From East to West: Accessibility and Bias in Self–Other Comparative Judgments

Colton B. Christian1, I-Ching Lee2,3, and Sara D. Hodges1

Abstract
People often weight information about the self more heavily than information about other people when making social comparative judgments. One possible explanation for this egocentrism is that information about the self is more accessible than information about others. We examine this egocentrism in samples from the United States and Taiwan. Study 1 finds egocentrism in comparisons of the self with the average other person in both cultures. Study 2 measured reaction times, demonstrating that (a) information about the self is more accessible than information about the average other and (b) as the accessibility of self-information increases, so does the influence of that information. Study 3 replicates Study 2, using comparisons with a specific other person. Egocentrism occurred in both cultures, suggesting that heavier weighting of self-information occurs across the traditional East–West cultural divide.

Keywords
social comparison, egocentrism, accessibility, cross-cultural

Received August 20, 2013; revision accepted July 13, 2014

In Carly Simon’s classic pop music hit of 1972, she disparages her ex-lover by singing, “You’re so vain,” and lists several examples illustrating the lover’s inflated sense of himself. In another line, she sings, “You probably think this song is about you,” which also comes across as a dig, but one aimed more at the ex-lover’s self-centeredness—using a cognitive frame of reference that is anchored by the self—than his self-enhancement. To distinguish the two biases in this article, we term the former bias egocentrism and the latter ego-enhancement. Both biases have been studied in the context of social comparison: When people compare themselves with others, there is evidence that the self figures prominently as a reference point (Catrambone, Beike, & Niedenthal, 1996; Kruger, 1999) and that the results of these comparisons tend to favor the self over others (for a review, see Alicke & Govorun, 2005).

One popular line of research on the ego-enhancing side has focused on cross-cultural comparisons between people from Western and Eastern cultures. While past studies have identified culture as an important moderating variable when it comes to ego-enhancement (e.g., Heine, Lehman, Markus, & Kitayama, 1999; Sedikides, Gaertner, & Toguchi, 2003), researchers who study self–other comparisons disagree whether people from East Asian cultures, who tend to score high on interdependence, show ego-enhancement to the same degree as people from Western cultures (especially North Americans descended from Europeans) who tend to score high on independence (Heine, 2005; Heine & Hamamura, 2007; Heine & Lehman, 1997; Heine et al., 1999; Sedikides et al., 2003; Sedikides, Gaertner, & Vevea, 2005). Scholars on one side of the debate purport that ego-enhancement is a universal process that occurs in both Western and East Asian cultures (Sedikides et al., 2003, 2005), while scholars on the other side question this universality (Heine, 2005; Heine & Hamamura, 2007). Both sides, however, seem to agree that culture affects social comparison (e.g., Heine et al., 1999, discuss how culture may affect how self-critical social comparisons are; Sedikides et al., 2003, discuss how culture may influence self-enhancement with regard to specific types of traits; see also Kurman, 2001).

In contrast, cross-cultural investigations about the prevalence of egocentrism are much scarcer and have remained largely unexplored in East Asian cultures. When East–West
comparisons of egocentrism have been made previously (Henrich, Heine, & Norenzayan, 2010; Wu & Keysar, 2007), the focus has been on spatial or visual perspective taking. However, the current article focuses instead on the over-weighting of the self in comparisons. In the research that follows, we first examine whether people from a culture traditionally classified as “Eastern” (i.e., Taiwan) and people from a culture classified as “Western” (i.e., the United States) demonstrate egocentrism in comparative judgments. Furthermore, we investigate whether a single mechanism can explain this egocentrism in both cultures.

Imagine a person wondering how she compares with others in terms of the frequency of exercise. Using Chambers and Windschitl’s (2004) three-stage model of comparative judgments, first, information about the self and information about other people are brought to mind. In the second stage, this information is assessed absolutely (e.g., “How often do I exercise?” and “How often does an average other person exercise?”). Finally, information about the self and information about others are incorporated into a comparative rating (e.g., “How often do I exercise in comparison with the average other person?”).

The advantage of Chambers and Windschitl’s (2004) model is that it allows for variation in the extent to which each of the three stages is carried out. The model posits that information about the self and information about others both go into making a comparative judgment, but it does not specify that the two types of information are incorporated equally. In contrast, a normative model would dictate that comparative judgments should be composed equally of information about the self and the average other. Normatively, when a person is asked how often she exercises compared with her peers, her answer should be composed of information about how often she (the self) exercises and about how often her peers exercise. But, as with a number of other social processes that require people to interpret or integrate information about other people, humans are notoriously non-normative when they make comparative judgments (Alicke, Klotz, Breitenbecher, Yurak, & Vredenburg, 1995; Kruger, 1999; Moore & Small, 2007).

In the West at least, self–other comparisons are often non-normative in self-enhancing ways that favor the self relative to others—for example, there is a widespread tendency for people to see themselves as better than the average person (Alicke et al., 1995). However, ego-enhancing mechanisms fall short when it comes to explaining a number of self-biased comparisons that do not favor the self. For example, people do not always self-enhance: There are circumstances when people will reliably rate themselves worse than average on various skills or traits (Kruger, 1999; Moore, 2007). In addition, people’s judgments of how often they perform certain non-evaluative behaviors (i.e., behaviors that are neither particularly admired nor despised, such as checking one’s bank balance) also demonstrate non-normative qualities. Thus, egocentric mechanisms are also needed to explain comparative biases.

The current research specifically focuses on a form of egocentrism that involves over-weighting the self in comparative judgments such that the information about the self is more influential in the comparison than is information about other people or about the average other person. A number of different studies have demonstrated this form of egocentrism in comparative judgments (e.g., Klar & Giladi, 1999; Kruger, 1999; Kruger, Windschitl, Burrus, Fessel, & Chambers, 2008). For example, Kruger et al. (2008) demonstrated that absolute-self ratings (e.g., how often the self moves from one residence to a new one) are stronger than absolute-other ratings (how often the average other person moves from one residence to another) when it comes to predicting comparative judgments (how often the self moves relative to others). That is, when people report engaging in a behavior quite frequently, they also report engaging in the behavior relatively more frequently than the average other person, whereas when they report engaging in a behavior infrequently, they report engaging in that behavior relatively less frequently than the average other person.

Kruger (1999) suggested anchoring-and-adjustment as the mechanism behind egocentrism in comparative judgments: People first “anchor” judgments on information that is provided by an external cue or brought to mind (a process that is thought to occur automatically); they then “adjust” their judgments as additional information is provided or brought to mind (a process that is thought to require cognitive effort). The adjustments tend to be insufficient and final judgments thus disproportionately reflect the information that served as the anchor.

Kruger (1999) hypothesized that comparative judgments would be more heavily anchored on the self and that this tendency to over-weight the self would be more extreme when cognitive load interfered with adjustment. Consistent with this idea, he found that when people were asked to estimate their abilities relative to the average person, information about the self was more influential than information about the average other in predicting comparative judgments, and this bias was stronger when participants were under load.

An alternative mechanism to explain egocentrism in comparative judgments is that information about the self tends to be more accessible than information about the average other (Chambers & Windschitl, 2004). Instead of failing to adjust a self-based comparative judgment sufficiently in the direction of information about others, an accessibility argument suggests that comparative judgments are egocentric because self-information is more readily accessible than information about others from the get-go. Two sets of findings lend support to this argument. First, the cognitive load manipulation used by Kruger (1999) could have affected the retrieval of less accessible information about other people ( Bargh & Ferguson, 2000; Menon & Raghubir, 2003), while sparing the readily—even automatically—accessible self-information (Menon, Raghubir, & Schwarz, 1995). Thus, rather than
decreasing the degree of adjustment, as postulated by an anchoring-and-adjustment explanation, manipulating cognitive load may have affected the mix of information about the self and other that went into people’s comparative judgments. Second, Dunning and Hayes (1996) demonstrated that absolute-other ratings (e.g., “How well does punctuality describe Christine?”) became more egocentric as the accessibility of absolute-self ratings increased. Their work suggests that self-ratings and the corresponding accessibility of those ratings can interact to affect the egocentrism of social judgments. However, notably Dunning and Hayes tested the role of accessibility of self-ratings in making absolute self-and other-ratings, not in direct self–other comparisons.

The anchoring-and-adjustment explanation and the accessibility explanation are not entirely incompatible, however, as Kruger (1999) suggested that differences in accessibility for information about the self and others may be responsible for explaining why the self, and not others, serve as the anchor in the first place. In other words, self-anchoring may be moderated by the relatively greater accessibility of self-information (see Chan, Chambers, & Kruger, 2013, for a discussion of similar ideas). While both Kruger (1999) and Chambers and Windschitl (2004) posited accessibility as a possible mechanism for egocentric comparative judgments, neither measured accessibility to directly test this idea.

Present Research

Our goals in the present studies were threefold. First, if accessibility, which can be measured using reaction time, plays a role in determining egocentrism in comparative judgments, then information about the self should be more accessible than information about other people (something other studies have found; see Chan et al., 2013; Kuiper & Rogers, 1979). Second, we tested whether egocentrism in direct self–other comparative judgments is moderated by the accessibility of information about the self. Specifically, information about the self should be especially predictive of comparative judgments when the accessibility of self-information is high. Consistent with past research (Kruger, 1999; Kruger et al., 2008), we predict that self-ratings will generally be overweighted in self–other comparisons, but also, when information about the self is more accessible, comparative judgments should be even more egocentric.

Our third goal was to examine whether over-weighting the self in comparative judgments varies across the East–West cultural line. We considered a number of possible outcomes. Egocentric comparisons may reflect a basic mechanism unaffected by culture. Alternatively, egocentrism may be moderated by culture like ego-enhancement, such that greater egocentrism is found in the United States than Taiwan—or in its most extreme version, egocentrism is found in the United States but is absent in Taiwan. Or, egocentrism may be moderated by culture the opposite way, with more egocentrism in Taiwan than in the United States.

Because our first two goals (examining accessibility and egocentrism) rely on mechanisms that do not involve self-enhancement, we predict that when modeling accessibility’s role in comparative judgments, our results will be similar in Taiwan and the United States. This prediction is based on two sets of findings. First, although there is some evidence to suggest that East Asians are less egocentric than Westerners in terms of perspective taking (Henrich et al., 2010; Wu & Keysar, 2007), to our knowledge there have been no studies demonstrating that culture moderates how much the self is over-weighted in self–other comparisons. Second, Klar and Giladi (1999) have shown that participants from Israel—where the levels of individualism have been found to fall directly between the extremes of the United States, and Taiwan (Hofsted, 2001; Hofsted, Hofsted, & Minkov, 2010)—demonstrate a pattern of egocentric weighting similar to the pattern seen in Kruger’s work (1999; Kruger et al., 2008). As such, the content of self-perceptions, as well as the content of peer- or “average other”-perceptions, may be substantially influenced by culture, but we are predicting that the mechanisms that determine the weighting and combination of these perceptions will not be. These research questions are important to better understand the scope of cultural influence.

As a baseline, in Study 1, we essentially replicate past work demonstrating that information about the self is weighted more heavily than information about the average other when making comparative judgments—but we do so in both Taiwan and the United States. In Study 2, we investigate whether egocentrism can be accounted for by differences in accessibility of self-information. In Study 3, we replicate Study 2, using additional behaviors and comparisons with a specific, rather than an average other person.

Study 1—Egocentric Social Comparisons Across Cultures

In Study 1, we asked university students to compare how often they performed eight behaviors relative to their average peer. Participants came from both the United States (Study 1a) and Taiwan (Study 1b). The procedure was very similar across the two countries; any differences between the two studies are noted below. Materials were initially written in English, translated into Chinese (Mandarin) and back-translated separately by two Chinese–English bilingual Taiwanese.

Method

Participants

Study 1a. One hundred thirteen undergraduate participants (74 females, 39 males; \(M_{\text{age}} = 19.51, SD = 2.81, \text{range} = 18-44\)) were recruited from the University of Oregon in the United States. Ethnic composition was White (75.2%), Asian (10.6%), Hispanic (4.4%), Black (2.7%), Native American (1.8%), and multiracial/other (5.4%). In exchange...
for participation, students received credit toward completion of a course requirement.

Study 1b. One hundred fifteen undergraduate participants (71 females, 44 males; \( M_{\text{age}} = 30.96, SD = 2.79, \text{range} = 19-41 \)) were recruited from National Chengchi University in Taiwan. All participants were Asian. Participants were given the option of either receiving class credit or monetary compensation (approximately $2 in the United States).

Materials

Independent self-construal scale. Participants first completed an eight-item scale assessing how independent they viewed themselves (\( \alpha_{\text{US}} = .56; \alpha_{\text{Taiwan}} = .77 \)). Participants rated their agreement on a 6-point scale (−3 = strongly disagree to +3 = strongly agree with no zero point) to statements such as “I am independent,” and “I am autonomous” (see the appendix for complete set of items). For each participant, the eight items were averaged to create a composite score of independent self-construal.

Self, other, and comparative frequency ratings. Participants then provided absolute-self, absolute-other, and self-comparative frequency ratings for eight of the mundane behaviors used by Kruger et al. (2008, Study 1).\(^2\) This particular subset of Kruger et al.’s behaviors was selected to include an array of behaviors that crossed both observable and unobservable behaviors with rare and frequent behaviors. By asking participants to assess how they compared with peers in terms of how often they performed these non-evaluative behaviors, we were able to sidestep concerns about socially desirable responding or “better than average” effects—there was no clear response pattern that could be considered “good” or “bad.”

For absolute-self frequency ratings, participants were asked to rate the frequency that they engaged in a given behavior on an 11-point scale ranging from −5 (never engages in this behavior) to +5 (engages in this behavior quite often). For absolute-other frequency ratings, participants rated how frequently they thought the average student at their university did the same behaviors along the same dimension as absolute-self ratings. For comparative frequency ratings, participants were asked to use percentile rankings that ranged from 0% (lowest frequency of engaging in a behavior) to 100% (highest frequency of engaging in a behavior) to compare their frequency of engaging in a given behavior relative to other students at their school.

Procedure. U.S. participants completed the measures on paper while Taiwanese participants completed them on a computer (which recorded participants’ response times as well as their answers). Participants first completed the independent self-construal scale. On each of the following eight pages or screens, participants provided comparative ratings, then absolute-self ratings, and finally, absolute-other ratings for the eight behaviors. All participants saw the behaviors in the same order. Finally, participants completed a demographic questionnaire.

Results

We used multilevel modeling (MLM) because ratings for each of the eight behaviors were nested within participants. When using MLM, all within-subject predictors (e.g., evaluations of behaviors) were group mean-centered while all between-subject predictors (e.g., self-construal) were grand mean-centered. Random effects were included for first-order relationships and the intercept.

Decomposition of variance. To determine what proportion of the variance was uniquely predicted by absolute-self and absolute-other ratings, we used Hox’s (2002) formula to calculate (a) the proportion of variance in comparative ratings explained by just absolute-self ratings or just absolute-other ratings and (b) the increase in the proportion of total variance in comparative ratings explained when adding either absolute-self ratings or absolute-other ratings to a model that previously contained only the other type of absolute rating as a predictor.

Study 1a (the United States). Absolute-self ratings alone explained 69.96% of the variance in comparative ratings, while absolute-other ratings alone explained 18.42% of the variance in comparative ratings. Including absolute-other ratings (when absolute-self ratings were already entered) increased the proportion of total variance explained by 1.17%, while including absolute-self ratings (when absolute-other ratings were already entered) increased the proportion of total variance explained by 52.71%.

Study 1b (Taiwan). Absolute-self ratings alone explained 84.77% of the variance in comparative ratings, while absolute-other ratings alone explained 23.95% of the variance in comparative ratings. Including absolute-other ratings (when absolute-self ratings were already entered) increased the proportion of total variance explained by 1.04%, while including absolute-self ratings (when absolute-other ratings were already entered) increased the proportion of total variance explained by 61.87%.

Egocentrism. To determine whether absolute-self and absolute-other ratings predicted comparative ratings, absolute-self and absolute-other ratings (along with the interaction term) were entered into a regression equation predicting comparative ratings as the outcome variable.

Study 2a (the United States). Absolute-self ratings significantly predicted comparative ratings (\( b = 7.66, t = 31.83, p < .001 \)), such that when participants reported engaging in a behavior more often, they also reported engaging in that
behavior relatively more often in comparison with their average peer. Absolute-other ratings also significantly predicted comparative ratings \( (b = -1.86, t = -5.12, p < .001) \), such that when participants reported that the average student at their university engaged in a behavior more, they also reported doing the behavior relatively less in comparison with the average other. The interaction between absolute-self and absolute-other ratings also significantly predicted comparative ratings \( (b = -0.24, t = -2.57, p < .05) \). Figure 1 shows that when participants reported that the average other engaged in a behavior less often, information about how often the self engaged in that behavior was more predictive of the comparative rating.

**Study 1b (Taiwan).** The same pattern of results was found in the Taiwanese sample. Absolute-self ratings significantly predicted comparative ratings \( (b = 8.57, t = 58.93, p < .001) \), such that when participants reported engaging in a behavior more often, they also reported engaging in that behavior relatively more often in comparison with the average student at their university. Absolute-other ratings significantly predicted comparative ratings \( (b = -0.89, t = -2.98, p < .005) \), such that when participants reported that the average other engaged in a behavior more often, they viewed themselves as engaging in that behavior relatively less often in comparison with the average other. The interaction between absolute-self and absolute-other ratings also significantly predicted comparative ratings \( (b = -0.31, t = -4.49, p < .001) \). Figure 2 shows that, as in the U.S. sample, the relationship between absolute-self and comparative ratings was stronger when absolute-other ratings were low than when they were high.

**Independent self-construal.** Not surprisingly, U.S. participants \( (M = 1.21, SD = 0.59) \) reported significantly higher ratings of independent self-construal than Taiwanese participants \( (M = 0.73, SD = 0.86; t = 4.88, p < .001, \text{Cohen’s } d = .65) \). We also checked to see whether participants who reported higher levels of independent self-construal provided more egocentric comparative ratings. To accomplish this, we computed a regression equation predicting comparative ratings from absolute-self and absolute-other ratings (along with the interaction term) as within-subject predictors and self-construal scores as a between-subject predictor. None of the cross-level interactions involving independent self-construal were significant (all \( ps > .13 \)) in either sample, demonstrating that the weighting of absolute-self ratings (as well as the weighting of absolute-other ratings, for that matter) in comparative judgments does not significantly differ as a function of independent self-construal scores. An unexpected finding in this analysis was that in the United States, independent self-construal significantly influenced comparative ratings \( (b = 3.09, t = 2.04, p < .05) \), such that individuals who reported higher levels of independent self-construal also provided higher comparative ratings (i.e., viewed themselves as generally performing all behaviors relatively more frequently than their average peer). This result was not found in Taiwan.

**Discussion**

The findings from Study 1 replicate and extend past findings (e.g., Klar & Giladi, 1999; Kruger, 1999; Kruger et al., 2008) by demonstrating that absolute-self ratings explain more of the variance in comparative judgments than absolute-other ratings in both cultures. To our knowledge, Study 1b is the first to provide evidence of over-weighting of the self in self–other comparisons using East Asian participants—an area of the world previously shown to produce substantially different results from North America in terms of ego-enhancement.

When Kruger (1999) employed path analysis to understand how absolute-self and absolute-other ratings were used in comparative judgments (Study 2), he found almost no relationship between absolute-other ratings and comparative
ratings (Klar & Giladi, 1999, also found a non-significant relationship). Later, Kruger and colleagues also found almost no relationship in their 2008 article. However, in the current studies, absolute-other ratings were a significant predictor of comparative ratings, albeit explaining substantially less variance in comparative ratings than did absolute-self ratings. Three differences between our current studies and earlier work may explain this divergence. First, our results may differ from Kruger’s results because Kruger examined comparative judgments of abilities, not frequency comparisons. Second, our results may have differed from Kruger et al.’s (2008) results because we only examined the frequency of 8 of the 40 behaviors they used. It is possible that information about the average other is more influential for the particular behaviors we selected. Finally, our results may differ from Klar and Giladi’s (1999) results because those studies examined comparative judgments of happiness, a positive trait which may prompt ego-enhancement as well, something not hypothesized with our more neutral frequency comparisons.

The interaction term between absolute-self and absolute-other ratings is not reported in Kruger’s (1999) Study 1, but in the current studies, we examined this interaction and demonstrated that the relationship between absolute-self ratings and comparative ratings was stronger when participants perceived the average other as engaging in the behaviors less often. Thus, the relationship between absolute ratings and comparative ratings may not always be just a simple one-to-one ratio: Absolute-other ratings apparently have consequences for the potency of absolute-self ratings.

**Study 2—The Role of Accessibility in Egocentric Social Comparisons**

Having replicated the basic pattern of egocentrism in comparative judgments in both North America and Asia, we next sought to test whether such egocentrism is due to differential accessibility of information about self and about others. To measure accessibility, when collecting comparative, absolute-self, and absolute-other ratings, we timed how long it took participants to make each of these ratings.

First, we predicted information about the self would be more accessible than information about the average other:

**Hypothesis 1**: Absolute-self ratings should be faster than absolute-other ratings.

Second, we predicted that the accessibility (i.e., the speed) of absolute-self ratings would interact with the actual absolute-self ratings themselves to influence comparative ratings. Thus, we could test whether increased accessibility of information about the self led to a greater correspondence between the absolute rating and the comparative rating—that is, whether the degree of egocentrism in self–other comparisons is moderated by the accessibility of self-information:

**Hypothesis 2**: Faster absolute-self responses should result in a stronger relationship between absolute-self ratings and comparative ratings (i.e., comparative ratings should be more egocentric).

As in Study 1, we collected data from college students in both the United States and Taiwan. The procedure for the two studies was virtually identical; very slight differences between the two studies are noted below. Given the similarity between the two studies, and our findings from Studies 1a and 1b that egocentrism appears to occur similarly in the United States and Taiwan, results from both countries are reported together.

**Method**

**Participants**

*The United States*. Three hundred forty-eight participants (258 females, 89 males, and 1 missing; $M_{age} = 20.39$, $SD = 4.49$, range = 18-61 years) were recruited from the University of Oregon. The ethnic composition of the sample was 67.2% White or Caucasian, 13.6% Asian, 4.1% Hispanic, 3.2% Black, and 11.9% multiracial or other ethnicities. In exchange for participation, students received credit toward completion of a course requirement.

*Taiwan*. One hundred twenty-six participants (66 females, 60 males; $M_{age} = 20.71$, $SD = 1.75$, range = 18-27) were recruited from National Chengchi University. In terms of ethnicity, 92.9% of the sample described themselves as one of the major Taiwanese ethnic groups and 7.1% were described as “Other.” Students were given the option of either receiving class credit or monetary compensation (approximately $2 in the United States).

**Materials**

*Interdependent self-construal scale*. Participants completed a measure of interdependent self-construal, with statements such as “When I think of myself, I often think of my close friends or family also,” rated for agreement on a 7-point scale (1 = strongly disagree to 7 = strongly agree; in Taiwan, a −3 to +3 scale with no zero point—as was used in Study 1—was employed).2 For each participant, ratings were averaged across items to create a composite score of interdependent self-construal.

*Self, other, and comparative frequency ratings*. Participants provided absolute-self, absolute-other, and self-comparative frequency ratings for the same eight behaviors used in Study 1 but used slightly different scales in Study 2. For absolute-self and absolute-other frequency ratings, participants rated the frequency of engaging in a given behavior on a 5-point scale ranging from 0 (never engages in this behavior) to 4 (engages in this behavior quite often). For comparative
frequency ratings, participants used an 11-point scale ranging from −5 (lowest frequency of engaging in a behavior) to 5 (highest frequency of engaging in a behavior) to compare their frequency of engaging in a given behavior relative to the frequency that the average student at their school engaged in that same behavior.

Procedure. Given that absolute ratings might facilitate comparative ratings or vice versa, we varied the order in which participants made the absolute-self, absolute-other, and self-comparative frequency ratings. In the self-first condition, for each behavior, participants made absolute-self ratings first, then comparative ratings, and then absolute-other ratings. In the other-first condition, participants made absolute-other ratings first, then comparative ratings, and then absolute-self ratings. In the two control conditions, participants completed comparative ratings first, followed either by absolute-self ratings, then absolute-other ratings (control-self condition) or by absolute-other ratings, then absolute-self ratings (control-other condition). The influence of these conditions was controlled for using three contrast coded variables (self-first vs. control-self, control-other vs. other-first, and other-first/control-other vs. self-first/control-self).

Before completing a practice session, participants were told that their responses would be timed and that they should respond as quickly as possible. Participants provided comparative ratings, absolute-self ratings, and absolute-other ratings for the eight behaviors while reaction times were recorded using Medialab (Jarvis, 2008). Finally, participants completed a questionnaire that included the interdependence measure.4

Accessibility was measured using reaction times. After viewing instructions, on each subsequent screen, participants were presented simultaneously with one of the behaviors and the response target (i.e., respond for absolute-self, absolute-other, or a comparative rating). The timer began when the screen was presented and stopped when the participant responded with a key press corresponding to a number on a scale.

After correction (see below), reaction times for absolute-self ratings served as our measure of self-accessibility, while reaction times for absolute-other ratings served as our measure of other-accessibility. For self- and other-accessibility, fast reaction times (smaller numbers) indicate high accessibility; slow reaction times (larger numbers) indicate low accessibility.

Results

Preliminary data preparation. As with many other studies involving reaction times (Whelan, 2008), our reaction time data were positively skewed (Skewness > 3.45 for reaction times associated with each type of rating). To correct for this skewness, outliers were replaced and a log-transformation was employed (0 > Skewness > −0.28 for reaction times associated with each type of rating). Values that were 3 standard deviations above the mean were replaced with a value that was equivalent to 3 standard deviations above the mean and values that were less than 500 ms were replaced with 500 ms (fewer than 2% were replaced in any cell, across the total number of 3,792 reaction times).

Main analyses. MLM was employed to examine the relationships between absolute-self, absolute-other, and comparative ratings, as well as the relationships between the accessibility for each type of rating. All within-subject predictors were group mean-centered while all between-subject predictors were grand mean-centered (except for contrast coded variables). Random effects were included for first-order relationships and the intercept.

We first looked to see if the egocentrism found in previous studies and in Study 1 was replicated. As expected, absolute-self ratings predicted comparative ratings to a larger degree than did absolute-other ratings (and the interaction effect was also replicated; see Table 1).

Next, we investigated the potential mechanism behind egocentrism. Hypothesis 1 predicted that absolute-self ratings should be made more quickly than absolute-other ratings. We collapsed and averaged the log-transformed reaction times for the eight different behaviors, such that each participant had a mean reaction time for their absolute-self, absolute-other, and comparative ratings—these mean reaction times served as our measure of accessibility. We compared accessibility for absolute-self ratings with accessibility for absolute-other ratings in two different ways. First, we compared accessibility using only the response times for self ratings taken from the self-first condition and only the response times for other ratings taken from the other-first condition. This provided us with the cleanest test of Hypothesis 1 because in each of these two conditions the accessibility was not contaminated by having previously answered any other type of rating. We then employed an ANOVA with culture and type of accessibility (self vs. other) entered as between factors.

As expected, a main effect of type of accessibility was observed, such that absolute-self ratings were significantly faster than absolute-other ratings, $F(1, 231) = 63.22, p < .0001, \eta^2 = .21$. Furthermore, there was a main effect of culture such that participants in the United States made quicker ratings than participants in Taiwan, $F(1, 231) = 11.79, p < .005, \eta^2 = .04$. Ratings (aggregated across self and other)

<table>
<thead>
<tr>
<th>Rating</th>
<th>b</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>1.65</td>
<td>52.89</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Other</td>
<td>−0.25</td>
<td>−5.95</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Self × Other</td>
<td>−0.18</td>
<td>−8.18</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Table 1. Relationships Between Absolute-Self Ratings and Absolute-Other Ratings on Comparative Ratings in Study 2.
Table 2. Geometric Means and Coefficients of Variation (CV) of Accessibility (Reaction Times) for Absolute-Self, Absolute-Other, and Comparative Ratings in Study 2.

<table>
<thead>
<tr>
<th>Order</th>
<th>Self</th>
<th>Other</th>
<th>Comparative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>CV (%)</td>
<td>M</td>
</tr>
<tr>
<td>CSO</td>
<td>2,630.42</td>
<td>36.10</td>
<td>2,376.54</td>
</tr>
<tr>
<td>COS</td>
<td>1,850.11</td>
<td>42.73</td>
<td>3,148.24</td>
</tr>
<tr>
<td>SCO</td>
<td>2,711.89</td>
<td>30.43</td>
<td>2,775.26</td>
</tr>
<tr>
<td>OCS</td>
<td>2,379.15</td>
<td>40.90</td>
<td>4,059.84</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>CV (%)</td>
<td>M</td>
</tr>
<tr>
<td>United States</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>US</td>
<td>Taiwan</td>
<td>US</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>Low</td>
<td>High</td>
</tr>
</tbody>
</table>

Note. Geometric means were calculated by back-transforming the mean of the log-transformed reaction times. Coefficients of variation (CV) were calculated using the formula for log-normal transformations reported in Koopmans, Owen, and Rosenblatt (1964). This formula can be expressed by: \( \sigma = (e^{\eta^2} - 1)^{1/2} \). C = Comparative, S = Self, and O = Other.

made in the United States \((M = 3,325.91, \sigma^2 = 39.43\% )\) took .85 times as long (95% confidence interval [CI] = [.78, .94]) as ratings made in Taiwan \((M = 3,869.96, \sigma = 31.85\% ). The interaction between culture and type of accessibility (self vs. other) was non-significant \((p > .35).\)

As an additional broader test of Hypothesis 1, we examined whether accessibility for absolute-self ratings was higher than accessibility for absolute-other ratings overall, this time including response times for self and response times for average other from participants in all four order conditions, using a mixed-model ANOVA. Culture and order were entered as between-subjects factors and type of accessibility (self vs. other) was entered as the within factor, along with the two 2-way interactions (Culture × Self/Other accessibility; Order × Self/Other accessibility).

Using this broader test, a main effect of type of accessibility (self vs. other) was again observed, such that absolute-self ratings were significantly faster than absolute-other ratings, \(F(1, 469) = 122.75, p < .001, \eta^2_p = .207.\) Collapsing across cultures, absolute-self ratings \((M = 2,862.65, \sigma = 30.45\% )\) took .69 times as long (95% CI = [.6, .76]) as absolute-other ratings \((M = 4,184.32, \sigma = 34.29\% ).\) Means and coefficients of variation (CV) can be found in Table 2.

In addition, there were two 2-way interactions that qualified the finding that absolute-self ratings were made more quickly than absolute-other ratings overall. First, not surprisingly, order and type of accessibility interacted, \(F(3, 469) = 109.93, p < .001, \eta^2_p = .413.\) Whichsoever absolute rating (i.e., self or other) was made last tended to be faster, presumably because participants had already activated the specific behavior when thinking about the first absolute rating. Simple effects tests demonstrated that when absolute-self ratings came last, the reaction time advantage for absolute-self ratings over absolute-other ratings was the largest (e.g., reaction times for absolute-self ratings were shorter than reaction times for absolute-other ratings; \(F_s > 182, ps < .001\) for each of the simple effects). However, when absolute-self ratings came first or second and absolute-other ratings were last, absolute-self ratings were either no faster than absolute-other ratings or in some cases significantly slower than absolute-other ratings \((p < .001, \eta^2_p = .026, such that the reaction time advantage for absolute-self ratings over absolute-other ratings was larger in the United States than in Taiwan (see Figure 3).

To test Hypothesis 2 (that increased accessibility of self ratings should result in a stronger relationship between absolute-self ratings and comparative ratings, that is, more self over-weighting), we ran a regression equation with comparative ratings as the outcome variable. Absolute-self and absolute-other ratings and the accessibility of the absolute-self and other ratings were entered as within-subject predictors, along with the two 2-way interaction terms (Absolute-Self Ratings × Self-Accessibility; Absolute-Other Ratings × Other-Accessibility). Culture and interdependent self-construal (along with their interaction terms with the Level 1 variables) were entered as covariates at Level 2.

Results showed a significant interaction between absolute-self ratings and self-accessibility on comparative ratings.
separately, we still found a significant relationship between absolute-self ratings and comparative ratings in the United States ($p < .001$). Thus, egocentric self-weighting was observed in both cultures; it was just greater in Taiwan. In contrast, culture did not interact with the degree to which absolute-other ratings were weighted in comparative ratings, $p > .50$.

There were three other unexpected effects in Study 2. First, there was a significant three-way interaction between absolute-self ratings, self-accessibility, and culture on comparative ratings, indicating that the interaction effect of absolute-self ratings and self-accessibility was weaker in the Taiwanese sample. In fact, follow-up tests probing the interaction in each sample separately indicated that the interaction of absolute-self ratings and self-accessibility was statistically significant in the U.S. sample ($p < .001$), but not in the Taiwanese sample ($p > .50$). One possible explanation could be power: our Taiwanese sample ($n = 126$) was quite a bit smaller than our U.S. sample ($n = 348$). Thus, to boost our Taiwanese sample, we included participants from Study 1b—for whom we had reaction times because their data were collected on a computer.8 This test, despite still being somewhat underpowered ($n = 241$) relative to the U.S. sample, demonstrated a significant interaction between absolute-self ratings and self-accessibility on comparative ratings that mirrored the one found in the American sample ($b = -0.07, t = -4.71, p < .001$, see Figure 6)—that is, self-weighting in comparative ratings increased as a function of the accessibility of self-information.

Second, there was a main effect of culture on comparative ratings: U.S. participants provided higher comparative ratings than participants in Taiwan, meaning Americans generally reported engaging in these behaviors more than the Taiwanese ($b = -0.0007, t = -2.66, p < .01$). There was, however, no effect of self-construal on comparative ratings ($p > .61$). Finally, the Taiwanese sample reported only marginally higher ratings of interdependent self-construal than the U.S. participants in Taiwan, meaning Americans generally reported engaging in these behaviors more than the Taiwanese ($b = -0.0007, t = -2.66, p < .01$). There was, however, no effect of self-construal on comparative ratings ($p > .61$). Finally, the Taiwanese sample reported only marginally higher ratings of interdependent self-construal than the U.S.
sample—United States: $M = 5.39$, $SD = 0.90$; Taiwan: $M = 5.55$, $SD = 0.86$; $t(472) = 1.73$, $p = .078$, Cohen’s $d = .18$—a result that stands in contrast to Study 1, where the Taiwanese sample reported significantly lower ratings on independent self-construal than the U.S. sample.

**Discussion**

In addition to replicating the basic finding in previous work and in Study 1 that absolute-self ratings are over-weighted in comparative judgments, we also found support for our first two hypotheses. Consistent with Hypothesis 1, absolute-self ratings were made more quickly than absolute-other ratings, which suggests that, not surprisingly, information about the self is more accessible than information about the average other (Kuiper & Rogers, 1979). This finding provides support for why absolute ratings of the self—and not absolute ratings of the average other—serve as the anchor in comparative judgments. Interestingly, in the United States (relative to Taiwan), the difference between reaction times for absolute-self ratings and absolute-other ratings was greater. This finding appears to be driven predominantly by differences in reaction times for absolute-self ratings, as reaction times for absolute-other ratings were quite similar across the two cultures. Second, consistent with Hypothesis 2, we found that absolute-self ratings interact with self-accessibility to predict comparative ratings. This finding suggests that over-weighting the self in self–other comparisons is moderated by accessibility.

Hypothesis 3 predicted that egocentrism, unlike egocentrism in previous studies, would be found in both cultures—and at similar levels. Surprisingly, we found that Taiwanese participants showed more egocentrism in their comparative ratings than U.S. participants. However, we did find significant egocentrism (in the form of over-weighting the self) in both cultures, so the difference was one of degree.

**Study 3—The Role of Accessibility in Comparative Judgments for a Specific Other Person**

In the first two studies, comparisons were made between the self and “the average” other—an abstract comparison standard that may be drawn to mind in a different manner than “concrete” individuals, such as the self or a specific other person. Study 3 tested whether over-weighting the self would still be moderated by accessibility when self–other comparisons were made with a specific peer. In addition, we addressed three limitations in the first two studies. First, both earlier studies used the same eight behaviors. To ensure our findings were not due to unique characteristics of these behaviors, in Study 3, we used all 40 behaviors found in Krugger et al. (2008). Second, the sample sizes in Study 2 were unequal and to show the interaction between self ratings and the accessibility of those ratings on comparative ratings in Taiwan, we had to import data from Study 1. Study 3 uses sample sizes that are more equal across cultures, with both large enough to detect effects the size of those found in Study 2. Third, we measured interdependence in both samples using the full set of items from a previously validated scale.

**Method**

The method used in Study 3 was almost identical to Study 2; minor changes are noted below.

**Participants**

**The United States.** Seventy-eight participants (54 females, 24 males; $M_{age} = 19.34$, $SD = 2.00$, range = 18-30 years) were recruited from the University of Oregon (ethnic composition was similar to Studies 1 and 2). Students received credit toward the completion of a course requirement.

**Taiwan.** One hundred one participants (57 females, 44 males; $M_{age} = 20.30$, $SD = 1.79$, range = 18-26) were recruited from National Chengchi University; all participants were Asian. Students were given the option of either receiving class credit or monetary compensation (approximately $2 in the United States).

**Materials**

**Interdependent self-construal scale.** Participants in both samples completed all items of Cross, Bacon, and Morris’s (2000) measure of relational interdependent self-construal (RISC; $a_{US} = .80$; $a_{Taiwan} = .70$).

**Self, other, and comparative frequency ratings.** Participants provided absolute-self, absolute-other, and self-comparative frequency ratings for the full set of 40 behaviors used in Kruger et al. (2008). We used the same scales and anchors as in Study 2. However, in contrast to the previous two studies, the “other” person in Study 3 was a high school acquaintance (chosen by participants at the beginning of the study).

**Procedure.** We completely counterbalanced the order in which participants made absolute-self, absolute-other, and self-comparative frequency ratings. All other aspects of the procedure remained the same as in Study 2.

**Results**

Reaction time data were again positively skewed, and corrected as in Study 2. MLM was again employed to examine the relationships between absolute-self, absolute-other, and comparative ratings, as well as the relationships between the accessibility of each type of rating. All within-subject predictors were group mean-centered, while all between-subject predictors were grand mean-centered. Random effects were included for first-order relationships and the intercept.
As expected, the egocentrism found in Studies 1 and 2 replicated: Absolute-self ratings predicted comparative ratings to a larger degree than did absolute-other ratings (and the interaction effect was also replicated; see Table 3). Also replicating Study 2, we provided support for Hypothesis 1: Absolute-self ratings were made more quickly than absolute-other ratings. More specifically, we used a mixed-model ANOVA with culture entered as the between-subjects factor and type of accessibility (self vs. other) entered as the within factor, along with the two-way interaction (Culture × Self/Other accessibility). Once again, a main effect of type of accessibility (self vs. other) was observed, such that absolute-self ratings were significantly faster than absolute-other ratings, F(1, 177) = 17.01, p < .001, η² = .088. Absolute-self ratings (M = 1,479.56, CV = ±44.22%) took .84 times as long (95% CI = [.77, .91]) as absolute-other ratings (M = 1,759.17, CV = ±39.04%).

Replicating Study 2, a main effect of culture was observed such that ratings made in the United States were significantly faster than ratings made in Taiwan, F(1, 177) = 6.78, p = .01, η² = .037. Collapsing across ratings, participants in the United States (M = 1,515.20, CV = ±44%) took .89 times as long to respond (95% CI = [.77, .91]) as participants in Taiwan (M = 1,693.50, CV = ±39.13%). Means and coefficients of variation (CV) can be found in Table 4.

To test Hypothesis 2 (that increased accessibility of self ratings should result in a stronger relationship between absolute-self ratings and comparative ratings, that is, more self over-weighting), we calculated a regression equation in which comparative ratings were used as the outcome variable. Absolute-self and absolute-other ratings and the accessibility of the absolute-self and other ratings were entered as Level 1 predictors, along with the three 2-way interaction terms (Absolute-Self × Absolute-Other Ratings; Absolute-Self Ratings × Self-Accessibility; Absolute-Other Ratings × Other-Accessibility). Culture and RISC scores (along with their interaction terms with the Level 1 variables) were entered as covariates at Level 2.

Hypothesis 2 was supported, with a significant interaction between absolute-self ratings and self-accessibility on comparative ratings (b = −0.16, t = −5.53, p < .001). As seen in Figure 7, the relationship between absolute-self ratings and comparative ratings was stronger when self-accessibility was higher. (Notably, our results did not show a significant interaction effect of absolute-other ratings and other-accessibility on comparative ratings, p > .95. 10)

Table 3. Relationships Between Absolute-Self Ratings and Absolute-Other Ratings on Comparative Ratings in Study 3.

<table>
<thead>
<tr>
<th>Rating</th>
<th>b</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>1.43</td>
<td>42.08</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Other</td>
<td>−0.50</td>
<td>−9.62</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Self × Other</td>
<td>−0.02</td>
<td>−2.32</td>
<td>.02</td>
</tr>
</tbody>
</table>

Table 4. Geometric Means and Coefficients of Variation (CV) of Accessibility (Reaction Times) for Absolute-Self, Absolute-Other, and Comparative Ratings in Study 3.

<table>
<thead>
<tr>
<th>Culture</th>
<th>United States</th>
<th>Taiwan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order</td>
<td>M CV (%)</td>
<td>M CV (%)</td>
</tr>
<tr>
<td>Self</td>
<td>1.387.70</td>
<td>46.10</td>
</tr>
<tr>
<td>Other</td>
<td>1.654.41</td>
<td>41.93</td>
</tr>
<tr>
<td>Comparative</td>
<td>2,122.39</td>
<td>43.45</td>
</tr>
</tbody>
</table>

Note. Geometric means were calculated by back-transforming the mean of the log-transformed reaction times. Coefficients of variation (CV) were calculated using the formula for log-normal transformations reported in Koopmans, Owen, and Rosenblatt (1964). This formula can be expressed by: (e^σ² - 1)½.

Culture moderated a number of the relationships reported above. As in Study 2, culture moderated the relationship between absolute-self ratings and comparative ratings (b = −0.26, t = −7.01, p < .001), such that the relationship between absolute-self ratings and comparative ratings was stronger in Taiwan than in the United States: Participants in Taiwan weighted the self more heavily in comparative judgments than participants in the United States. Importantly, once again, when looking at the two samples separately, we still found a significant relationship between absolute-self ratings and comparative ratings in the United States (p < .001); the effect was just greater in Taiwan.

Unlike Study 2, we also found a two-way interaction between culture and absolute-other ratings on comparative ratings (b = 0.76, t = 19.43, p < .001), such that the relationship between absolute-other ratings and comparative ratings was stronger in Taiwan than in the United States. Although this effect was stronger in Taiwan, when looking at the two samples separately, we still found a significant relationship between absolute-other ratings and comparative ratings in the United States, p < .02. Thus, in Study 3, Taiwanese participants’ comparative judgments were more closely predicted by both kinds of absolute ratings.

Two other effects replicated Study 2: First, culture again moderated the interaction effect of absolute-self ratings and self-accessibility on comparative ratings (b = −0.16, t = −5.53, p < .001), with a bigger interaction in the United States than Taiwan. This finding suggests that the relationship between self-accessibility and egocentrism is stronger in the United States than in Taiwan. Unlike Study 2, however, the interaction effect of absolute-self ratings and self-accessibility on comparative ratings was significant for the Taiwanese participants (p < .015), as well as American participants, when the two samples were examined separately. Also replicating Study 2, participants in the United States provided higher comparative ratings than participants in Taiwan (b = 0.49, t = 10.11, p < .001).

The Taiwanese sample reported descriptively (but not significantly) higher RISC scores than the U.S. sample (United States provided higher comparative ratings than participants in Taiwan (b = 0.49, t = 10.11, p < .001).
States: \(M = 5.38, SD = 0.73\); Taiwan: \(M = 5.45, SD = 0.62\); Cohen’s \(d = .10\); see also Note 3). In addition, RISC scores moderated some of our effects in unexpected ways in Study 3. Participants who scored higher on the RISC provided higher comparative ratings (\(b = 0.32, t = 7.16, p < .001\)), which contrasts with both the finding in Study 1 that Americans who scored higher on independence provided higher comparative ratings and the absence in Study 2 of any self-construal effect on comparative ratings. In addition, RISC scores interacted with both absolute-self ratings (\(b = 0.10, t = 3.04, p = .002\)) and absolute-other ratings (\(b = 0.14, t = 3.72, p < .001\)) in Study 3 to produce comparative ratings that were more egocentric. That is, higher RISC scores resulted in weighting absolute-self ratings more heavily and absolute-other ratings less heavily. Interpreting these findings is difficult because they were not predicted or found in the first two studies, different self-construal items were used in all three studies, and the behaviors in Studies 1 and 2 differed from those in Study 3.

**Discussion**

In Study 3, we replicated patterns found in previous work and in Study 1 and Study 2: Absolute-self ratings are egocentrically over-weighted in comparative judgments. We also replicated support for Hypothesis 1, but this time with a specific other person: Absolute-self ratings were made more quickly than absolute-other ratings, suggesting that information about the self is more accessible than information about other people. Furthermore, we replicated support for Hypothesis 2: Absolute-self ratings interact with self-accessibility to predict comparative judgments, suggesting that over-weighting the self in self–other comparisons is moderated by accessibility. Support for Hypothesis 2 was statistically significant in both cultures.

The unexpected finding from Study 2—that culture moderates this over-weighting—was replicated in Study 3: Participants in Taiwan showed more egocentrism in their comparative judgments than participants in the United States. In Study 3 only, we also found that participants in Taiwan weighted their absolute-other ratings more heavily in comparative judgments than participants in the United States. One possible explanation for this difference is that in Study 3 participants were comparing themselves to a specific other person instead of an average other person. This finding deserves future examination. Also replicating Study 2, while Taiwanese participants generally weighted self-ratings more than U.S. participants when making comparative judgments, accessibility of self-ratings had more of a moderating effect on how much self-ratings were weighted in comparative judgments for U.S. participants.

**General Discussion**

In line with Kruger’s (1999) seminal finding, across all three studies, individuals weighted the self more heavily than the other when making self–other comparative judgments. Our three studies provide evidence of this form of egocentrism in an East Asian sample for the first time, to the best of our knowledge. In Study 2, we demonstrated that accessibility moderates the degree to which people over-weight information about the self when making comparative judgments. When absolute-self ratings were more accessible, they were also more predictive of self–other comparative judgments, another novel finding. In Study 3, we extended these findings to self–other comparisons involving a specific other person, and not just comparisons to an abstract average other.

Importantly, while we found that comparative judgments were egocentric in both cultures, we also found that this egocentrism was tempered by culture in two key ways: First, egocentrism was more pronounced overall in our Taiwanese samples, an interesting divergence from cultural differences found for ego-enhancement. More specifically, Study 1 found that absolute-self ratings predicted more of the variance in comparative ratings for Taiwanese participants (84.77%) than for U.S. participants (69.96%). In Studies 2 and 3, culture moderated absolute-self ratings, such that Taiwanese participants (\(b_{Study\ 2} = 1.94, b_{Study\ 3} = 1.52\)) provided more egocentric comparative ratings than U.S. participants (\(b_{Study\ 2} = 1.54, b_{Study\ 3} = 1.31\)).

Second, in contrast, in the two studies where we measured reaction time (Studies 2 and 3), we also found that accessibility of self-judgments moderates the egocentrism of comparative judgments for U.S. participants more than it does for Taiwanese participants. There were two other effects of culture that we did not predict (and that we suspect other researchers would not have predicted): U.S. participants were both faster in making their ratings and reported a general tendency to do the behaviors more frequently than Taiwanese participants. All of these effects involving culture replicated from Study 2 to Study 3, suggesting they may be reliable and merit future study.
We measured—rather than manipulated—accessibility via reaction time, and as such, we are limited in the inferences that we can make. Thus, another future research direction would be to manipulate accessibility by priming concepts related to either the self or the other (see Chan et al., 2013, for a study examining a salience manipulation). We would predict that priming self-information would increase the egocentrism of self–other comparisons; whether or not priming information about others could make that information accessible enough to compete with self-information to reduce egocentrism is an open question.

Interestingly, we did not find a significant difference between the United States and Taiwan in terms of self-construal in Study 3 (and we only found a marginal effect in Study 2). This stands in contrast to a number of past findings that Taiwanese university students tend to score higher on collectivism than American university students (Krull et al., 1999; Oyserman, Coon, & Kemmelmeier, 2002). One possible reason why we did not find a significant difference may be that the Cross et al. (2000) RISC was designed to measure the degree to which people define themselves in terms of their close relationships (i.e., RISC). Scales of RISC have been distinguished from other scales of interdependent self-construal which measure the degree to which people define themselves in terms of their roles or group memberships (i.e., collective self-construal; Brewer & Chen, 2007). As such, scales that measure relational interdependence may not be as reliable at predicting cross-cultural differences between Taiwan and the United States as scales that measure collective interdependent self-construal (see Bresnahan, Chiu, & Levine, 2004; Fernández, Paez, & González, 2005). Despite the lack of difference in scores on RISC items, our independent self-construal results from Study 1, along with past research (Hofstede, 2001; Hofstede et al., 2010; Nisbett, 2003; Oyserman et al., 2002; Triandis, 1996, as cited in Oishi, 2000), suggest that Taiwan and the United States are prototypical representatives of interdependent and independent cultures, respectively.

In conclusion, our three studies began by replicating some key findings that have been robustly demonstrated before. We fully expected that self ratings would be made faster than other ratings, and that absolute ratings of self would be overweighted in self–other comparative judgments—and they were. However, our studies also contribute novel findings. Although our North American participants leaned more toward the independence pole of an independence–interdependence scale than our Asian participants did (as would be expected from past cross-cultural studies), we found that participants in both cultures demonstrated a pattern of egocentrism in terms of over-weighting the self in non-evaluative comparative judgments, and if anything, participants in Taiwan made comparative judgments that were more egocentric than participants in the United States. This pattern stands in contrast to past studies that have found that North Americans show greater ego-enhancement than Asians in self–other comparisons—and show greater egocentrism when engaging in spatial or visual perspective taking. In addition, we found that the extent to which absolute-self ratings are over-weighted in comparative judgments is moderated by how accessible absolute-self ratings are in both cultures. More accessible self-ratings appear to provide firmer self-anchors for comparative judgments. Thus, although East–West cultural differences may moderate ego-enhancement, the role that egocentrism plays in the outcome of self–other comparisons shows a great deal of universality.

Appendix

Self-construal items in Studies 1a and 1b:

1. I am independent.
2. I am autonomous.
3. I am resolute.
4. I am determined.
5. I am active.
6. In general, my close relationships have very little to do with how I feel about myself.
7. I have my own opinions about things, independent from the opinions of those who are close to me.
8. My close relationships are unimportant to my sense of what kind of person I am.

Acknowledgment

The authors thank Jennifer Pfeifer for comments on an earlier version of this article.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: The authors express gratitude to the National Science Council of Taiwan and National Chengchi University for funding that enabled this research collaboration. The third author was supported by a visiting professorship at National Chengchi University funded by the National Science Council of Taiwan under Grant NSC 99-2912-I-004-001, as well as by the National Chengchi University.

Notes

1. Participants provided their birth year; invalid responses were excluded.
2. The eight mundane behaviors were: using a computer, taking a bath, buying a new computer, waiting in line, moving to a new residence, searching for information, checking one’s bank account balance, and paying attention to other people’s outfits. The original behavior “taking a bubble bath” was deemed irrelevant to the average Taiwanese student and thus was slightly altered to “taking a bath.”
3. In the United States, participants completed the Cross, Bacon, and Morris (2000) interdependent self-construal scale. However, past use of this scale in Taiwan by the second author (Lee, 2013) has suggested that not all 11 items tap a single construct, and so only Items 2, 4, 5, 6, and 9 from this scale were given to Taiwanese participants (in addition, Taiwanese participants completed 2 other items—not part of the Cross et al. scale—not administered in the United States). We used just the 5 items from the Cross et al. scale that were completed by all participants ($\alpha_{US} = .73$; $\alpha_{Taiwan} = .60$) so that the measure would be the same in both samples. In Study 3, we computed the correlation between this subset of items and the other 6 items from the scale ($r_{US} = .60$, $r_{Taiwan} = .58$) and the correlation between this subset of items and the full scale ($r_{US} = .875$, $r_{Taiwan} = .877$) for each sample separately. These fairly strong correlations suggest that the subset of items that was used in Study 2 was tapping into the same construct as the full scale in both cultures. Because scaling differed slightly across the two samples for the interdependent self-construal scales, we compared independent self-construal by recoding the scale from Taiwan to match the scale from the United States ($-3$ to $1$, $-2$ to $2$, $-1$ to $3$, $1$ to $5$, $2$ to $6$, $3$ to $7$).

4. In the United States, Study 2 also explored whether priming participants with independent self-construal would increase their tendency to provide egocentric comparative ratings, relative to individuals primed with interdependent self-construal. Priming had no effect on self-construal and thus, in all further analyses, we collapsed across priming conditions.

5. Geometric means calculated by back-transforming the mean of the log-transformed reaction times are reported.

6. Coefficients of variation were calculated using the formula for log-normal transformations reported in Koopmans, Owen, and Rosenblatt (1964). This formula can be expressed by $(e^{\sigma^2} - 1)^{1/2}$.

7. Given the unequal sample sizes for participants collected from the United States and Taiwan, a weighted contrast code was used to represent the difference between the two cultures.

8. Outliers and skewness in Study 1b reaction times were corrected using similar methods to those used in Study 2.

9. Four behaviors were slightly altered so as to work in both cultures.

10. While the relationship between absolute-other ratings and other-accessibility was non-significant ($p > .95$), there was an interaction between absolute-other ratings, other-accessibility, and culture on comparative ratings. In the United States, the quicker absolute-other ratings were made, the less those ratings were incorporated into the comparative rating. In Taiwan, the relationship was reversed. However, this relationship did not reach statistical significance in Taiwan, nor were either of these relationships observed in Study 2. As such, this interaction should be interpreted with caution.

**Supplemental Material**
The online supplemental material is available at http://pspb.sagepub.com/supplemental.

**References**


