

# Cultural Similarities in Self-Esteem Functioning

## East Is East and West Is West, But Sometimes the Twain Do Meet

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East Asians report lower levels of self-esteem than North Americans and Western Europeans. These differences could mean that self-esteem is a culturally bounded construct, experienced differently in different cultures, or they could mean that self-esteem is a universally relevant construct whose average level is raised or lowered in different cultures. To examine these possibilities, the authors assessed self-esteem functioning in China and America. Study 1 found that, across cultures, self-serving attributions are stronger when self-esteem is high than when it is low. Study 2 replicated this finding and also found that, across cultures, failure produces less emotional distress when self-esteem is high than when it is low. Because self-esteem functioned similarly in China as in America, the authors conclude it is of general psychological importance.

**Keywords:** *self-esteem; culture; self-enhancement biases*

Cultural differences in self-esteem and self-enhancement have been the subject of a great deal of research and a good deal of controversy (Brown, 2003; Heine, 2003, 2004, 2005; Heine & Hamamura, 2007; Heine, Lehman, Markus, & Kitayama, 1999; Kobayashi & Brown, 2003; Sedikides, Gaertner, & Toguchi, 2003; Sedikides, Gaertner, & Vevea, 2005). Some of the evidence supports the presence of important cultural differences. For example, in comparison with Westerners (e.g., Americans, Canadians, and Western Europeans), East Asians (a) score lower on self-report measures of self-esteem (Schmitt & Allik, 2005), (b) are less boastful about their talents and competencies (Cai, Brown, Deng, & Oakes, 2007; Heine, Kitayama, & Hamamura, 2007; Sedikides et al., 2003; Tafarodi & Swann, 1996), and (c) are less prone to exhibit some self-enhancing biases, such as unrealistic optimism

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(Heine et al., 1999). These differences attest to the important role culture plays in shaping the experience and expression of self-esteem.

Not all of the evidence supports the existence of cultural differences, however. Schmitt and Allik (2005) administered the Rosenberg (1965) Self-Esteem Scale in 28 languages to more than 16,000 participants in 53 nations. Despite the vast differences between the various cultures studied, the scale showed remarkably similar psychometric properties (e.g., factor structure, internal reliability) across nations. In addition, once gender was statistically controlled, self-esteem was positively related to extraversion and negatively related to neuroticism in every one of the 53 nations, with 97% of the correlations reaching statistical significance. These commonalities suggest a universal equivalence in the experience and expression of self-esteem (see also Cai et al., 2007; Kobayashi & Brown, 2003; Kurman, 2003; Singelis, Bond, Sharkey, & Siu Yui Lai, 1999).

### Cultural Differences in Self-Esteem Functioning

Self-esteem functioning provides another way to assess the universality of self-esteem. As used here, the term *self-esteem functioning* refers to the manner in which self-esteem shapes people's responses to environmental events, such as threats to self-worth or stressful life events. A wealth of studies in Western cultures has shown that low self-esteem people respond less adaptively to events of this nature than do high self-esteem people (for reviews, see Baumeister, Campbell, Krueger, & Vohs, 2003; Brown, 1998; Brown & Marshall, 2006; Marshall & Brown, 2007; Taylor & Brown, 1988). For example, in comparison with high self-esteem people, negative feedback is more apt to make low self-esteem people (a) engage in maladaptive persistence (McFarlin, Baumeister, & Blascovich, 1984), (b) avoid social comparison (Wood, Giordano-Beech, Taylor, Michela, & Gaus, 1994), (c) feel bad about themselves (Bernichon, Cook, & Brown, 2003; Brown & Dutton, 1995; Brown & Marshall, 2001; Dutton & Brown, 1997), and (d) refrain from taking efforts to alleviate their emotional distress (Heimpel, Wood, Marshall, & Brown, 2002). If self-esteem functions similarly in different cultures, these effects, which have been observed primarily in Western countries, ought to also occur in other countries, such as the countries of East Asia (Norenzayan & Heine, 2005).

Although a good deal of previous research has assessed the correlates of self-esteem across cultures (for reviews, see Heine et al., 1999; Schmitt & Allik, 2005), to our knowledge, no study has yet tested whether self-esteem functions similarly across cultures. There are several reasons to examine this issue. First, some theorists have suggested that high self-esteem is pursued more vigorously in Western cultures than in Eastern ones (e.g., Heine et al., 1999; Markus & Kitayama, 1991). To the extent that this is so, we should find that achieving (or not achieving) high self-esteem matters more in Western cultures than in Eastern ones.

An examination of self-esteem functioning can also clarify the meaning of cultural differences in self-esteem levels. Although East Asians consistently report lower levels of self-esteem than do Westerners, it is not entirely clear what these mean differences mean (Cai et al., 2007). If their lower scores represent lower levels of self-regard, East Asians with high self-esteem should function like Westerners with medium or low self-esteem. Alternatively, if their lower scores arise from cultural norms of modesty or other pressures

that suppress self-esteem reports, we should find that East Asians with high self-esteem react just like Westerners with high self-esteem and that East Asians with low self-esteem react just like Westerners with low self-esteem. Moreover, this functional equivalence should occur even in the presence of average differences in the amount of self-esteem that is reported.

## Study 1

Before one can examine these issues, one must first identify effects that are reliably influenced by self-esteem. Although several research areas are suitable for this purpose, our first study investigated the self-serving bias in causal attributions in America and China. The self-serving bias (i.e., the tendency for people to take more credit for positive than negative outcomes) is one of the most reliable findings in all of psychology in the past 35 years (Mezulis, Abramson, Hyde, & Hankin, 2004). Moreover, in Western countries, this tendency has been shown to be stronger among high self-esteem people than among low self-esteem people (Blaine & Crocker, 1993; Dutton & Brown, 1997), making it particularly well suited for our purposes.

To test our hypotheses, we first led American and Chinese participants to succeed or fail at an experimental task. We then asked them to indicate to what extent they believed the test accurately measured their ability. To the extent that self-esteem functions similarly across cultures, we should find three effects: (a) a main effect of feedback, with participants showing a self-serving tendency to believe the test more accurately measures their ability when they succeed than when they fail; (b) a Self-Esteem  $\times$  Feedback interaction, showing that the self-serving attributional bias is stronger when self-esteem is high than when self-esteem is low; and (c) a nonsignificant Self-Esteem  $\times$  Feedback  $\times$  Culture interaction, showing that the predicted two-way Self-Esteem  $\times$  Feedback interaction is just as apparent in China as in America.

## Method

*Participants.* The American sample consisted of 91 undergraduates attending the University of Washington (38 males). All had identified themselves as being of European descent. The Chinese sample consisted of 109 undergraduates enrolled in introductory psychology courses at East China Normal University (22 males). The American students participated in exchange for course credit, whereas Chinese students were paid 10 Chinese Yuans for their participation. All participants were tested individually with questionnaires administered via computer, and every attempt was made to keep the experimental sessions in America and China as similar as possible. The American students were tested in English, and the Chinese participants were tested in Chinese (Mandarin). The Chinese translations were performed by the second author and another individual fluent in Chinese and English, with back translations conducted to ensure comparability.

*Measures and procedures.* Participants completed the Rosenberg Self-Esteem Scale (Rosenberg, 1965) at the start of the experimental session. This scale is a well-validated and widely used measure of global self-esteem, showing considerable evidence of cross-cultural

consistency (Schmitt & Allik, 2005). In the present research, participants answered each of the 10 items using a 4-point Likert-type scale (0 = *strongly disagree*, 3 = *strongly agree*). After reversing the scoring for five negatively worded items, a total self-esteem score was found by summing the 10 responses. The reliabilities were comparable across samples ( $\alpha = .89$  and  $\alpha = .77$  for Americans and Chinese, respectively).

The experimental task was then introduced. Following procedures developed by Pyszczynski, Greenberg, and LaPrelle (1985) and used by Brown, Farnham, and Cook (2002), participants were told they would be taking a test of their social sensitivity. Social sensitivity was described as an interpersonal skill that involved the ability to adopt the perspective of other people. For each of 10 trials, participants were shown a target word and four alternatives (“AFRAID: fear, scared, darkness, brave”) and were asked to select the alternative they thought most other people associate with the target word.

When participants were through taking the social sensitivity test, the computer paused for several seconds and delivered false feedback regarding their performance. In the success condition, participants learned they had scored in the upper 87% of all students at their university; in the failure condition, participants learned they had scored in the bottom 23% of all students at their university.

At this point, all participants completed a posttask questionnaire. The first item, which served as a manipulation check, asked participants to evaluate their performance (1 = *extremely poor*, 9 = *extremely good*). Next, participants were asked two questions regarding the causes of their performance: (a) “How accurately do you think this test measured your social sensitivity?” and (b) “To what extent do you think your performance on this test was due to your social sensitivity?” Both items were answered on 9-point scales (1 = *not at all*, 9 = *extremely*). The two questions were highly correlated in both countries (America:  $r = .68$ ,  $p < .001$ ; China:  $r = .85$ ,  $p < .001$ ) and were combined to form an attribution index.

When they had finished completing these items, participants informed the experimenter that they were finished with the experiment. They were then debriefed, thanked, and excused.

## Results and Discussion

*Self-esteem.* Replicating prior research, a 2 (Culture)  $\times$  2 (Gender) analysis of variance (ANOVA) on Rosenberg self-esteem scores showed that our Chinese participants reported lower levels of self-esteem ( $M = 20.85$ ,  $SD = 3.69$ ) than our European/American participants ( $M = 22.74$ ,  $SD = 4.03$ ),  $F(1, 196) = 8.69$ ,  $p < .005$ ,  $\eta_p^2 = .04$ . Consistent with prior research (Schmitt & Allik, 2005), both mean values were well above the scale midpoint of 15,  $t(108) = 16.58$ ,  $p < .001$ ,  $\eta_p^2 = .72$ , and  $t(90) = 18.31$ ,  $p < .001$ ,  $\eta_p^2 = .79$ , for China and America, respectively. Finally, neither the main effect of gender nor the Culture  $\times$  Gender interaction approached significance (both  $F_s < 1$ ).<sup>1</sup>

*Performance evaluations.* Participants evaluated their performance immediately after receiving their percentile rankings. Following procedures recommended by West, Aiken, and Krull (1996), we used a multiple regression analysis to analyze these scores. Effect coding was used for the two categorical variables (culture: America =  $-1$ , China =  $1$ ; Task Performance: success =  $-1$ , failure =  $1$ ), and the continuous variable, self-esteem, was centered around its mean. Cross-product terms were formed by multiplying the predictors.

**Table 1**  
**Multiple Regression Analyses Predicting Posttask Performance**  
**Evaluations and Ability Attributions: Study 1**

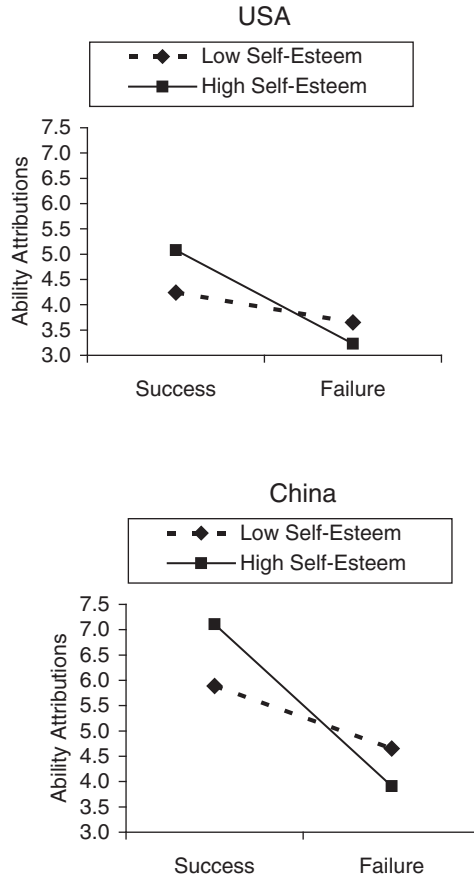
	<i>b</i>	<i>SE<sub>b</sub></i>	$\beta$	<i>t</i>	<i>p</i>	$\eta_p^2$
<b>Performance evaluations</b>						
(Constant)	5.708	0.112		51.065	0.000	0.931
Self-esteem	0.043	0.029	0.091	1.517	0.131	0.012
Task performance	-1.036	0.112	-0.551	-9.264	0.000	0.309
Culture	0.214	0.112	0.113	1.913	0.057	0.019
Self-Esteem $\times$ Task Performance	-0.030	0.029	-0.063	-1.058	0.291	0.006
Self-Esteem $\times$ Culture	0.021	0.029	0.043	0.744	0.458	0.003
Task Performance $\times$ Culture	-0.252	0.112	-0.134	-2.258	0.025	0.026
Self-Esteem $\times$ Task Performance $\times$ Culture	0.009	0.029	0.019	0.322	0.748	0.001
<b>Ability attributions</b>						
(Constant)	4.641	0.120		38.644	0.000	0.886
Self-esteem	0.026	0.031	0.052	0.844	0.400	0.004
Task performance	-0.835	0.120	-0.424	-6.950	0.000	0.201
Culture	0.666	0.120	0.337	5.542	0.000	0.138
Self-Esteem $\times$ Task Performance	-0.100	0.031	-0.200	-3.267	0.001	0.053
Self-Esteem $\times$ Culture	0.002	0.031	0.003	0.051	0.959	0.000
Task Performance $\times$ Culture	-0.250	0.120	-0.127	-2.079	0.039	0.022
Self-Esteem $\times$ Task Performance $\times$ Culture	-0.022	0.031	-0.045	-0.732	0.465	0.003

The top half of Table 1 shows that there was a highly significant main effect of task performance, indicating that participants who received success feedback evaluated their performance more favorably ( $M = 6.74$ ,  $SD = 1.69$ ) than did those who received failure feedback ( $M = 4.67$ ,  $SD = 1.70$ ). This effect establishes the effectiveness of the experimental manipulation. Unexpectedly, there also was a marginally significant main effect of culture and a significant Task Performance  $\times$  Culture interaction. The interaction reflects the fact that the simple effect of task feedback, though significant in both countries, was stronger in China,  $F(1, 192) = 73.23$ ,  $p < .001$ ,  $\eta_p^2 = .28$ , than in America,  $F(1, 192) = 22.44$ ,  $p < .001$ ,  $\eta_p^2 = .11$ .

*Ability attributions.* The bottom half of Table 1 shows the results when posttask attributions were used as a criterion variable. Replicating the well-established self-serving bias in causal attributions, the main effect of task performance indicates that participants believed ability was a more important cause of success ( $M = 5.58$ ,  $SD = 1.69$ ) than of failure ( $M = 3.81$ ,  $SD = 1.70$ ). The main effect of culture indicates that independent of whether they succeeded or failed, Chinese participants believed the test was more diagnostic of their ability ( $M = 5.31$ ,  $SD = 1.69$ ) than did American participants ( $M = 3.98$ ,  $SD = 1.70$ ).

In addition to these main effects, two interactions also reached significance. First, in accordance with predictions, a significant Self-Esteem  $\times$  Task Performance interaction was found. Figure 1 depicts the nature of the effect, showing predicted values for participants scoring 1 standard deviation above and below the mean on self-esteem in America and in China. Simple effects tests showed that, across countries, the self-serving bias was stronger among high self-esteem participants ( $\eta_p^2 = .22$ ) than among low self-esteem participants

**Figure 1**  
**Ability Attributions in America and China as a Function of**  
**Self-Esteem and Task Performance: Study 1**



( $\eta_p^2 = .03$ ). It is particularly noteworthy that this effect was not qualified by culture ( $F < 1$  for the three-way interaction), indicating that these effects were comparable in China and America. Subsequent analyses confirmed that the simple Self-Esteem  $\times$  Task Performance interaction was significant in China,  $F(1, 192) = 8.06, p = .005, \eta_p^2 = .04$ , and marginally significant in America,  $F(1, 192) = 3.19, p = .076, \eta_p^2 = .02$ .

Table 1 shows that the Task Performance  $\times$  Culture interaction also reached significance. Independent of self-esteem level, task performance had a stronger effect on ability attributions in China ( $\eta_p^2 = .19$ ) than in America ( $\eta_p^2 = .05$ ). This finding is of interest because previous research has found that the self-serving attributional bias is weaker in Japan than in Canada (Kitayama, Takagi, & Matsumoto, 1995). Our findings reveal the opposite pattern when China and America are compared, suggesting that the nature of cultural differences in ability attributions depends on the particular cultures under investigation.

*Summary.* Previous research in Western cultures has found that high self-esteem people exhibit a stronger self-serving attributional bias than do low self-esteem people (Blaine & Crocker, 1993; Brown, 1998; Dutton & Brown, 1997). In Study 1, we examined whether this tendency is just as true in China as in America. We found that it is. Participants made self-serving attributions in both countries, and in both countries, these self-serving judgments were stronger when self-esteem was high rather than low. Moreover, these differences occurred despite differences in the average level of self-esteem, suggesting that self-esteem functions similarly across cultures.

## Study 2

We conducted a second study to replicate and extend our initial results. First, rather than using an alleged test of social sensitivity, we used an alleged test of intellectual ability to assess the generality of our findings. Study 2 also included an additional dependent variable: momentary feelings of self-worth. Previous research in America has found that self-esteem moderates emotional reactions to negative outcomes, with low self-esteem people feeling worse about themselves after they fail than do high self-esteem people (Bernichon et al., 2003; Brown & Dutton, 1995; Brown & Marshall, 2001; Dutton & Brown, 1997). If self-esteem functions similarly across cultures, we ought to find that this effect occurs in China as well as in America.

## Method

*Participants.* The American sample consisted of 122 undergraduates attending the University of Washington.<sup>2</sup> All had identified themselves as being of European descent. The Chinese sample consisted of 132 undergraduates enrolled in introductory psychology courses at East China Normal University. As in Study 1, the American students participated in exchange for course credit, whereas Chinese students were paid 10 Chinese Yuans for their participation. Finally, all participants were tested individually in their native language, with all questionnaires administered via computer.

*Measures and procedures.* The measures and procedures used in Study 2 were similar to the ones used in Study 1, with the following exceptions.

First, instead of being told that they would be taking a test that measured their social sensitivity, participants were told they would be taking a test that measured an intellectual ability called “integrative orientation.” Integrative orientation was described as an ability to find creative and unusual solutions to problems. The ability was (allegedly) measured using the Remote Associates Test (RAT; Mednick, 1962). With this task, participants are shown three words (e.g., “car—swimming—cue”) and asked to find a fourth word that relates to the other three (“pool”). Working interactively with the computer, participants completed three sample problems to ensure that they understood how the problems were solved.

The experimental task was then administered. Using random assignment to conditions, half the participants received a set of easy problems (hereafter referred to as the success condition) and half received a set of difficult problems (hereafter referred to as the failure

condition). Difficulty level was determined on the basis of prior testing with an independent sample and on published norms (McFarlin & Blascovich, 1984).

When the allotted time for working on the test had expired, the computer paused for a moment and gave participants false feedback regarding their performance, using the same percentile information used in Study 1. After evaluating their task performance and judging the validity of the test using the same scales used in Study 1, participants rated their momentary feelings of self-worth using a measure developed by Brown and Dutton (1995). This measure asked participants to indicate the extent to which they were presently experiencing four emotions (proud, pleased with myself, humiliated, and ashamed) on 5-point scales (1 = *not at all*, 5 = *very much*). These emotions were selected for study because they directly bear on how people feel about themselves after they have succeeded or failed and have been found to be influenced by global self-esteem (Brown & Dutton, 1995; Brown & Marshall, 2001; Dutton & Brown, 1997). After reversing the scoring for the negative emotions, we averaged the four items to derive a single emotion scale. The reliabilities of the scale were comparable in America ( $\alpha = .75$ ) and in China ( $\alpha = .72$ ).

When they had finished completing these items, participants informed the experimenter that they were finished with the experiment. The participants were then debriefed, thanked, and excused.

## Results and Discussion

*Self-esteem.* As in Study 1, participants completed the Rosenberg Self-Esteem Scale (Rosenberg, 1965) at the start of the experimental session. The reliabilities were comparable across samples ( $\alpha = .89$  and  $\alpha = .85$  for Americans and Chinese, respectively), and once again, Chinese participants reported lower levels of self-esteem ( $M = 19.77$ ,  $SD = 4.29$ ) than did American participants ( $M = 21.99$ ,  $SD = 4.95$ ),  $F(1, 252) = 14.74$ ,  $p < .001$ ,  $\eta_p^2 = .06$ . Each of these mean values was well above the scale midpoint of 15, indicating that participants in both countries reported high levels of self-esteem,  $t(131) = 12.76$ ,  $p < .001$ ,  $\eta_p^2 = .55$ , and  $t(121) = 15.60$ ,  $p < .001$ ,  $\eta_p^2 = .69$ , for China and America, respectively.

*Performance evaluations.* Participants evaluated their performance immediately after receiving their percentile rankings. These scores were analyzed with a multiple regression analysis, using the same coding scheme used in Study 1. The top portion of Table 2 shows the results. As expected, a main effect of task performance indicated that participants who received success feedback evaluated their performance more favorably ( $M = 6.56$ ,  $SD = 1.67$ ) than did those who received failure feedback ( $M = 3.63$ ,  $SD = 1.71$ ). The main effect of culture was also significant: Across feedback conditions, Chinese participants evaluated their performance more favorably ( $M = 5.33$ ,  $SD = 1.60$ ) than did American participants ( $M = 4.86$ ,  $SD = 1.67$ ). Unlike in Study 1, however, the Task Performance  $\times$  Culture interaction was not significant, indicating that task performance had comparable effects in America and China.

Table 2 also shows a significant main effect of self-esteem and a significant Self-Esteem  $\times$  Task Performance interaction. The interaction reflects the fact that self-esteem did not predict performance evaluations following success,  $F < 1$ , but did predict performance



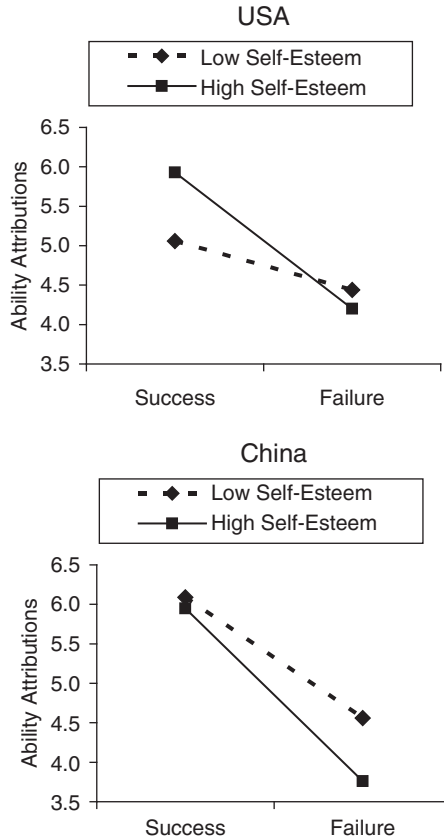
**Table 2**  
**Multiple Regression Analyses Predicting Posttask Performance Evaluations, Ability**  
**Attributions, and Momentary Feelings of Self-Worth: Study 2**

	<i>b</i>	<i>SE<sub>b</sub></i>	$\beta$	<i>t</i>	<i>p</i>	$\eta_p^2$
Performance evaluations						
(Constant)	5.160	0.104		49.479	0.000	0.909
Self-esteem	0.063	0.022	0.135	2.832	0.005	0.032
Task performance	-1.465	0.104	-0.660	-14.043	0.000	0.445
Culture	0.230	0.104	0.104	2.208	0.028	0.019
Self-Esteem $\times$ Task Performance	0.059	0.022	0.126	2.656	0.008	0.028
Self-Esteem $\times$ Culture	-0.006	0.022	-0.012	-0.254	0.800	0.000
Task Performance $\times$ Culture	0.061	0.104	0.028	0.588	0.557	0.001
Self-Esteem $\times$ Task Performance $\times$ Culture	0.013	0.022	0.029	0.604	0.546	0.001
Ability attributions						
(Constant)	4.998	0.100		5.109	0.000	0.911
Self-esteem	-0.008	0.021	-0.021	-0.359	0.720	0.001
Task performance	-0.758	0.100	-0.437	-7.598	0.000	0.190
Culture	0.092	0.100	0.053	0.919	0.359	0.003
Self-Esteem $\times$ Task Performance	-0.047	0.021	-0.127	-2.186	0.030	0.019
Self-Esteem $\times$ Culture	-0.041	0.021	-0.110	-1.940	0.053	0.015
Task Performance $\times$ Culture	-0.171	0.100	-0.098	-1.709	0.089	0.012
Self-Esteem $\times$ Task Performance $\times$ Culture	0.012	0.021	0.032	0.559	0.576	0.001
Momentary feelings of self-worth						
(Constant)	3.688	0.038		98.180	0.000	0.975
Self-esteem	0.071	0.008	0.444	8.814	0.000	0.240
Task performance	-0.324	0.038	-0.430	-8.633	0.000	0.233
Culture	0.070	0.038	0.093	1.862	0.064	0.014
Self-Esteem $\times$ Task Performance	0.017	0.008	0.105	2.081	0.038	0.017
Self-Esteem $\times$ Culture	-0.018	0.008	-0.107	-2.194	0.029	0.019
Task Performance $\times$ Culture	-0.006	0.038	-0.008	-0.166	0.868	0.000
Self-Esteem $\times$ Task Performance $\times$ Culture	0.000	0.008	-0.001	-0.025	0.980	0.000

evaluations following failure, with high self-esteem linked to more positive evaluations of a poor performance,  $F(1, 246) = 15.78, p < .001, \eta_p^2 = .06$ . This finding is consistent with other evidence that self-esteem is more important when outcomes are negative than when outcomes are positive (Brown & Dutton, 1995). Moreover, the effect was not qualified by culture ( $p > .50$  for the three-way interaction), indicating that self-esteem functioned similarly in China as in America. Finally, additional analyses showed that the simple effect of feedback was highly significant across self-esteem levels, although it was stronger for participants scoring 1 standard deviation below the mean on the Rosenberg Self-Esteem Scale,  $F(1, 246) = 141.34, p < .001, \eta_p^2 = .37$ , than for those scoring 1 standard deviation above the mean on the Rosenberg Self-Esteem Scale,  $F(1, 246) = 63.41, p < .001, \eta_p^2 = .21$ .

*Ability attributions.* As in Study 1, the two items assessing ability attributions were highly correlated in both countries (America:  $r = .73, p < .001$ ; China:  $r = .71, p < .001$ ) and were averaged to create an ability attribution index. Table 2 shows that a multiple regression analysis of this index revealed two significant effects: a main effect of task performance and the

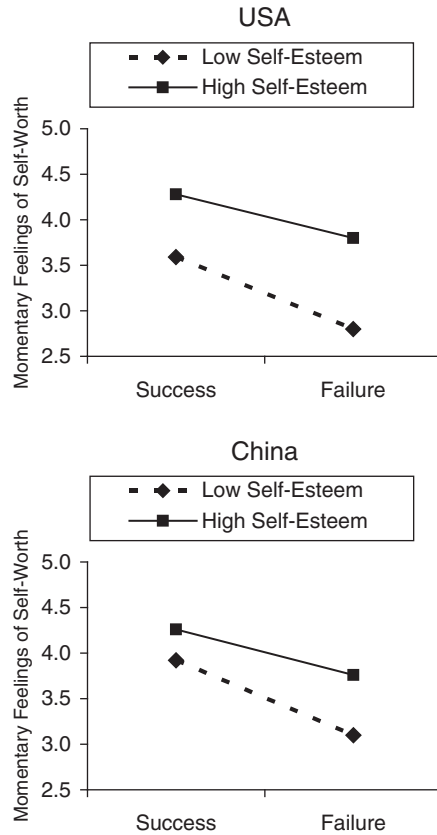
**Figure 2**  
**Ability Attributions in America and China as a Function of**  
**Self-Esteem and Task Performance: Study 2**



hypothesized Self-Esteem  $\times$  Task Performance interaction. Figure 2 displays the nature of the interaction, showing predicted values for participants scoring 1 standard deviation above and below the mean on self-esteem in America and in China. The significant Self-Esteem  $\times$  Task Performance interaction replicates the results of Study 1: Both self-esteem groups showed a robust self-serving bias, but this bias was more pronounced among high self-esteem participants ( $\eta_p^2 = .16$ ) than among low self-esteem participants ( $\eta_p^2 = .05$ ). Although the lack of a higher order, three-way interaction indicates that the strength of the Self-Esteem  $\times$  Task Performance interaction did not vary significantly across cultures, additional analyses showed that the simple Self-Esteem  $\times$  Task Performance interaction was significant in America,  $F(1, 246) = 4.30, p < .05, \eta_p^2 = .02$ , but not in China,  $F(1, 246) = 1.25, p > .15, \eta_p^2 = .01$ .<sup>3</sup>

*Momentary feelings of self-worth.* Research with American samples has found that low self-esteem people feel worse about themselves after they fail than do high self-esteem people (Bernichon et al., 2003; Brown & Dutton, 1995; Brown & Marshall, 2001; Dutton & Brown,

**Figure 3**  
**Momentary Feelings of Self-Worth in America and China as a**  
**Function of Self-Esteem and Task Performance: Study 2**



1997). To see whether this effect occurs in China as well, we repeated our multiple regression analyses using momentary feelings of self-worth as the criterion. The bottom portion of Table 2 shows significant main effects for self-esteem and task performance as well as two significant interactions. First, replicating prior research, there was a Self-Esteem  $\times$  Task Performance interaction. Figure 3 depicts the nature of the effect, showing predicted values for participants scoring 1 standard deviation above and below the mean on self-esteem in America and in China. Across cultures, task performance had a stronger effect on momentary feelings of self-worth among low self-esteem participants ( $\eta_p^2 = .19$ ) than among high self-esteem participants ( $\eta_p^2 = .08$ ). Looked at somewhat differently, self-esteem differences in momentary feelings of self-worth were stronger after failure ( $\eta_p^2 = .20$ ) than after success ( $\eta_p^2 = .09$ ). Once again the three-way interaction did not even approach significance ( $p > .95$ ), indicating that these findings did not vary across cultures. That being said, follow-up analyses showed that the simple Self-Esteem  $\times$  Task Performance interaction fell short of significance in America,  $F(1, 246) = 2.49, p = .11, \eta_p^2 = .01$ , and in China,  $F(1, 246) = 1.94, p = .17, \eta_p^2 = .01$ .

Finally, the data also revealed a significant Culture  $\times$  Self-Esteem interaction. Independent of test performance, self-esteem was a better predictor of momentary feelings of self-worth in America ( $\eta_p^2 = .22$ ) than in China ( $\eta_p^2 = .08$ ). Although this effect suggests a cultural difference in the correlates of self-esteem, it is difficult to interpret without a control condition. In that regard, it is worth noting that Cai et al. (2007) found no cultural differences in the link between self-esteem and momentary feelings of self-worth in the absence of any experimental manipulation of task performance. Hence, this effect, although worthy of future research, does not appear to be a general one.

*Supplemental analyses.* Earlier, we noted that, across countries, self-esteem and test performance interacted to predict performance evaluations, with high self-esteem predicting more positive performance evaluations following failure. This effect could explain why high self-esteem people are less emotionally distressed following failure than are low self-esteem people. After all, there is little reason to feel bad about oneself if failure is not viewed as a negative outcome.

To address this issue, we conducted another hierarchical regression analysis using culture, self-esteem, and performance evaluations (mean centered) to predict momentary feelings of self-worth. The Self-Esteem  $\times$  Performance Evaluation interaction was significant ( $b = -.012, p < .001, \eta_p^2 = .05$ ), and simple effects tests confirmed that self-esteem differences were larger among those who evaluated their performance negatively ( $\eta_p^2 = .22$ ) than among those who evaluated their performance positively ( $\eta_p^2 = .05$ ). Moreover, the three-way interaction including culture did not even approach significance ( $b = .00, p > .45$ ), and subsequent tests showed that the simple Self-Esteem  $\times$  Performance Evaluation interaction was significant in America ( $p < .01$ ) and in China ( $p < .05$ ). In sum, apart from whatever differences there were in performance assessments, low self-esteem participants felt worse about themselves when they failed than did high self-esteem participants, and this effect was just as apparent in China as in America.

## General Discussion

In recent years, researchers have devoted a great deal of attention to studying cultural differences in self-esteem. The attention this topic has received is commensurate with its presumed importance: Numerous theories of human motivation accord a central role to the pursuit of self-esteem, and its attainment is thought to bestow important benefits for psychological functioning and well-being (e.g., Deci & Ryan, 1995; Maslow, 1943; Rogers, 1951). Moreover, self-esteem's importance is presumed to be universal rather than culture specific.

To date, the evidence regarding the cross-cultural importance of self-esteem is mixed. On one hand, there is considerable evidence that East Asians report lower levels of global self-esteem than do Westerners (Bond & Cheung, 1983; Cai et al., 2007; Campbell et al., 1996; Schmitt & Allik, 2005; Scollon, Diener, Oishi, & Biswas-Diener, 2004), leading some investigators to speculate that self-esteem is less important in East Asian cultures than in Western ones (e.g., Diener & Diener, 1995; Heine et al., 1999). On the other hand, the correlates of self-esteem show a great deal of cross-cultural generality (Kobayashi & Brown, 2003; Schmitt & Allik, 2005), leading other investigators to argue that self-esteem

is experienced in a fundamentally similar way across cultures (e.g., Brown, 2003; Brown & Kobayashi, 2003; Cai et al., 2007; Kobayashi & Brown, 2003).

The present research sought to illuminate this issue by studying cultural differences in self-esteem functioning. We considered two contrasting hypotheses. If, on one hand, cultural differences in self-esteem reports arise from basic cultural differences in self-relevant motivations and processes, we ought to find that self-esteem functions differently in different cultures. If, on the other hand, cultural differences in self-esteem reports arise from factors that inflate or depress self-esteem in a fairly uniform fashion across cultures, we ought to find that self-esteem functions similarly in different cultures, despite whatever mean differences exist.

To test these hypotheses, we first identified effects that were clearly influenced by self-esteem. After reviewing the literature, we chose to study people's psychological reactions to success and failure. Previous research with Western samples has shown that the tendency to take credit greater for positive than negative outcomes—the self-serving bias in causal attributions—is more evident among high self-esteem people than among low self-esteem people (Blaine & Crocker, 1993; Dutton & Brown, 1997). Study 1 examined whether this effect occurred in an East Asian culture, China, as well as in America. In a follow-up study, we examined this issue using a different experimental task and added another dependent variable: momentary feelings of self-worth. Previous research in America has found that low self-esteem people feel worse about themselves after they fail than do high self-esteem people (Bernichon et al., 2003; Brown & Dutton, 1995; Brown & Marshall, 2001), and Study 2 sought to determine whether this effect also occurs in China.

Both studies revealed evidence for cultural consistency in self-esteem functioning. Study 1 found that, across cultures, participants believed ability was a more important determinant of success than of failure, and this tendency was stronger among high self-esteem participants than among low self-esteem participants. Study 2 found a similar (though somewhat weaker) effect and also showed that across cultures, low self-esteem participants felt worse about themselves after they failed than did high self-esteem participants. None of these effects was significantly modified by culture.

## Limitations

Every investigation has limitations, and the present research is no exception. First, we studied only college students, admitting the possibility that our results might not apply to samples of different ages or educational attainment. Second, we relied exclusively on self-reports of self-esteem, causal attributions, and momentary feelings of self-worth. Whether our findings would replicate with more implicit measures remains to be seen (Yamaguchi et al., 2007). Third, we studied only one aspect of self-esteem functioning: cognitive and emotional responses to performance feedback. Whether self-esteem functions similarly across cultures in response to other stimuli is an open empirical question. For example, some research suggests that self-esteem serves to mollify existential terror (Greenberg, Solomon, & Pyszczynski, 1997). Future research should examine whether this effect occurs across cultures. Finally, we studied only one East Asian country: China. Whether our findings would extend to other East Asian countries, such as Japan or Korea, remains to be seen.

It is also important to consider the possibility that insufficient power might have influenced our findings. Three-way interactions are notoriously difficult to detect, especially when continuous variables are involved (McClelland & Judd, 1993). Conceivably, our failure to find significant cultural differences was due to a lack of statistical power rather than true cultural similarities. We acknowledge this potential problem, noting also that only some of our simple effects tests reached significance. That being said, we also believe the conclusions we have drawn from our data are justifiable. None of the three-way interactions even approached significance, and their associated effect sizes were uniformly negligible (Study 1, ability attributions:  $\eta_p^2 = .003$ ; Study 2, ability attributions:  $\eta_p^2 = .001$ ; Study 2, momentary feelings of self-worth:  $\eta_p^2 = .000$ ). With effect sizes this small, we would have needed to test thousands of participants to achieve statistical significance at the conventional .05 level. Clearly, sample sizes this large are the exception in quasi-experimental personality research, suggesting that insufficient power alone is not responsible for our findings.

## Implications

Our results bear on several important issues. First, they speak to the cross-cultural equivalence of self-esteem as a psychological construct. As noted repeatedly throughout this article, cultures differ with respect to their average level of self-esteem, with East Asians reporting lower levels of self-esteem than Americans, Canadians, and Western Europeans. Both of our studies replicated this finding, while also finding that these differences did not affect the way self-esteem functioned from one culture to the next. Instead, high self-esteem Chinese reacted much like high self-esteem Americans, and low self-esteem Chinese reacted much like low self-esteem Americans. In mathematical terms, cultural differences in self-esteem seem to function as a scalar—altering the magnitude of two vectors without altering their direction, form, or function.

The present research was not designed to illuminate the source of cultural differences in self-esteem reports. Other research has, however, addressed this issue, finding that cultural differences in self-esteem arise not because East Asians like themselves less than do Westerners but because they are less inclined to tout their competencies and talents (Cai et al., 2007; Heine, 2003; Schmitt & Allik, 2005; Tatarodi & Swann, 1996). This point was made most clearly by Heine (2003), who noted:

. . . theorizing on self-criticism in East Asia has explored how East Asians are critical about their self-competence, but these theories have not proposed that East Asians like themselves any less than North Americans. (p. 600)

Our findings also speak to the cross-cultural importance of self-esteem. Although there are several ways to gauge a construct's importance, we assessed whether self-esteem differences were less influential in China than in America. We found no evidence that this is so. Instead, we found that self-esteem differences were just as meaningful in China as in America, with high self-esteem conferring comparable benefits in both countries.

Although other investigations have found that the correlates of self-esteem are similar across cultures (e.g., Heine et al., 1999; Kobayashi & Brown, 2003; Schmitt & Allik, 2005; Singelis et al., 1999), our research goes beyond earlier studies in an important respect. With

a purely correlational design, one runs the risk that third variables are entirely responsible for the findings. By randomly assigning participants to experience success or failure, we minimize this problem, allowing for a stronger form of inference. Of course, this does not mean that third variables, such as neuroticism or extraversion, could not have influenced our findings, only that self-esteem (or its correlates) causally influences reactions to performance feedback and that this influence is comparable in China and America.

The commonality we found between the two countries also speaks to the universal importance of self-esteem as a psychological construct. Recently, several investigators have suggested that self-esteem is of only limited importance, predicting very few psychological outcomes (Baumeister et al., 2003; Marsh, Craven, & Martin, 2006). Our findings suggest that self-esteem is an important moderator of people's reactions to valenced outcomes and that this effect extends across cultures (see also Brown, 1998; Brown & Marshall, 2006).

We also found evidence for self-enhancement biases in China. Previous research has found that many self-enhancement biases (i.e., a tendency to process information in ways that protect and promote positive self-views and momentary feelings of self-worth) are generally weaker in East Asian countries than in Western ones (Heine et al., 1999; Kitayama et al., 1995). China may constitute an important exception to this general tendency. In a recent meta-analysis, Mezulis et al. (2004) reported that the self-serving attributional bias was nearly as strong in China as in America. Our findings provide additional evidence that self-serving biases exist in China, while also showing that these biases are stronger when self-esteem is high than when it is low.

In highlighting the similarities we have found between China and America, we do not wish to ignore cultural differences. For example, in both studies, performance feedback exerted a stronger effect on performance evaluations in China than in America. Study 1 also found that performance feedback exerted a stronger effect on ability attributions in China than in America, although this effect did not replicate in Study 2. We have devoted less attention to these effects not because they are unimportant but only because neither one was modified by self-esteem, which was the focus of our report.

Finally, our findings serve as a reminder that cultural differences in the magnitude of some phenomena may not necessarily translate into functional differences between cultures (Fiske, Kitayama, Markus, & Nisbett, 1998; Norenzayan & Heine, 2005). Cultures diverge in a great many ways, with some of these disparities representing phenotypic differences in surface manifestations rather than genotypic differences in underlying psychological processes. Self-esteem may be one example of this pattern. Future research should continue to explore the functional equivalence of self-esteem as well as of other psychological constructs. Ultimately, a complete understanding of culture requires understanding cultural similarities as well as cultural differences.

## Notes

1. Preliminary analyses revealed no significant effects of gender for any of the analyses, and this variable will not be discussed again.

2. Because of a computer error, gender was not recorded for the American sample. In this regard, it is worth noting that gender was recorded in Study 1 and no significant effects were found.

3. Because the nature of the experimental task (i.e., social sensitivity vs. integrative orientation) was the only essential difference between Study 1 and Study 2, it is possible to merge the data and analyze the studies

together, including test type as a between-subjects factor. This analysis showed a significant Self-Esteem  $\times$  Performance Feedback interaction ( $b = -.071, p < .001$ ), which was not qualified by test type ( $b = -.028, p = .14$ ). Follow-up analyses found a similar pattern in America and in China, with a significant Self-Esteem  $\times$  Performance Feedback interaction in each country (America:  $b = -.067, p = .005$ ; China:  $b = -.074, p = .006$ ).

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