address(es) of three friends and three family members. In the United States, Venezuela, and China, a member of the U.S.-based research team with fluency in the relevant language then e-mailed an invitation to participants and a link to the relevant online survey. Each participant received a tailored survey containing the first names of the individuals they were expected to rate. Completion of the online surveys was monitored daily, and periodic reminders were sent via e-mail, as necessary. Because of more limited Internet access in Mexico, particularly for family members, paper surveys were used. Each target participant was given a packet containing the tailored surveys for themselves and for their friends and family members. Target participants were responsible for distributing the paper surveys and the envelopes for returning their surveys to each friend and family member. To ensure confidentiality, friends and family members were asked to return the forms directly to the Mexican research team or, if returned via the target participant, to place their survey in a sealed envelope with their initials across the seal. In all four countries, local members of the research team also followed up with target participants, as necessary, in order to obtain as many complete round-robin data sets as possible. Payments were made to target participants from whom complete round-robin data were obtained, as follows: $50 in the United States, 525 pesos in Mexico, 175 bolivares in Venezuela, and 200 yuan in China.

Computation of Self-Enhancement Indices and Perceiver and Target Effects

Social comparison indices. For each of the agentic traits (i.e., *extraverted*, *energetic*, *quiet* [reversed scored], *intelligent*, and *imaginative*) and communal traits (i.e., *kind*, *helpful*, *selfish* [reversed scored], *organized*, *disciplined*, and *lazy* [reversed scored]), the mean of each participant's ratings of their three friends was subtracted from the participant's self-rating for the trait in the friend context. These trait-level indices were then averaged across the agentic or communal traits to obtain overall difference-score social comparison indices of egoistic and moralistic bias, respectively, for all participants in the friend groups (Kwan et al., 2004). The analogous procedure was used to derive difference-score social comparison indices of egoistic and moralistic bias for all participants in the family groups. As previously noted in Table 1, these indices measured the extent to which participants rated

themselves more positively (self-enhancement) or negatively (self-effacement) than they rated the other members of their friend or family groups on the original rating scale.

Following John and Robins (1994), residual versions of the social comparison indices were also derived for both the friend and family contexts. For each of the relevant traits, participants' self-ratings were regressed on the mean of the participants' ratings of the other members of the friend or family group. The trait-level indices were then averaged to obtain overall residual social comparison indices for egoistic and moralistic bias for the friend and family contexts. These indices, which were expressed as average standardized residuals, measured the extent to which participants' self-ratings diverged in the positive (relative self-enhancement) or negative (relative self-effacement) direction from what would be predicted from how they rated others (i.e., their general person-positivity effect).

Self-insight indices. For each of the traits in the agentic and communal trait composites, the mean of the ratings that each participant received from their friends was subtracted from the participant's self-rating for the trait in the friend context. These trait-level indices were then averaged across the relevant traits to obtain overall difference-score self-insight indices for egoistic and moralistic bias for all participants in the friend groups (Kwan et al., 2004). The analogous procedure was used to derive difference-score self-insight indices of egoistic and moralistic bias for all participants in the family groups. These difference-score indices measure the extent to which participants rated themselves more positively (self-enhancement) or negatively (self-effacement) than they were rated by others in their friend or family groups on the original rating scale.

Following John and Robins (1994), residual versions of the self-insight indices were also derived for both the friend and family contexts. For each of the relevant traits, participants' self-ratings were regressed on the mean of the ratings they received from the other members of the friend or family groups. The trait-level indices were then averaged to obtain residual self-insight indices of egoistic and moralistic bias for the friend and family contexts. These indices, which were expressed as average standardized residuals, measure the extent to which participants' self-ratings diverged in the positive (relative self-enhancement) or negative (relative self-effacement) direction from what would be predicted from how they were rated by others.

SRM indices. Following Kwan et al. (2004, 2008), we first derived unweighted SRM indices for each of the traits by subtracting participants' SRM perceiver and target effects for the respective traits from their self-ratings. The perceiver and target effects were estimated using the SOREMO program (Kenny, 2007), which computes such estimates for round-robin data. This was done separately in the friend and family contexts. These trait-level SRM indices were then averaged across the agentic or communal traits to obtain SRM indices of egoistic and moralistic bias, respectively, in the friend and family contexts. These indices assess each participant's unique or idiosyncratic component of self-perception that cannot be accounted for by the participant's general perception of others (i.e., perceiver effects) and the perception others have of the participant (i.e., target effects).

To compute the weighted SRM indices (Kenny, 1994; Kenny & West, 2010), unstandardized k and q values in Equation 5 were estimated separately for each trait in each culture by regressing the

self-ratings onto the participants' perceiver and target effects estimated by the SOREMO program. For each participant, the weighted SRM index for each trait was then computed by subtracting the k-weighted perceiver effect and the q-weighted target effect for each participant from his or her self-rating for the trait (see Equation 5). These trait-level indices were then averaged across the agentic or communal traits to obtain weighted SRM indices of egoistic and moralistic bias, respectively, in the friend and family contexts. In the weighted SRM indices, the relative influence of the perceiver and target effects on self-ratings is taken into account in assessing self-enhancement.[4]

Perceiver and target effects. The perceiver effects estimated by SOREMO for each trait were averaged across the relevant traits to obtain overall perceiver effects for agentic and communal traits. Similarly, the SOREMO target effects were averaged across the relevant traits to obtain overall target effects for agentic traits and communal traits. The overall perceiver effects assess the general positivity (vs. negativity) of participants' ratings of the traits of others. The overall target effects assess how positively (vs. negatively) participants were rated by others.

Measurement Models and Cross-Cultural Measurement Equivalence

Across the four cultures and the friend and family contexts, mean alpha reliabilities for the various self-enhancement indices and the perceiver and target effects ranged from .53 to .75. We used multigroup SEM to estimate the latent variable correlations relating the self-enhancement indices and the perceiver and target effects, and their relationships with self-rated and observer-rated adjustment. This enabled us to (a) correct for unreliability of measurement in these estimates, (b) test the cross-cultural equivalence of the measures of self-enhancement and adjustment, and (c) test for cultural differences in the relationships among the self-enhancement and adjustment variables. The latent variables representing the indices of egoistic and moralistic bias, and the SRM perceiver and target effects, were each measured by three item parcels. The item parcels were formed by allocating the five agentic traits to three parcels and the six communal traits to three parcels. For each self-enhancement index, the item-level scores for that index were averaged within each parcel. For each index, the measurement models for egoistic and moralistic bias were tested in a single multigroup confirmatory factor analysis, which also provided es-

---

[4] In all cultures, the mean values for k were greater than zero and less than one (range = .27–.50, M = .40, across the friend and family contexts). This indicated that, on average, participants' perceptions of the traits of others were moderately related to how they perceived themselves (i.e., there was a moderate level of assumed similarity; Kenny & West, 2010). The mean values for q were also between zero and one (range = .22–.40, M = .33), indicating that, in general, friends and family members of the target participants agreed more with each other in their ratings of the targets' traits than did the targets with the other raters (i.e., consensus among observers was greater than self–other agreement). In most cases, values of k were greater than values of q, indicating that self-ratings were usually more strongly related to how the targets perceived others (assumed similarity) than how others perceived them (self–other agreement). Kenny and West (2010) also reported higher average values of k than q, although their mean estimates were greater than those found here. Our estimates of k and q are likely underestimates of the true values because our estimation method assumes that the perceiver and target effects used in the multiple regression analyses are perfectly reliable.

timates of the correlations between egoistic and moralistic bias in each culture. The latent variable representing self-rated adjustment was defined by the three self-rated adjustment variables (happiness, life satisfaction, emotional stability). The latent variable representing observer-rated adjustment was defined by the observer ratings of happiness and emotional stability. To obtain three indicators of observer-rated adjustment and thus identify the measurement model, the emotional stability adjectives were divided into two item parcels. The measurement models for self-rated and observer-rated adjustment were tested in a single multigroup confirmatory factor analysis, which also provided estimates of the correlation between self- and observer-rated adjustment in each culture.

To test the cross-cultural equivalence of the measurement models, we compared models in which the factor loadings of the item parcels on the latent variables were freely estimated versus constrained to be equal across cultures. Given our large sample sizes, and the stringent nature of chi-square difference tests (Cheung & Rensvold, 2002), most of the freely estimated models were significantly better than the models with constrained loadings, $\chi^2_{\text{diff}}(12)$ range = 13.04–78.67. However, the model fit indices indicated that the constrained models provided acceptable to very good fits to the data (goodness-of-fit index [GFI] range = .89–.96; comparative fit index [CFI] range = .85–.96; root-mean-square residual [RMR] range = .01–.07; root-mean-square error of approximation [RMSEA] range = .03–.08). In the measurement models for adjustment, model fit was improved by incorporating covariances between the residuals (uniquenesses) for the emotional stability variables as measured by self and observers. Measurement model invariance enabled equivalent tests of the path coefficients relating the variables in the four cultures.

Relationship between egoistic (agentic) and moralistic (communal) bias. For each self-enhancement index, we compared measurement models in which the correlations between egoistic and moralistic bias were freely estimated versus constrained to be equal across cultures. Only one of 12 chi-square difference tests was statistically significant, $\chi^2(3) = 11.68$, $p < .01$, so we averaged the freely estimated correlations across cultures (using Fisher's z transformations) to summarize the relationship between egoistic and moralistic bias for each index. Across the friend and family contexts, the mean correlations ranged from .18 to .32 for the social comparison indices and from .45 to .64 for the remaining indices. This indicated that in all cultures, egoistic and moralistic bias can be differentiated but that participants who self-enhanced more on agentic traits (i.e., egoistic bias) also tended to self-enhance more on communal traits (i.e., moralistic bias).

Comparable analyses for the perceiver effects indicated that in all cultures, participants who tended to rate others positively on agentic traits also showed a strong tendency to rate others positively on communal traits, consistent with general person-positivity effects (mean rs of .78 in the friend context and .76 in the family context) (Kwan et al., 2004). In contrast, comparable analyses for the target effects indicated that friends in all cultures showed substantial differentiation in their ratings of others' agentic and communal traits (mean $r = .10$). This was also true for family members in the United States, Mexico, and China (r range = −.01 to .17), but Venezuelan family members showed less differentia-

tion in their ratings of others' agentic and communal traits ($r = .58$, $p < .01$), $\chi^2_{\text{diff}}(3) = 8.33$, $p < .05$.

Relationship between self-rated and observer-rated adjustment. When we compared models in which the correlations between the latent variables for self-rated and observer-rated adjustment were freely estimated versus constrained to be equal across cultures, the chi-square difference tests were nonsignificant in both the friend, $\chi^2_{\text{diff}}(3) = 2.45$, $p > .05$, and family, $\chi^2_{\text{diff}}(3) = 7.66$, $p > .05$, contexts. Therefore, we report the average of the freely estimated correlations across cultures, which were .43 in the friend context and .55 in the family context. As expected, these correlations revealed moderate convergent validity between self-rated and observer-rated adjustment in all four cultures.

Results

Descriptive Statistics for Self- and Other Ratings

Table 2 shows the means of the self- and other ratings of agentic and communal traits in the friend and family groups. Although mean ratings *of* others (used in the social comparison indices) and *by* others (used in the self-insight indices) will differ at the level of individuals, when averaged across all participants in a round-robin group (and thus across all individuals in a culture), the means (but not the standard deviations) are necessarily the same because they involve the same set of round-robin ratings. In the United States, the results suggested self-effacement of agentic traits in the family context, and self-enhancement of communal traits in the friend context (see dependent *t* tests). In Mexico, the results suggested self-enhancement of agentic traits in the friend context and communal traits in the family context. In Venezuela, the results suggested self-enhancement of communal traits in the friend context. In China, the results suggested self-effacement of communal traits in both the friend and family contexts. Although significant differences between the average self- and observer ratings suggest the possibility of self-enhancing or self-effacing tendencies, perceiver and target effects have not been controlled in these comparisons. In addition, average or group-level differences may not capture the prevalence of self-enhancement biases at the level of individuals, which we address later.

Relationships Between Alternative Self-Enhancement Indices

In Hypothesis 1, we predicted that social comparison, self-insight, and SRM indices would be only moderately correlated and thus not interchangeable. SEM models in which the latent correlations between alternative indices and the perceiver and target effects were constrained to be equal across cultures rarely provided significantly worse fit than models in which the correlations were freely estimated in each culture (i.e., in $\chi^2[3]$ difference tests). In addition, the correlations were very similar for the egoistic and moralistic bias indices and in the friend and family contexts. Therefore, for simplicity, we show in Table 3 the average freely estimated latent correlations between the various indices.

Not surprisingly, high correlations were found between (a) the difference-score and residual versions of the social comparison index, (b) the difference-score and residual versions of the self-insight indices, and (c) the unweighted and weighted versions of

Table 2

Comparison of Self- and Other Ratings on Agentic and Communal Traits in the Friend and Family Contexts in Four Cultures

Culture and context	Self		Social comparison: Ratings of others			Self-insight: Ratings by others		
	M	SD	M	SD	t	M	SD	t
United States[a]								
Agentic traits								
Friend	3.70	.59	3.65	.44	1.22	3.65	.47	1.31
Family	3.50	.64	3.59	.40	−1.87[†]	3.59	.48	−2.29[*]
Communal traits								
Friend	3.83	.55	3.76	.51	2.04[*]	3.75	.51	2.03[*]
Family	3.91	.53	3.94	.48	−.68	3.94	.55	−.58
Mexico[b]								
Agentic traits								
Friend	3.56	.64	3.47	.47	2.07[*]	3.47	.51	2.05[*]
Family	3.42	.69	3.44	.48	−.43	3.44	.48	−.44
Communal traits								
Friend	3.43	.60	3.43	.47	−.06	3.43	.53	−.06
Family	3.52	.61	3.44	.53	1.87[†]	3.44	.60	2.06[*]
Venezuela[c]								
Agentic traits								
Friend	3.75	.59	3.67	.45	1.62	3.68	.43	1.58
Family	3.70	.53	3.70	.44	−.18	3.70	.41	−.17
Communal traits								
Friend	3.92	.54	3.82	.52	2.36[*]	3.82	.46	2.28[*]
Family	3.92	.59	3.90	.49	.55	3.90	.47	.50
China[d]								
Agentic traits								
Friend	3.49	.71	3.57	.42	−1.14	3.57	.53	−1.29
Family	3.43	.62	3.49	.49	−.97	3.49	.55	−1.11
Communal traits								
Friend	3.73	.46	3.86	.46	−3.01[**]	3.86	.40	−2.43[*]
Family	3.91	.57	4.00	.50	−1.71[†]	4.00	.52	−1.78[†]

Note. Within each culture, means for ratings *of* others and ratings *by* others are necessarily the same because they are averaged over the same set of nonself-ratings in each round-robin.
[a] $n = 228$ in both friend and family context. [b] $n = 236$ in both friend and family context. [c] $n = 172$ in friend context, 157 in family context. [d] $n = 123$ in friend context, 131 in family context.
[†] $p < .10$. [*] $p < .05$. [**] $p < .01$.

the SRM index. Each of these pairs of indices conceptualizes self-enhancement in a similar manner. However, if we consider the three indices examined by Kwan et al. (2004, 2008)—the difference-score versions of the social comparison and self-insight indices and the unweighted SRM index—Hypothesis 1 was supported because the correlations were only moderate in size (mean r range $= .38–.49$). These three indices conceptualize self-enhancement differently and are not interchangeable. The correlations are similar in size to those reported by Kwan et al. (2004, 2008) in American samples.

As expected (e.g., see Table 1), the alternative self-enhancement indices also relate differently to perceiver and target effects. As contended by Kwan et al. (2004), both social comparison indices were moderately correlated with (i.e., confounded by) target effects, whereas both self-insight indices were moderately correlated with (i.e., confounded by) perceiver effects. As pointed out by Kwan et al. (2008, Footnote 1), the negative correlations relating the unweighted SRM index to both perceiver effects and target effects are expected because the SRM index is defined as the self-ratings minus these two effects. The weighted SRM index adjusts the unweighted SRM index by taking into account the actual effect of perceiver and target effects on the self-ratings, resulting in an index that was more independent of

the perceiver and target effects. Finally, the very high correlations relating three of the indices—residual social comparison, residual self-insight, and weighted SRM—can be explained as follows: The two residual indices control for the mean ratings of or by others, whereas the weighted SRM index adjusts for the extent to which the self-ratings are a function of perceiver and target effects. As a result, all three indices are more dependent on the original self-ratings than the other indices, leading to their high correlations with each other.

Overall, the correlations in Table 3 are consistent with the conceptual and computational differences between the alternative indices. In addition, the correlations were very similar across cultures and across the friend and family contexts, indicating that the indices functioned in a very similar manner across these settings.

Cross-Context Consistency

Previous studies have not examined the consistency of self-enhancement biases across contexts. In Hypothesis 2, we predicted that in all cultures, participants who self-enhance more with friends also self-enhance more with family members. The cross-context consistency correlations are shown in Table 4. Given the limited sample sizes for these analyses—only target participants

Table 3

Mean Correlations Between Target and Perceiver Effects and Alternative Self-Enhancement Indices

Index	1	2	3	4	5	6	7
1. Target effects							
2. Perceiver effects	.14						
Social comparison indices							
3. Difference score	.51	−.17					
4. Residual	.47	.11	.90				
Self-insight indices							
5. Difference score	−.24	.46	.38	.55			
6. Residual	.13	.45	.58	.85	.86		
SRM indices							
7. Unweighted	−.36	−.36	.42	.54	.49	.58	
8. Weighted	.11	.06	.63	.87	.61	.89	.85

Note. Entries are freely estimated latent correlations from structural equation modeling (SEM) analyses, averaged across egoistic and moralistic bias indices, friend and family contexts, and cultures. SRM = social relations model.

provided ratings in both contexts—not all of the correlations were statistically significant, but most were moderately positive. These results suggest that (a) participants who were rated more positively by friends were also rated more positively by family members (i.e., target effects), (b) participants who rated others more positively in the friend context also tended to do so in the family context (i.e., perceiver effects), and (c) regardless of the index used, participants who exhibited greater self-enhancement (or self-effacement) in one context also tended to do so in the other context. Note that the positive correlations in the table do not address the levels or frequency of self-enhancement or self-effacement tendencies in the various cultures. Rather, they indicate that participants' tendencies to self-enhance (or self-efface) are moderately consistent across the friend and family contexts. Finally, it is possible that these consistency correlations are inflated to some extent by response styles, although this would be more the case for indices that are more dependent on the original self-ratings (i.e., the residual indices and the weighted SRM indices). Nonetheless, the consistency correlations provide some evidence that in each culture, self-enhancement tendencies have a somewhat traitlike quality that generalizes across contexts.

Cultural Differences in Self-Enhancement

In Hypothesis 3, we predicted that egoistic bias (i.e., self-enhancement on extraversion and openness traits) would be prevalent in the U.S. sample and moralistic bias (i.e., self-enhancement on agreeableness and conscientiousness traits) would be prevalent in the Chinese sample (Hypothesis 3). Most of the self-enhancement indices do not lend themselves to mean comparisons between cultures because their means are necessarily zero in each culture (for the residual indices) or the mean of the self-ratings (for the SRM indices). Instead, we compared the percentages of self-enhancers and self-effacers within each culture. These analyses also highlight the fact that both self-enhancement and self-effacement tendencies are present in all cultures.

Setting score cutoffs for self-effacement, accurate self-assessment, and self-enhancement is somewhat arbitrary, but we noted that the standard errors of the means for each self-enhancement index were approximately .04 in each culture. Therefore, we treated index values

below −.04 as indicating self-effacement, values between −.04 and .04 as indicating accurate self-assessment, and values above .04 as indicating self-enhancement. To center the two SRM indices on zero, we subtracted the mean of the self-ratings (C_s in Equation 2) in each participant's round-robin group from their original SRM index values for each trait, then averaged these centered indices across all agentic or communal traits. Although the C_s constant can be ignored in computing the SRM indices, it needs to be subtracted to center the indices on zero rather than on the mean of the self-ratings (Kwan et al., 2004, p. 99). Finally, we did not compare the percentage of self-enhancers and self-effacers based on the two residual indices because those indices provide a measure of relative but not absolute self-enhancement bias. For example, slight self-enhancers can appear below the regression line when deriving the residuals and thus obtain a negative score suggesting self-effacement.

With our strict criterion for accurate self-assessment, about 2%–13% ($M = 5.31\%$) of participants were classified as accurate across the various cultures, contexts, indices, and agentic versus communal traits. Our main interest was in the relative percentages of self-effacers and self-enhancers for agentic traits (i.e., egoistic bias) and communal traits (i.e., moralistic bias), which are shown in Table 5 for each culture and context. In the last column, the results of overall χ^2 (3) tests identify instances in which the four cultures exhibited significant differences in the tendency to self-enhance versus self-efface on the traits. Within cultures, if the

Table 4

Consistency of Target Effects, Perceiver Effects, and Self-Enhancement Indices Across Friend and Family Contexts for Target Participants

Index	United States	Mexico	Venezuela	China
Target effects				
Agentic traits	.52**	.19	.24	.51**
Communal traits	.38**	.43**	.29	.15
Perceiver effects				
Agentic traits	.44**	.30*	.05	.46**
Communal traits	.54**	.16	.36*	.64**
Social comparison indices				
Difference score				
Egoistic bias	.69**	.43**	.08	.58**
Moralistic bias	.49**	.28*	.45**	.38*
Residual				
Egoistic bias	.79**	.52**	.34*	.67**
Moralistic bias	.63**	.47**	.67**	.44*
Self-insight indices				
Difference score				
Egoistic bias	.47**	.13	.25	.50**
Moralistic bias	.40**	.22	.39*	.52**
Residual				
Egoistic bias	.68**	.40**	.47**	.63**
Moralistic bias	.69**	.43**	.67**	.59**
SRM indices				
Unweighted				
Egoistic bias	.22	.16	.25	.48**
Moralistic bias	.20	.30*	.43**	.49**
Weighted				
Egoistic bias	.57**	.44**	.49**	.64**
Moralistic bias	.54**	.48**	.77**	.59**

Note. $n = 57$ in the United States, $n = 59$ in Mexico, $n = 41$–45 in Venezuela, $n = 33$–35 in China. SRM = social relations model.
* $p < .05$. ** $p < .01$.

Table 5

Percentages of Self-Enhancers and Self-Effacers in Friend and Family Contexts in Each Culture Based on Alternative Indices

Index	United States[a]		Mexico[b]		Venezuela[c]		China[d]		$\chi^2(3)$
	Self-enhancers	Self-effacers	Self-enhancers	Self-effacers	Self-enhancers	Self-effacers	Self-enhancers	Self-effacers	
				Friend context					
Social comparison difference score									
Egoistic bias	**58.1**	**41.9**	**55.5**	**44.5**	53.0	47.0	53.0	47.0	1.24
Moralistic bias	55.1	44.9	49.3	50.7	**58.4**	**41.6**	**38.3**	**61.7**	12.58**
Self-insight difference score									
Egoistic bias	**55.7**	**44.3**	55.3	44.7	51.9	48.1	47.0	53.0	2.87
Moralistic bias	53.6	46.4	47.0	53.0	**57.7**	**42.3**	**38.7**	**61.3**	11.97**
SRM indices[e]									
Unweighted									
Egoistic bias	51.8	48.2	50.9	49.1	49.7	50.3	49.6	50.4	.24
Moralistic bias	50.5	49.5	49.1	50.9	50.9	49.1	52.9	47.1	.47
Weighted									
Egoistic bias	50.0	50.0	48.8	51.2	50.6	49.4	50.9	49.1	.17
Moralistic bias	51.0	49.0	50.9	49.1	49.1	50.9	51.8	48.2	.23
				Family context					
Social comparison difference score									
Egoistic bias	46.1	53.9	51.8	48.2	45.8	54.2	47.2	52.8	.28
Moralistic bias	47.9	52.1	53.1	46.9	54.0	46.0	45.9	54.1	2.95
Self-insight difference score									
Egoistic bias	**43.7**	**56.3**	48.9	51.1	46.3	53.7	**40.0**	**60.0**	2.93
Moralistic bias	50.7	49.3	52.4	47.6	54.6	45.4	48.8	51.2	1.08
SRM indices[e]									
Unweighted									
Egoistic bias	49.1	50.9	45.4	54.6	51.0	49.0	50.8	49.2	1.56
Moralistic bias	47.0	53.0	51.7	48.3	50.0	50.0	54.0	46.0	1.81
Weighted									
Egoistic bias	49.5	50.5	46.2	53.8	44.7	55.3	51.7	48.3	1.78
Moralistic bias	48.0	52.0	50.5	49.5	51.7	48.3	52.1	47.9	.69

Note. When the percentages of self-enhancers and self-effacers are significantly different within a culture, they are shown in boldface ($p < .05$). SRM = social relations model.
[a] $n = 228$ in both friend and family context. [b] $n = 236$ in both friend and family context. [c] $n = 172$ in friend context, 157 in family context. [d] $n = 123$ in friend context, 131 in family context. [e] For these analyses, the SRM indices were centered on zero by subtracting out the mean of the self-ratings (C_S in Equation 2) from the original SRM indices (see text).
** $p < .01$ for the overall (cross-cultural) chi-square tests in the last column.

percentages of self-enhancers and self-effacers for a particular index were significantly different ($p < .05$) or marginally so ($p < .10$) in chi-square tests, they are shown in boldface.

We consider first the social comparison and self-insight indices. On the basis of the overall chi-square tests, the most definitive cultural differences in the pattern of self-enhancement versus self-effacement occurred for communal traits (i.e., moralistic bias) in the friend context: In the United States and Venezuela (but not Mexico), more individuals self-enhanced than self-effaced on communal traits in the friend context, whereas self-effacement was much more prevalent in China. Consistent with Hypothesis 3, Americans did tend to self-enhance more than self-efface on agentic traits (i.e., egoistic bias), but only in the friend context. However, contrary to Hypothesis 3, more Chinese self-effaced than self-enhanced on communal traits, particularly in the friend context. That is, moralistic bias was not characteristic of the Chinese sample. Most important, turning to the SRM indices—which control for perceiver and target effects—we found no definitive pattern of cultural differences in the percentages of self-enhancers versus self-effacers for agentic traits (i.e., egoistic bias) or communal traits (i.e., moralistic bias) in the friend or family contexts.

Overall, the results suggest that self-enhancement tendencies are universal in the sense that some proportion of individuals in all cultures exhibit such tendencies. However, conclusions regarding the relative prevalence of egoistic and moralistic bias across cultures depend on the context of the assessment (e.g., friend vs. family) and the index used. In particular, no definitive pattern of cultural differences in self-enhancement emerged once perceiver and target effects were controlled.[5]

---

[5] When we applied a more liberal criterion for accurate self-assessment (i.e., 2 *SE*s, or self-enhancement index values less than −.08 for self-effacement, between −.08 and .08 for accurate self-assessment, and greater than .08 for self-enhancement), the percentages of participants classified as accurate in their self-assessments naturally increased to a range of 7%–23% ($M = 13.34\%$) across cultures, contexts, and indices. However, conclusions regarding the relative percentages of self-enhancers and self-effacers within each culture and context did not change for any of the self-enhancement indices. Thus, the results in Table 5 were not an artifact of the particular criterion used to classify participants as self-effacers, accurate self-assessors, or self-enhancers.

Relating Self-Enhancement, Target Effects, and Perceiver Effects to Adjustment

Using SEM and the constrained measurement models described earlier, we examined how well target effects, perceiver effects, and indices of egoistic and moralistic bias predicted self-rated and observer-rated adjustment. Models in which the path coefficients were constrained to be equal across cultures showed acceptable fit (GFI range = .90–.94; CFI range = .80–.93; RMR range = .04–.07; RMSEA range = .03–.06) and were rarely significantly worse than the models with freely estimated path coefficients (χ^2 difference tests, $p > .05$). In addition, most of the path coefficients were very similar in the friend and family contexts. Therefore, to simplify the presentation, the standardized path coefficients shown in Table 6 are the means of the freely estimated path coefficients, averaged across cultures and the friend and family contexts. The significance levels are taken from the models with constrained path coefficients. In initial models, we included indices of egoistic and moralistic bias as simultaneous predictors of adjustment. However, because the egoistic and moralistic bias indices were fairly highly correlated, as reported earlier, multicollinearity was a prob-

Table 6

Mean Standardized SEM Path Coefficients Relating Self-Enhancement Indices and Target and Perceiver Effects to Self-Rated and Observer-Rated Adjustment

Index	Self-rated adjustment	Observer-rated adjustment
Target effects		
Agentic traits	.15**	.24**
Communal traits	.11	.32**
Perceiver effects		
Agentic traits	.30**	−.13*a
Communal traits	.33**	−.06
Social comparison indices		
Difference score		
Egoistic bias	.25**	−.02
Moralistic bias	.10**b	−.03
Residual		
Egoistic bias	.45**	.05
Moralistic bias	.41**	.08
Self-insight indices		
Difference score		
Egoistic bias	.37**	−.28**
Moralistic bias	.37**	−.37**
Residual		
Egoistic bias	.52**	−.06
Moralistic bias	.57**	−.02
SRM indices		
Unweighted		
Egoistic bias	.30**	.05
Moralistic bias	.27**	.00
Weighted		
Egoistic bias	.49**	.08
Moralistic bias	.53**	.17**c

Note. Table entries are the mean of the freely estimated path coefficients across cultures and the friend and family contexts. Significance levels are from models in which the path coefficients were constrained to be equal across cultures. SEM = structural equation modeling; SRM = social relations model.
[a] $p < .05$ in friend context only.   [b] $p < .01$ in friend context only.   [c] $p < .01$ in friend context and $p < .05$ in family context.
* $p < .05$.   ** $p < .01$.

lem for some models (as indicated by high correlations between parameter estimates). Therefore, we tested separate models in which either egoistic or moralistic bias predicted the adjustment outcomes. Finally, for each of the predictors in these models (target effects, perceiver effects, egoistic bias, or moralistic bias), we formally tested whether they differentially predicted self-rated versus observer-rated adjustment. To do so, we compared models in which the path coefficients for self- and observer adjustment were freely estimated versus constrained to be equal in all cultures.

Relating target and perceiver effects to adjustment. In the SRM, individuals with larger target effects have been rated more positively than others on the traits and thus have a genuine basis for good adjustment (Kwan et al., 2004). Accordingly, in Hypothesis 4, we predicted that target effects would be positively related to both self-rated and observer-rated adjustment in all cultures. As seen in Table 6, the mean standardized path coefficients relating the target effects for agentic and communal traits to self- and observer-rated adjustment ranged from modest to moderate in size, and all were positive. Target effects for the agentic traits predicted self- and other-rated adjustment equally well in both the friend, $\chi^2_{\text{diff}}(1) = .04$, $p > .05$, $\Delta\text{CFI} < .001$, and family contexts, $\chi^2_{\text{diff}}(1) = .44$, $p > .05$, $\Delta\text{CFI} = .001$. Target effects for the communal traits predicted observer-rated adjustment better than self-rated adjustment in both the friend, $\chi^2_{\text{diff}}(1) = 4.49$, $p < .05$, and family contexts, $\chi^2_{\text{diff}}(1) = 7.23$, $p < .01$, but constraining the path coefficients to be equal had little impact on model fit ($\Delta\text{CFI} \leq .004$) in either context (Cheung & Rensvold, 2002). Thus, the results provide support for Hypothesis 4 and the concept of genuine adjustment (Kwan et al., 2004).

In Hypothesis 5, we predicted that perceiver effects would be related to self-rated adjustment, but not observer-rated adjustment (Kim et al., 2012). As seen in Table 6, this hypothesis was supported for both agentic and communal traits, $\chi^2_{\text{diff}}(1)$ range = 34.84–59.05, $ps < .01$; ΔCFI range = .03–.04. Thus, individuals with greater general evaluative biases or person-positivity effects described themselves as better adjusted but were not viewed as better adjusted by friends and family members.

Relating self-enhancement to adjustment. Finally, in Hypothesis 6, we predicted that self-enhancement, as measured by the SRM indices, would be positively related to self-rated adjustment, but unrelated or negatively related to observer-rated adjustment. As seen in Table 6, this hypothesis was supported with one exception (i.e., the modest positive path coefficient relating moralistic bias to observer-rated adjustment using the weighted SRM index). Indeed, formal tests of freely estimated versus constrained models showed that the SRM indices were more strongly related to self-rated adjustment than to observer-rated adjustment, $\chi^2_{\text{diff}}(1)$ range = 15.58–65.44, $ps < .01$; ΔCFI range = .01–.06. The weighted SRM index, which takes into account the extent to which target and perceiver effects impact self-ratings, correlated more highly than the unweighted SRM index with self-rated adjustment.

Interestingly, we would draw similar conclusions about the relationship between self-enhancement and adjustment based on the traditional (non-SRM) self-enhancement indices. For each index, both egoistic and moralistic bias were positively related to self-rated adjustment but not to observer-rated adjustment. Indeed, formal tests of freely estimated versus constrained models showed that for each index, prediction of self-rated adjustment was significantly better than prediction of observer-rated adjustment, $\chi^2_{\text{diff}}(1)$ range = 4.13–136.84,

*p*s < .05; ΔCFI range = .001–.11. One noteworthy difference across the various indices involved the difference-score version of the self-insight index. With this index, both egoistic and moralistic bias were negatively related to observer-rated adjustment. However, when the mean ratings by others were controlled (i.e., partialed out) in the residual self-insight index, the negative relationships were eliminated. This suggests that the negative path coefficients with the difference-score self-insight index were due to confounding with the target effects (i.e., ratings by others). Another noteworthy difference between the indices was that the path coefficients relating self-enhancement to self-rated adjustment were larger for those indices that partial out mean ratings of or by others (i.e., the residual indices) or take into account the impact of perceiver and target effects on self-ratings (i.e., the weighted SRM index). These indices are more correlated with the original self-ratings and thus may share more method variance with the measures of self-rated adjustment.

Discussion

Our goal was to help resolve current controversies regarding the universality of self-enhancement biases and their relationship to adjustment. Kwan et al. (2004) proposed that use of the SRM (Kenny, 1994) could explain the conflicting findings between studies that have applied social comparison and self-insight approaches in trait judgments. In the first cross-cultural application of this approach, we tested hypotheses about the comparability and consistency of the alternative indices, cultural differences in the prevalence of egoistic and moralistic biases, and the relationship between self-enhancement and self-rated and observer-rated adjustment.

Comparability and Consistency of Alternative Indices

In four diverse cultures, we replicated Kwan et al.'s (2004, 2008) findings that social comparison, self-insight, and SRM indices are not interchangeable and that social comparison and self-insight indices are confounded with target and perceiver effects, respectively. These results suggest that the social comparison method may erroneously classify some individuals as self-enhancers, despite being positively rated by others, thus justifying the positive self-evaluations. Similarly, self-insight indices may misleadingly classify some individuals as self-enhancers because they show a general tendency to rate people (including themselves) positively (i.e., a general person-positivity effect).

We also extended Kwan et al.'s (2004, 2008) results by applying three additional self-enhancement indices that have been proposed in the literature (John & Robins, 1994; Kenny & West, 2010). Use of these indices also produced some varied results. For example, the residual versions of the social comparison and self-insight indices, as compared with the difference-score versions, were more consistent across the friend and family contexts, and more highly correlated with self-rated adjustment (but not observer-rated adjustment) because of their stronger dependence on the self-ratings. However, a significant disadvantage of the residual indices is that they are necessarily zero within each culture and thus cannot be meaningfully compared across cultures. Furthermore, the residual versions of the social comparison and self-insight indices are still confounded with target and perceiver effects, respectively, and are thus disadvantageous relative to the SRM indices.

Kenny and West (2010; see also Kenny, 1994) have argued that the weighted SRM index should be superior to the unweighted index proposed by Kwan et al. (2004) because it takes into account the extent to which the self-ratings are actually influenced by perceiver effects (i.e., assumed similarity) and target effects (i.e., self–other correlations). In the present study, the weighted and unweighted SRM indices were fairly highly correlated, and our primary conclusions would not have changed using either version of the index. However, the weighted index was more consistent across the friend and family contexts. In addition, because the weighted index is more highly correlated with the self-ratings, it exhibited higher correlations with self-rated adjustment. Finally, a disadvantage of both SRM indices is that they are necessarily zero within each culture and thus cannot be meaningfully compared across cultures.

Culture and Self-Enhancement Biases

Of particular importance was our finding that the alternative self-enhancement indices could lead to different conclusions regarding the key substantive questions addressed in the study—the prevalence of self-enhancement biases across cultures and their relationship to adjustment. For example, in comparing the percentages of self-enhancers and self-effacers within each culture, some cultural differences were observed, but only with the traditional (non-SRM) indices. The results with the traditional indices were generally consistent with the view that Americans, at least with their friends, tend to self-enhance more than self-efface, whereas Chinese tend to self-efface, particularly on communal traits. On the one hand, these findings recall cultural psychology perspectives that attribute self-enhancement in individualistic cultures to the centrality of internal attributes and self-effacement in collectivistic cultures to modesty or self-improvement motives (Brown & Kobayashi, 2002; Cai et al., 2011; Heine, 2001, 2005; Kurman, 2002). Indeed, our Chinese results closely resemble those of Yik et al. (1998), who found—using the self-insight method with class peers—that Hong Kong Chinese tend to self-efface more than self-enhance, with self-effacement more definitive for communal traits than agentic traits. On the other hand, our findings provide, at best, only limited support for Hypothesis 3, which was based on the tactical self-enhancement model (Sedikides et al., 2003; see also Paulhus & John, 1998). If we assume that individualistic Americans value agentic traits and collectivistic Chinese value communal traits, then the prevalence of egoistic (agentic) bias in the U.S. sample (at least in the friend context) provides some support for this model. However, in the Chinese sample, self-effacement tendencies were more prevalent than self-enhancement tendencies on communal traits, which is inconsistent with the model. Most important, however, and worth emphasizing, was our finding of no definitive cultural differences between the percentages of self-enhancers versus self-effacers in either the friend or the family contexts once perceiver and target effects were unconfounded in the SRM indices. Previous research suggests that the four cultures vary along the cultural dimensions of individualism-collectivism and dialecticism (Díaz-Loving & Draguns, 1999; Hofstede, 2001; Katigbak et al., 2013; Peng & Nisbett, 1999; Spencer-Rodgers et al., 2010). Thus, our results suggest that neither cultural dimension was associated with differential tendencies to self-enhance or self-efface once perceiver and target effects are controlled. In addition,

the universality of self-enhancement biases (as well as self-effacement biases) was supported by our finding of such biases in a significant percentage of individuals within each culture.

Self-Enhancement and Adjustment

The strength of the relationship between self-enhancement and adjustment also differed to some extent, depending on the self-enhancement index used. In particular, the relationships between self-enhancement and self-rated adjustment were stronger for those indices that partial out mean ratings *of* or *by* others (i.e., the residual indices) or take into account the impact of perceiver and target effects on self-ratings (i.e., the weighted SRM index). As noted earlier, these indices are more correlated with the original self-ratings and thus may share more method variance with the measures of self-rated adjustment. Nonetheless, based on all six indices, we would conclude that self-enhancement is positively related to self-rated adjustment, but unrelated or negatively related to observer-rated adjustment. This finding is consistent with previous theory and findings (e.g., Church et al., 2006; Kurt & Paulhus, 2008; Paulhus & John, 1998). In addition, the moderate correlations between the latent variables representing self-rated and observer-rated adjustment supports the validity of both adjustment measures.

Nonetheless, the finding that self-enhancement bias was related to self-rated but not observer-rated adjustment raises the question of whether the former relationship is inflated due to shared method variance (Kim et al., 2012; Kurt & Paulhus, 2008). The present study cannot definitively resolve this issue. However, to the extent that self-enhancement biases provide a genuine mechanism for maintaining subjective well-being, the positive relationship is likely to be, at least in part, substantively meaningful (Kurt & Paulhus, 2008; Taylor & Brown, 1988). Indeed, it would be difficult to assess some intrapsychic aspects of adjustment without consulting the target individuals themselves. One advantage of the SRM model is that it controls for general evaluative biases (i.e., perceiver effects), as well as trait standing (i.e., target effects), thus reducing the likelihood that the relationship between self-enhancement and adjustment is largely artifactual (Kwan et al., 2004, 2008).

Recently, in a study of European and Asian Canadians, Kim et al. (2012) introduced an alternative SEM-based approach to distinguishing self-enhancement from general evaluative biases, while controlling for variance in personality traits in the prediction of self- and observer-rated adjustment. Although the analytical methods were different than the SRM approach used in the present study, some of the research questions were the same, so it is useful to compare the results. In the present study, the SRM perceiver effects correspond to Kim et al.'s general evaluative bias, the SRM target effects are analogous to Kim et al.'s trait variance, and the SRM-based self-enhancement indices provide a measure of self-enhancement that is unconfounded by general evaluative biases and trait standing, as in the Kim et al. study. The latent correlations between self- and observer-rated adjustment (life satisfaction in the Kim et al. study) were somewhat higher in the present study (mean $r = .43$ in the friend context and .55 in the family context) than was reported by Kim et al. ($r = .31$), possibly due to the relatively short length of acquaintance between the first-year students and their friends or dating partners in the latter study. A key

finding, replicated in both studies, was that general evaluative bias (i.e., perceiver effects) predicted self-ratings of adjustment, but was only weakly, if at all, related to observer-rated adjustment. Kim et al. found no cultural differences in self-enhancement tendencies—a finding that was replicated in the present study with our SRM indices. Kim et al. did find that European Canadians exhibited greater general evaluative biases than Asian Canadians, a result that we could not test because the cultural means of SRM perceiver effects are necessarily zero. The most significant difference in findings between the two studies was the following: In the present study, self-enhancement biases—even after controlling for perceiver and target effects—predicted self-rated adjustment in all cultures, whereas Kim et al.'s SEM model did not include a path from self-enhancement to life satisfaction. Although Kim et al.'s model fit the data well without such a path, it would be of interest to see whether the path coefficient would be statistically significant or improve the fit of the model further. Of course, there were other differences between the two studies that might account for this difference in results. For example, the adjustment measures were different in the two studies, and trait standing in Kim et al.'s study was based on participants' self-ratings, whereas it was based on the consensus of multiple observers in the present study. Further research will be needed to determine whether the two analytic strategies will tend to produce similar or different results in various populations and with alternative adjustment measures.

Strengths and Limitations

There were several strengths of the study. First, the study was apparently the first to apply the SRM and a round-robin design to investigate self-enhancement in diverse cultures. Second, we examined self-enhancement and its relationship to adjustment in both friend and family contexts. Third, we examined multiple self-enhancement indices and both self- and observer-rated adjustment.

There were also several limitations of the study. One involved the measures of adjustment used. Round-robin designs are demanding for participants, and we wished to obtain as many complete round-robin data sets as possible. In addition, target participants were asked to complete measures of cultural dimensions (e.g., dialecticism, self-construals; see Katigbak et al., 2013). Therefore, we used short adjustment measures, but applied them as multiple indicators in SEM analyses, which provide some correction for unreliability of measurement. Nonetheless, it would be advantageous in future cross-cultural studies to administer longer measures of relevant constructs such as narcissism and self-esteem (Church et al., 2006; Colvin, Block, & Funder, 1995; Kwan et al., 2008; Paulhus, 1998; Robins & Beer, 2001). In addition, we obtained observer ratings of participants' intrapsychic adjustment, not their interpersonal or relational adjustment, which might have related differently to self-enhancement biases (e.g., Kurt & Paulhus, 2008; Kwan et al., 2008). Second, the observer ratings of adjustment were made by the same observers who made the trait ratings that were used to derive the self-enhancement indices. This enabled us to assess adjustment as evaluated by friends and family members who have actually observed each others' trait-relevant behavior over time in the respective contexts. Nonetheless, in future studies, it would be beneficial to also obtain ratings of adjustment from independent observers or clinicians. Indeed, the inconsistent findings in the literature relating self-enhancement to

adjustment may be due not only to the varying self-enhancement indices used—as emphasized in the present study—but also to differences in the way well-being or adjustment has been assessed. Third, the number of traits used to measure each Big Five dimension was limited, so we did not conduct separate analyses for each Big Five dimension. It is possible that the degree of confounding in the social comparison and self-insight indices will differ across the Big Five domains (Kwan et al., 2008). Fourth, we drew largely on Paulhus and John's (1998) model of egoistic and moralistic bias to select agentic (extraversion and openness) and communal (agreeableness and conscientiousness) traits expected to be valued more in individualistic and collectivistic cultures, respectively. We did not ask participants to also rate the personal importance of the traits, which can provide a more direct test of the tactical self-enhancement model (Sedikides et al., 2007a). Tam et al. (2012) have recently found that it might be important to distinguish between personally important and culturally important traits. Fifth, it may also be important to distinguish between self-enhancement and self-protection strategies when investigating cultural manifestations of the motive to maintain a positive self-view. For example, Hepper, Sedikides, and Cai (2013) recently found that participants from Western countries endorse enhancement-oriented strategies more and protection-oriented strategies less than Chinese participants.

Finally, we acknowledge that round-robin designs may not always be practical, and under some conditions, more traditional designs may produce meaningful results. For example, when fairly objective criteria are available, such as academic grades, test scores, or specific observed behaviors, confounding by target effects may not be a concern. In addition, the use of ranks rather than ratings can eliminate the confounding of perceiver effects in trait judgments, although their use also introduces potential limitations (e.g., floor and ceiling effects, disallowing of ties; John & Robins, 1994; Kwan et al., 2008; Robins & Beer, 2001). Kwan et al. (2008) found that confounding by perceiver effects is also reduced when perceivers are well acquainted with rating targets. However, as we saw in the present study, confounding by perceiver effects was not eliminated even when raters were well-acquainted friends and family members. In summary, we do not argue that self-enhancement biases in trait judgments can only be meaningfully investigated with the SRM. Indeed, alternative models have recently been proposed as a means to control for general evaluative biases and trait standing in studies of self-enhancement and adjustment (Kim et al., 2012). Nonetheless, we recommend that the results of the present study—which support in additional cultures the concerns originally raised by Kwan et al. (2004, 2008)—be considered by future self-enhancement researchers. When it is feasible to conduct round-robin studies, we recommend use of SRM indices of self-enhancement.

Conclusion

Conclusions regarding cultural differences in self-enhancement biases and their relationship to adjustment may depend on the conceptualization and index of self-enhancement used by researchers. Consistent with some cultural psychology perspectives, cultural differences in the relative prevalence of self-enhancement and self-effacement tendencies were found on the basis of traditional social comparison and self-insight indices, but no cultural

differences were observed once perceiver and target effects were controlled in SRM indices. To a similar extent in all four cultures, self-enhancement tendencies, as measured by SRM indices, were moderately related to self-rated adjustment, but unrelated, or less so, to observer-rated adjustment. Finally, we found no definitive evidence of cultural differences in the relationship between self-enhancement and adjustment as a function of individualism-collectivism or dialecticism. Overall, the results suggest that an approach to self-enhancement based on the SRM (Kenny, 1994; Kwan et al., 2004)—which controls for perceiver and target effects—may help to resolve current controversies in the self-enhancement literature, both within and across cultures.

References

Asendorpf, J. B., & Ostendorf, F. (1998). Is self-enhancement healthy? Conceptual, psychometric, and empirical analysis. *Journal of Personality and Social Psychology, 74,* 955–966. doi:10.1037/0022-3514.74.4 .955

Bonanno, G. A., Field, N. P., Kovacevic, A., & Kaltman, S. (2002). Self-enhancement as a buffer against extreme adversity: Civil war in Bosnia and traumatic loss in the United States. *Personality and Social Psychology Bulletin, 28,* 184–196. doi:10.1177/0146167202282005

Bond, M. H., & Cheung, T. (1983). College students' spontaneous self-concept. *Journal of Cross-Cultural Psychology, 14,* 153–171. doi: 10.1177/0022002183014002002

Brown, J. D. (2012). Understanding the better than average effect: Motives (still) matter. *Personality and Social Psychology Bulletin, 38,* 209–219. doi:10.1177/0146167211432763

Brown, J. D., & Cai, H. (2010). Self-esteem and trait importance moderate cultural differences in self-evaluations. *Journal of Cross-Cultural Psychology, 41,* 116–123. doi:10.1177/0022022109349509

Brown, J. D., & Kobayashi, C. (2002). Self-enhancement in Japan and America. *Asian Journal of Social Psychology, 5,* 145–168. doi:10.1111/1467-839X.00101

Cai, H., Sedikides, C., Gaertner, L., Wang, C., Carvallo, M., Xu, Y., . . . Jackson, L. E. (2011). Tactical self-enhancement in China: Is modesty at the service of self-enhancement in East Asian culture? *Social Psychological and Personality Science, 2,* 59–64. doi:10.1177/1948550610376599

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling, 9,* 233–255. doi:10.1207/S15328007SEM0902_5

Church, A. T., Alvarez, J. M., Katigbak, M. S., Mastor, K. A., Cabrera, H. F., Tanaka-Matsumi, J., . . . Buchanan, A. L. (2012). Self-concept consistency and short-term stability in eight cultures. *Journal of Research in Personality, 46,* 556–570. doi:10.1016/j.jrp.2012.06.003

Church, A. T., Katigbak, M. S., del Prado, A. M., Valdez-Medina, J. L., Miramontes, L. G., & Ortiz, F. A. (2006). A cross-cultural study of trait self-enhancement, explanatory variables, and adjustment. *Journal of Research in Personality, 40,* 1169–1201. doi:10.1016/j.jrp.2006.01.004

Colvin, C. R., & Block, J. (1994). Do positive illusions foster mental health? An examination of the Taylor and Brown formulation. *Psychological Bulletin, 116,* 3–20. doi:10.1037/0033-2909.116.1.3

Colvin, C. R., Block, J., & Funder, D. C. (1995). Overly positive evaluations and personality: Negative implications for mental health. *Journal of Personality and Social Psychology, 68,* 1152–1162. doi:10.1037/0022-3514.68.6.1152

Díaz-Loving, R., & Draguns, J. G. (1999). Culture, meaning, and personality in Mexico and in the United States. In Y.-T. Lee, C. R. McCauley, & J. G. Draguns (Eds.), *Personality and person perception across cultures* (pp. 103–126). Mahwah, NJ: Lawrence Erlbaum.

Gaertner, L., Sedikides, C., & Cai, H. (2012). Wanting to be great and better but not average: On the pancultural desire for self-enhancing and

self-improving feedback. *Journal of Cross-Cultural Psychology, 43,* 521–526. doi:10.1177/0022022112438399

Gaertner, L., Sedikides, C., & Chang, K. (2008). On pancultural self-enhancement: Well-adjusted Taiwanese self-enhance on personally valued traits. *Journal of Cross-Cultural Psychology, 39,* 463–477. doi:10.1177/0022022108318431

Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment, 4,* 26–42. doi:10.1037/1040-3590.4.1.26

Grimm, S. D., Church, A. T., Katigbak, M. S., & Reyes, J. A. S. (1999). Self-described traits, values, and moods associated with individualism and collectivism: Testing I-C theory in an individualistic (U. S.) and a collectivistic (Philippine) culture. *Journal of Cross-Cultural Psychology, 30,* 466–500. doi:10.1177/0022022199030004005

Hamamura, T., Heine, S. J., & Takemoto, T. R. S. (2007). Why the better-than-average effect is a worse-than-average measure of self-enhancement: An investigation of conflicting findings from studies of East Asian self-evaluations. *Motivation and Emotion, 31,* 247–259. doi:10.1007/s11031-007-9072-y

Heine, S. J. (2001). Self as a cultural product: An examination of East Asian and North American selves. *Journal of Personality, 69,* 881–905. doi:10.1111/1467-6494.696168

Heine, S. J. (2005). Where is the evidence for pancultural self-enhancement? A reply to Sedikides, Gaertner, and Toguchi (2003). *Journal of Personality and Social Psychology, 89,* 531–538. doi:10.1037/0022-3514.89.4.531

Heine, S. J., & Hamamura, T. (2007). In search of East Asian self-enhancement. *Personality and Social Psychology Review, 11,* 4–27. doi:10.1177/1088868306294587

Heine, S. J., Kitayama, S., & Hamamura, T. (2007). Inclusion of additional studies yields different conclusions: Comment on Sedikides, Gaertner, & Vevea (2005), *Journal of Personality and Social Psychology*. *Asian Journal of Social Psychology*, *10,* 49–58. doi:10.1111/j.1467-839X.2007.00211.x

Heine, S. J., & Lehman, D. R. (1995). Cultural variation in unrealistic optimism: Does the West feel more invulnerable than the East? *Journal of Personality and Social Psychology, 68,* 595–607. doi:10.1037/0022-3514.68.4.595

Heine, S. J., Lehman, D. R., Markus, H. R., & Kitayama, S. (1999). Is there a universal need for positive self-regard? *Psychological Review, 106,* 766–794. doi:10.1037/0033-295X.106.4.766

Hepper, E. G., Sedikides, C., & Cai, H. (2013). Self-enhancement and self-protection strategies in China: Cultural expressions of a fundamental human motive. *Journal of Cross-Cultural Psychology, 44,* 5–23. doi:10.1177/0022022111428515

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations* (2nd ed.). Thousand Oaks, CA: Sage.

John, O. P., & Robins, R. W. (1994). Accuracy and bias in self-perception: Individual differences in self-enhancement and the role of narcissism. *Journal of Personality and Social Psychology, 66,* 206–219. doi:10.1037/0022-3514.66.1.206

Katigbak, M. S., Church, A. T., Alvarez, J. M., Wang, C., Vargas-Flores, J. D., Ibáñez-Reyes, J., . . . Ortiz, F. A. (2013). Cross-observer agreement and self-concept consistency across cultures: Integrating trait and cultural psychology perspectives. *Journal of Research in Personality, 47,* 78–89. doi:10.1016/j.jrp.2012.09.003

Kenny, D. A. (1994). *Interpersonal perception: A social relations analysis*. New York, NY: Guilford Press.

Kenny, D. A. (2007). *SOREMO version (V. 2)* [Manual]. Retrieved from http://davidakenny.net/srm/srmp.htm

Kenny, D. A., & West, T. V. (2010). Similarity and agreement in self- and other perception: A meta-analysis. *Personality and Social Psychology Review, 14,* 196–213. doi:10.1177/1088868309353414

Kim, H., Schimmack, U., & Oishi, S. (2012). Cultural differences in self- and other-evaluations and well-being: A study of European and Asian Canadians. *Journal of Personality and Social Psychology, 102,* 856–873. doi:10.1037/a0026803

Kitayama, S., & Karasawa, M. (1997). Implicit self-esteem in Japan: Name letters and birthday numbers. *Personality and Social Psychology Bulletin, 23,* 736–742. doi:10.1177/0146167297237006

Kobayashi, C., & Brown, J. D. (2003). Self-esteem and self-enhancement in Japan and America. *Journal of Cross-Cultural Psychology, 34,* 567–580. doi:10.1177/0022022103256479

Kobayashi, C., & Greenwald, A. G. (2003). Implicit-explicit differences in self-enhancement for Americans and Japanese. *Journal of Cross-Cultural Psychology, 34,* 522–541. doi:10.1177/0022022103257855

Kurman, J. (2001). Self-enhancement: Is it restricted to individualistic cultures? *Personality and Social Psychology Bulletin, 27,* 1705–1716. doi:10.1177/01461672012712013

Kurman, J. (2002). Measured cross-cultural differences in self-enhancement and the sensitivity of the self-enhancement measure to modesty response. *Cross-Cultural Research, 36,* 73–95. doi:10.1177/1069397102036001004

Kurman, J., & Sriram, N. (1997). Self-enhancement, generality of self-evaluation, and affectivity in Israel and Singapore. *Journal of Cross-Cultural Psychology, 28,* 421–441. doi:10.1177/0022022197284003

Kurt, A., & Paulhus, D. L. (2008). Moderators of the adaptiveness of self-enhancement: Operationalization, motivational domain, adjustment facet, and evaluator. *Journal of Research in Personality, 42,* 839–853. doi:10.1016/j.jrp.2007.11.005

Kwan, V. S. Y., John, O. P., Kenny, D. A., Bond, M. H., & Robins, R. W. (2004). Reconceptualizing individual differences in self-enhancement bias: An interpersonal approach. *Psychological Review, 111,* 94–110. doi:10.1037/0033-295X.111.1.94

Kwan, V. S. Y., John, O. P., Robins, R. W., & Kuang, L. L. (2008). Conceptualizing and assessing self-enhancement bias: A componential approach. *Journal of Personality and Social Psychology, 94,* 1062–1077. doi:10.1037/0022-3514.94.6.1062

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98,* 224–253. doi:10.1037/0033-295X.98.2.224

McNulty, J. K., O'Mara, E. M., & Karney, B. R. (2008). Benevolent cognitions as a strategy of relationship maintenance: "Don't sweat the small stuff" . . . . But it is not all small stuff. *Journal of Personality and Social Psychology, 94,* 631–646. doi:10.1037/0022-3514.94.4.631

O'Mara, E. M., Gaertner, L., Sedikides, C., Zhou, X., & Liu, Y. (2012). A longitudinal-experimental test of the panculturality of self-enhancement: Self-enhancement promotes psychological well-being both in the west and the east. *Journal of Research in Personality, 46,* 157–163. doi:10.1016/j.jrp.2012.01.001

O'Mara, E. M., McNulty, J. K., & Karney, B. R. (2011). Positively biased appraisals in everyday life: When do they benefit mental health and when do they harm it? *Journal of Personality and Social Psychology, 101,* 415–432. doi:10.1037/a0023332

Paulhus, D. L. (1998). Interpersonal and intrapsychic adaptiveness of trait self-enhancement: A mixed blessing? *Journal of Personality and Social Psychology, 74,* 1197–1208. doi:10.1037/0022-3514.74.5.1197

Paulhus, D. L., & John, O. P. (1998). Egoistic and moralistic biases in self-perception: The interplay of self-deceptive styles with basic traits and motives. *Journal of Personality, 66,* 1025–1060. doi:10.1111/1467-6494.00041

Peng, K., & Nisbett, R. E. (1999). Culture, dialectics, and reasoning about contradiction. *American Psychologist, 54,* 741–754. doi:10.1037/0003-066X.54.9.741

Robins, R. W., & Beer, J. S. (2001). Positive illusions about the self: Short-term benefits and long-term costs. *Journal of Personality and Social Psychology, 80,* 340–352. doi:10.1037/0022-3514.80.2.340

Saucier, G. (1994). Mini-markers: A brief version of Goldberg's unipolar big-five markers. *Journal of Personality Assessment, 63,* 506–516. doi:10.1207/s15327752jpa6303_8

Schneider, L., & Schimmack, U. (2009). Self-informant agreement in well-being ratings: A meta-analysis. *Social Indicators Research, 94,* 363–376. doi:10.1007/s11205-009-9440-y

Sedikides, C., Gaertner, L., & Toguchi, Y. (2003). Pancultural self-enhancement. *Journal of Personality and Social Psychology, 84,* 60–79. doi:10.1037/0022-3514.84.1.60

Sedikides, C., Gaertner, L., & Vevea, J. L. (2005). Pancultural self-enhancement reloaded: A meta-analytic reply to Heine (2005). *Journal of Personality and Social Psychology, 89,* 539–551. doi:10.1037/0022-3514.89.4.539

Sedikides, C., Gaertner, L., & Vevea, J. L. (2007a). Evaluating the evidence for pancultural self-enhancement. *Asian Journal of Social Psychology, 10,* 201–203. doi:10.1111/j.1467-839X.2007.00227.x

Sedikides, C., Gaertner, L., & Vevea, J. L. (2007b). Inclusion of theory-relevant moderators yield the same conclusions as Sedikides, Gaertner, and Vevea (2005): A meta-analytical reply to Heine, Kitayama, and Hamamura (2007). *Asian Journal of Social Psychology, 10,* 59–67. doi:10.1111/j.1467-839X.2007.00212.x

Sedikides, C., & Gregg, A. P. (2008). Self-enhancement: Food for thought. *Perspectives on Psychological Science, 3,* 102–116. doi:10.1111/j.1745-6916.2008.00068.x

Silvera, D. H., & Seger, C. R. (2004). Feeling good about ourselves: Unrealistic self-evaluations and their relation to self-esteem in the United States and Norway. *Journal of Cross-Cultural Psychology, 35,* 571–585. doi:10.1177/0022022104268389

Spencer-Rodgers, J., Peng, K., Wang, L., & Hou, Y. (2004). Dialectical self-esteem and east-west differences in psychological well-being. *Personality and Social Psychology Bulletin, 30,* 1416–1432. doi:10.1177/0146167204264243

Spencer-Rodgers, J., Williams, M. J., & Peng, K. (2010). Cultural differences in expectations of change and tolerance for contradiction: A decade of empirical research. *Personality and Social Psychology Bulletin, 14,* 296–312. doi:10.1177/1088868310362982

Tam, K.-P., Leung, A. K.-y., Kim, Y.-H., Chiu, C.-Y., Lau, I. Y.-M., & Au, A. K. C. (2012). The better-than-average effect in Hong Kong and the United States: The role of personal trait importance and cultural trait importance. *Journal of Cross-Cultural Psychology, 43,* 915–930. doi:10.1177/0022022112443774

Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin, 103,* 193–210. doi:10.1037/0033-2909.103.2.193

Taylor, S. E., & Brown, J. D. (1994). Positive illusions and well-being revisited: Separating fact from fiction. *Psychological Bulletin, 116,* 21–27. doi:10.1037/0033-2909.116.1.21

Taylor, S. E., Lerner, J. S., Sherman, D. K., Sage, R. M., & McDowell, N. K. (2003). Portrait of the self-enhancer: Well adjusted and well liked or maladjusted and friendless? *Journal of Personality and Social Psychology, 84,* 165–176. doi:10.1037/0022-3514.84.1.165

Yamaguchi, S., Greenwald, A. G., Banaji, M. R., Murakami, F., Chen, D., Shiomura, K., . . . Krendl, A. (2007). Apparent universality of positive implicit self-esteem. *Psychological Science, 18,* 498–500. doi:10.1111/j.1467-9280.2007.01928.x

Yik, M. S. M., Bond, M. H., & Paulhus, D. L. (1998). Do Chinese self-enhance or self-efface? It's a matter of domain. *Personality and Social Psychology Bulletin, 24,* 399–406. doi:10.1177/0146167298244006