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Interestingly, also, recent behavioral studies further found that, when faced with social evaluative threats, participants tend to evaluate themselves in more flattering ways (Vohs and Heatherton, [illegible]; vanDellen et al., [illegible]; Brown, [illegible]; Beer et al., [illegible]; Hughes and Beer, [illegible]). Under social rejection or negative social evaluation conditions, participants evaluated their personalities or abilities more desirably and less undesirably in comparison with nonthreatening conditions. Researchers regard this phenomenon as a fundamental self-protection strategy, which is used to protect the self from the harm pursuant to the social threat (Hughes and Beer, [illegible]; [illegible] et al., [illegible]). Moreover, neuroimaging studies have also revealed the neural underpinnings of this fundamental process. They found that self-evaluations made in response to social evaluative threat increased activation in such regions as the orbitofrontal cortex (OFC), medial prefrontal cortex (mPFC), and amygdala. Furthermore, other studies further found that the increased desirability under social evaluative threat was significantly correlated with the medial OFC activity (Flagan and Beer, [illegible]; Hughes and Beer, [illegible]). In general, these behavioral and neuroimaging studies have robustly demonstrated that participants respond to social evaluative threat by emphasizing their own desirability; only those who suffer from low self-esteem or depression fail to respond to social threat by evaluating themselves as more undesirable (Vohs and Heatherton, [illegible]; vanDellen et al., [illegible]).

Despite this, it still remains unclear whether the phenomenon of threat reacting in increasing desirability is culturally universal or specific to Western participants. Although the above-average effect has been observed in both populations of Westerners and East Asians (e.g., Yamada et al., [illegible]; Acker and Duck, [illegible]), previous studies have found that East Asians have different patterns of self-enhancement from Westerners (Kitayama et al., [illegible]; Heine et al., [illegible]; Heine and Hamamura, [illegible]). Interestingly, previous studies have also found some differences in patterns of self-related processing between East Asians and Westerners when they are faced with social threat or negativity. For example, previous studies have found that European Americans show a self-face advantage effect during the social hierarchical threat condition, whereas Chinese participants showed a reversal effect (Ma and Han, [illegible], [illegible]; Liew et al., [illegible]). For this reason, we speculated that East Asians may have different self-evaluation patterns when faced with social evaluative threat.

In addition, previous studies have found that self-construal differences and self-esteem differences existed among Westerners and East Asians: on one hand, Westerners tend to view the self as an autonomous entity that is separated from others, i.e., independent self-construal; on the other hand, the majority of East Asians tend to view the self as a socially embedded entity with strong interconnectedness with others, i.e., interdependent self-construal (Markus and Kitayama, [illegible]; Heine, [illegible]). Although some researchers regard the phenomenon of responding to social threat by emphasizing one's own desirability as a fundamental self-protection strategy, people with an interdependent self-construal may emphasize that augmenting their desirability when under threat is not a wise self-protection strategy because it deprecates others' negative evaluations about the self by emphasizing one's own desirability and breaking the interconnectedness with others. Moreover, some studies have found that the self-construal priming tasks can shift self-construals and modulate both Westerners' and East Asians' performance of self-related judgment (e.g., [illegible] et al., [illegible]; Chiao et al., [illegible]; [illegible] et al., [illegible]). Based on these results, we speculated that self-construal differences may modulate self-evaluation responses under social threat. Also, previous studies have found East-West differences in self-esteem, with East Asians reporting lower self-esteem compared to European Americans (Schmitt and Allik, [illegible]; Chiu and Hong, [illegible]). In summary, this suggests that the potential cultural differences may be caused by the different levels of self-esteem. Therefore, it is necessary to investigate the roles of self-construal and self-esteem in self-evaluation under social evaluative threat beyond these surface cultural differences.

In the current study, we aimed to address these questions specifically. This study used social evaluative threat manipulation and self-construal priming tasks to assess whether East Asians have different response patterns when faced with social threat and whether these different patterns were caused by different types of self-construal. First, to obtain East Asians' response pattern, we used a typical social evaluative threat manipulation which has been used in previous Western studies (e.g., Beer et al., [illegible]; Hughes and Beer, [illegible]). We manipulated the social evaluative threat by providing participants with favorable or unfavorable social evaluative feedback, and then collected their self-evaluation responses ([illegible] above-average effect). We used the same social evaluative threat manipulation and self-evaluation procedures, or observing the pattern differences between East Asians and Westerners as previous studies. Second, this [illegible] assess [illegible] should be no difference between independent self-construal and interdependent self-construal priming.

EXPERIMENT 1

In order to identify whether East Asians avoid different response patterns when faced with social evaluative threat, Chinese participants were recruited and we tested the effect of social evaluative threat on self-evaluation judgments.

Materials and Methods

Participants

Thirty-six healthy Chinese participants (males and females, $M_{age} =$, $SD_{age} =$) participated in Experiment 1. All participants had normal or corrected-to-normal visual acuity. None of them had a history of neurological or psychiatric disorders. The data from an additional six participants were not analyzed because participants expressed suspicion about the threat manipulation at the end of the experiment.

Procedures and Stimulus Materials

A within-subject design was used to manipulate social evaluative threat while participants made self-evaluation judgments. This experimental paradigm has been used in several previous studies (e.g., Beer et al., ; Hughes and Beer,). Two weeks before the start of the experimental session, participants had their faces photographed and were asked for permission to use their photographs in a cross-university rating study of interpersonal communication. The participants were told that some other college students had evaluated whether they would like to become friends with the participants merely from having observed the photographs. During the social evaluative threat manipulation, participants received threatening or nonthreatening feedback. For the threatening feedback, participants observed a rating result from a randomly selected set of raters, with most of the raters deciding that they would not like to become friends with the participant. For nonthreatening feedback, participants also observed a rating result from raters, but all of the raters decided that they would like to become friends with the participant. In fact, there were no actual raters. All photographs were selected from a set of photographs of college-aged students collected in the pilot experiment. After receiving social evaluative threat manipulation in each condition, participants were then instructed to evaluate how they compared with their average peer on personality trait words using a -point scale (+ = much more than the average peer, + = slightly more than the average peer, = no difference from the average peer, − = slightly less than the average peer, − = much less than the average peer). To ensure that the average peer was mentally comparable, we recruited college students and instructed them to evaluate their personality traits compared to the average college student of their age and gender.

Across the experiment, there were threatening and nonthreatening pieces of feedback, which were randomly presented. After each feedback session, there was a block of personality traits needed to be evaluated; a total of personality trait words randomly presented and counterbalanced across social evaluative threat manipulation (for threatening, or nonthreatening). All trait words were undesirable words (e.g., bossy, messy, hopeless, ...), selected from previous studies (Zhu et al., ; Hughes and Beer,). The experiment was conducted in a dimly lit room, in which the participants sat approximately cm away from a monitor (× pixel resolution). The participants' responses were recorded using a mouse. At the end of the experiment, the Rosenberg Self-Esteem Scale (RSES; Rosenberg,), which was the instrument used to assess self-esteem. The scale has been adopted in a Chinese population and demonstrated good reliability (Martin et al.,). After the experiment, participants received a debriefing interview procedure used in a previous study (Hughes and Beer,), which ensured that the participants really believed in our social evaluative threat manipulation and had no suspicions about the experiment.

Results

The descriptive statistics of the measures for self-esteem were summarized in **Table 1**. Consistent with the previous studies, participants were within the normal range of self-esteem (Rosenberg,).

the crossed effects of social threat and self-construal on self-evaluation. Experiment drew on experimental procedures used in Experiment and a widely used manipulation of self-construal priming.

Materials and Methods

Participants

Eighty-one healthy Chinese participants (males and females; $M_{age} =$, $SD_{age} =$) participated in Experiment . Participants were randomly assigned to an independent priming condition, an interdependent priming condition, or a neutral priming condition. All participants had normal or corrected-to-normal visual acuity. None of them had a history of neurological or psychiatric disorders. The data from an additional eight participants were not analyzed because participants expressed suspicion about the threat manipulation at the end of the experiment.

Procedures and Stimulus Materials

Experiment had a (self-construal priming: independent priming, interdependent priming, or neutral priming condition) × (social-evaluative threat manipulation: threatening or nonthreatening feedback) mixed design, with repeated measures on the second factor.

Participants completed the procedures from Experiment with some additional steps. Before the start of experimental sessions (i.e., social-evaluative threat manipulation and self-evaluation), participants were first asked to complete a self-construal priming task (Ma and Han,). In the independent priming condition, participants were asked to read two stories about country's development containing independent pronouns (e.g., I, *mine*) and to count the number of pronouns that appeared (Ma et al.,). In the interdependent priming condition, participants were asked to read the same two stories with interdependent pronouns (e.g., *we, ours*) and count the number of pronouns that appeared. In addition, we also set a neutral priming condition in which participants read two stories about the country's development that did not contain independent or interdependent pronouns. In this neutral condition, participants needed to count the number of certain nouns that appeared in the stories.

After completing the self-construal priming task, the participants received a standardized social-evaluative threat manipulation and completed a self-evaluation task used in Experiment . Participants received the threatening or nonthreatening feedback, which lasted s. Across the experiment, there were threatening and nonthreatening pieces of feedback, which were randomly presented. After each feedback session, there was a block of personality traits that needed to be evaluated. As in Experiment , at the end of the experiment, the Rosenberg Self-Esteem Scale (SES; Rosenberg,), a -item instrument, was used to assess self-esteem. Moreover, participants received the same debriefing interview procedure used in the previous study, which ensured that the participants really believed in our social-evaluative threat manipulation and had no suspicions about the experiment.

Results

A one-way ANOVA (ANOVA), which was applied to the scores on the self-esteem scale data of the Experiment , showed no significant differences in the scores of the self-esteem scale among different self-construal priming conditions, $F =$, $p =$, $\eta_p^2 =$ (see **Table 1**).

The magnitude of the above-average effect (the mean reverse-scored value of personality trait words evaluation), which indicates increased desirability in the self-evaluation task, was calculated for six experimental conditions and was submitted to a (self-construal priming: independent, interdependent, or neutral priming condition) × (social-evaluative threat manipulation: threatening or nonthreatening feedback) mixed design ANOVA with the between-subjects factor of self-construal priming. The results revealed no main effects of self-construal priming or social-evaluative threat manipulation, $F =$, $p =$, $\eta_p^2 =$; $F =$, $p =$, $\eta_p^2 =$, respectively. However, we found a reliable self-construal priming × social-evaluative threat manipulation two-way interaction, $F =$, $p <$, $\eta_p^2 =$ (see **Table 1**). A further simple effects analysis revealed a significant effect of social-evaluative threat manipulation in the independent self-construal priming, interdependent self-construal priming and neutral conditions, $F =$, $p =$, $\eta_p^2 =$; $F =$, $p =$, $\eta_p^2 =$; $F =$, $p =$, $\eta_p^2 =$, respectively.

We tested for replication of prior studies, which used Western participants, and showed that threatening feedback can cause an increase in the above-average effect (Beer et al., ; Hughes and Beer,). The planned *t* tests on simple effects showed that, for the independent self-construal priming condition, the magnitude of the above-average effect in the threatening feedback condition was significantly greater compared to those in the nonthreatening feedback condition, $t =$, $p <$, Cohen's $d =$. However, this replication only occurred in the independent self-construal priming condition. For the interdependent self-construal priming and neutral priming conditions, we failed to find that threatening feedback could cause an increase in the above-average effect compared to those caused by nonthreatening feedback. As opposed to the independent condition, after interdependent self-construal priming and neutral priming, the magnitude of the above-average effect in the nonthreatening feedback condition was significantly greater than those in the threatening feedback condition, $t = -$, $p =$, Cohen's $d =$; $t = -$, $p <$, Cohen's $d =$, respectively. These findings indicate that, following the independent self-construal priming, participants rated themselves as having significantly less undesirable personality traits when they were faced with the social-evaluative threat. However, this effect emphasizes that their desirability when faced with threatening feedback did not occur after participants received interdependent self-construal priming or neutral priming. Instead, participants rated themselves as having significantly less undesirable personality traits when they were faced with the nonthreatening feedback.

DISCUSSION

The current study aimed to observe whether East Asians have a different response pattern when faced with social threat, and then examine whether the different pattern was caused by different types of self-construal. To meet these objectives, we recruited Chinese participants to perform self-evaluation and self-construal priming tasks, with the above-average effect indicating the extent of the positive illusion of self during the self-evaluation. We compared the above-average effect of threatening and nonthreatening feedback conditions during a self-evaluation task and discovered that the Chinese participants rated themselves as having significantly greater above-average effect only when they were faced with the nonthreatening feedback (Experiment 1). Furthermore, we found an interaction between self-construal and the type of social evaluative threat manipulation (Experiment 2). Following independent self-construal priming, the participants tended to deny their negative traits in an overgeneralized way when faced with social evaluative threats. Interestingly, this pattern of downplaying negative traits while under the influence of social threat did not appear after participants received interdependent self-construal priming or neutral priming. In contrast, participants even tended to evaluate themselves more desirably in the nonthreatening feedback condition. Taken together, these findings are consistent with our hypothesis that East Asians would exhibit an opposite pattern of self-evaluation when faced with a social threat, and people with different types of self-construal would have different patterns of self-evaluation when faced with social threats.

Consistent with previous above-average effect studies using Western participants, Chinese participants viewed themselves as having less negative personality traits compared to their peers (e.g., Yates et al., [illegible]; Acker and Duck, [illegible]; Beer and Hughes, [illegible]; Beer et al., [illegible]). However, the current study further found that, in comparison to the threatening feedback condition, Chinese participants tended to rate themselves as having significantly greater above-average effect when they were faced with the nonthreatening feedback condition. Different from previous studies, the current study found an opposite pattern (Vohs and Heatherton, [illegible]; vanDellen et al., [illegible]; Brown, [illegible]; Beer et al., [illegible]; Hughes and Beer, [illegible]), suggesting that the effect of social threat on self-evaluation is not culturally universal. Namely, Western participants tend to evaluate themselves more desirably in threatening situations, while East Asians tend to exhibit this self-favoring bias only in nonthreatening situations but not in threatening situations. Our results converge with results from studies that examine the influence of social threats on self-related judgments. Just as previous studies have suggested that social threats may weaken the self-advantage effect of Chinese participants (Ma and Han, [illegible]; Liew et al., [illegible]), positive themes may facilitate the self-advantage effect of Chinese participants (Ma and Han, [illegible]). Overall, the initial observations implicate that the potential cultural differences between East and West may exist in the processing of self-evaluation under social threat. More importantly, the current study further investigated the role of self-construal in self-evaluation under social evaluative threat. Several studies suggest that culture can influence and form one's self-concept. In particular, Westerners tend to be more individualistic and have an independent self-construal. In contrast, East Asians tend to be more collectivistic and have an interdependent self-construal. Based on these views, in the second experiment, we tried to identify whether the cultural differences stem from the participants having different types of self-construal. In line with previous studies, we found a similar pattern when participants were primed by independent self-construal (Beer et al., [illegible]; Hughes and Beer, [illegible]). This finding was a conceptual replication of previous Western findings. Moreover, the most striking finding was that we found that the pattern of the above-average effect under the interdependent self-construal priming and neutral priming conditions contrasted with that under the independent self-construal priming condition. These results replicated the result of our first experiment, and further highlighted the effect of self-construal. The current findings have important implications for broadening investigations of self-evaluation under socially threatening environments. Most of the previous research on self-evaluation under socially threatening environment has primarily focused on identifying the behavioral performance and neural activation of the Western samples. These studies have concluded that people tend to emphasize their desirability when experiencing social threats, which can be regarded as a self-protection strategy. The current study further investigated another typical type of sample, i.e., East Asians and suggests that whether a participant emphasizes his or her desirability in the face of social threats largely depends on how the participant views himself or herself (i.e., self-construal). Namely, the previous conclusion may apply merely to the participants who hold an independent self-construal. If the participants hold an interdependent self-construal, they would tend to emphasize their desirability in nonthreatening environments rather than threatening environments.

One possible argument is that the reason that the results showed there were differences between the two groups is because the level of self-esteem of East Asians is lower than that of Westerners (Schmitt and Allik, [illegible]; Chiu and Hong, [illegible]). However, the current experiments have found that the Chinese participants report a similar self-esteem score and global magnitude of above-average effect as previous Western findings (e.g., Beer et al., [illegible]; Hughes and Beer, [illegible]). Namely, the Chinese participants may feel as positively toward themselves as Westerners do and have a similar level of self-esteem (Cai et al., [illegible]; Boucher et al., [illegible]). Based on these results, it seems that the experimental effect of the current study was not caused by the different levels of self-esteem.

Several previous studies have also found that people tend to emphasize their self-desirability in response to social evaluative threats and that only individuals with low self-esteem or depression often serve as exceptions (Vohs and Heatherton, [illegible]; vanDellen et al., [illegible]), but our current results provide another exception: the recruited Chinese college students with normal self-esteem and that none of them had a history of neurological or psychiatric disorders. Thus, it is unlikely that individual difference factors would affect the results of the current study. If the different tendency of emphasizing their self-desirability in the face of social threats after different self-construal priming was not due to the participants in different conditions having

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Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

The reviewer YZ declared a shared affiliation, though no other collaboration, with the authors to the handling Editor.

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